

CHAPTER II.

ON CHARPIE—COTTON-WOOL.

Of this there are four kinds, viz., *raw*, *long*, *rasped* and *web-like*. But one of these, the *raw*, is of moment.

This is made by picking apart the threads of a piece of linen, each filament having a length from 2 to 3 inches; if they are too short, the filaments are apt to *mat* or *lump* together, and so render it unfit for the uses for which it was intended. A good article should be white, soft and light, and somewhat elastic.

The difficulty of procuring a properly prepared charpie, and of keeping it free from matting has, at present, induced most surgeons to substitute for it clean cotton-wool.

Charpie, or cotton-wool, is used in surgery to protect from irritation, to compress, and to slightly irritate, as well as to maintain in equal temperature a wounded member: one of its most common uses is, however, as an absorbent of the secretions from a wounded surface. For these multitudinous uses it is employed under the form of *plumasseaux*, *gateaux*, *boulettes*, *bourdonnets*, *tampons*, *pelotes*, and layers, or *laminæ*.

A Plumasseau (*a pledget*)—is but a bunch of charpie which has been drawn, lengthwise, lightly through the fingers till the filaments of the mass are made parallel with each other, and the mass made of the same thickness and density throughout. It may be used as an absorbent of secretion, for slight compression, or for carrying medicaments to a wounded surface.

A Gateau (*a cake*)—is nothing more or less than a large plumasseau, with the ends of the charpie folded into the centre of the mass. It is used more especially for compression, and for absorbing the secretions of the wound.

A Boulette (*a little ball*)—is simply a ball of charpie, formed by rolling little masses of it in the palms of the hands.

[18]

Boulettes should be soft, elastic and loosely made. Are used for cleansing, or as carriers of sundry medicaments.

A Bourdonnet (*a dossil or lump of lint*)—is a small plumasseau tied closely around the middle, giving it an hour-glass shape. Used as a compress, or as a slight tampon in cases of hæmorrhage.

Tampon (*a plug*)—is a large *bourdonnet* and prepared in the same manner as the preceding. Other forms and varieties are in use; as the vaginal, rectal, etc. The two latter are, perhaps, best prepared from pieces of lint, 3 or 4 inches square, soaked in water, then introduced singly, and "crowded closely home." Sometimes, as in lithotomy, wounds of the rectum, etc., we wish to make strong *lateral* compression; here use a tampon formed over a female (metal) catheter, by fastening the slotted end of the instrument securely to the center of a piece of lint 8 or 10 inches square; introduce this into the wound, retaining the corners of the lint at the surface. When introduced, pack your charpie, or lint, or cotton-wool, closely around the shaft of the catheter, between it and the surrounding piece of lint, till you get the requisite amount of compression. This form of a tampon can be successfully used in these cases, as the lint (fastened to the catheter) prevents the escape of the charpie, or other packing substance, up the gut (in the case of rectal use), or beyond the point where pressure is desired to be made.

A Pelote (*a ball, or pin-cushion*)—is formed by tying firmly a wisp of charpie in a piece of lint, giving it something the shape of an old-fashioned pin-cushion, as made over a broken lamp-stand. Uses: bound over the course of an artery, it serves to arrest, for the time being, the flow of blood through it. It also serves the purpose of a tampon in certain cases of hæmorrhage.

Tents—have also been made of charpie by taking the long fibres of it, doubling in the middle, and then crowding it into the wound. But in our day of sponge tents, and the *laminaria digitata*, such a use of it will not be thought of, save in a case

of emergency, when the manufactured tents are not at hand.

The most of the above articles of dressing are now made from what is generally known as "surgeon's lint" (see Chapter III). Still, some surgeons prefer the charpie, or even oakum dressing, to any other. The oakum is preferable in case an antiseptic surgical dressing is desired.

CHAPTER III.

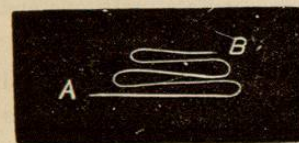
ON COMPRESSES.

These are best made of the "surgeon's lint" cloth, as it gives a more smooth, even and regular pressure. Their forms and sizes are almost innumerable, the surgeon using what the exigencies of the case may demand; yet, the following brief classification may prove of service. I start with the most simple:

The Square.—Its name indicates its peculiarity of form; it may be of a rectangular piece of the "surgeon's lint," folded in the middle to make a square, thus being double thickness; or, it may be built up of a succession of smaller pieces to a pyramidal form, forming the *graduated pyramidal compress*. If each successive piece is of the same size as the first, it forms the *graduated regular compress*. In either of the two latter forms, it should be stitched, through and through, in two or three places, so as to prevent the pieces becoming displaced.

Perhaps a simpler way of forming a graduated compress is the following: Cut quite a long piece of the "lint" of the width of the compress desired, then placing one end of the fragment flatwise on the table to the extent of the size wanted in a longitudinal direction, fold it over upon itself, reversing the motion of the hand, till you reach the initial edge of the first layer; here fold over again, reversing the motion of the hand, and so on. Fig. 1 will give an idea of the manœuvres

FIG. 1.



indicated, as the compress is seen on an exaggerated perpendicular section. A is the initial, B, the final end. In this case some stitches will be needed to confine the folds securely.

The **Triangular** and **Rectangular** are but modifications of the above, and need no further description.

The Circular is, as its name indicates, a circular piece of "surgeon's lint." We have three varieties of the circular compress: 1st, the *clipped*; 2d, the *perforated*; and 3d, the *graduated*. The first is the ordinary kind, the edges being clipped inwards to a sufficient extent that it may lie smoothly on a part. The second variety admits of any modification desirable in the position, form, or extent of puncture or cut. The third is essentially formed in the same manner as the others of its class.

The Complex.—Under this head all perforated and fenestrated compresses, and those of two or more heads, are meant to be included, whether they are rectangular or square.

A Compress of Two Heads is simply a common compress, with one end split at the centre, as you see in Fig. 2.

FIG. 2.



FIG. 3.

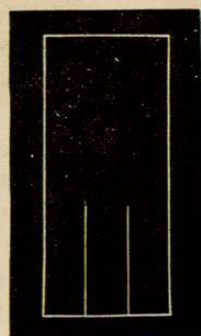


FIG. 4.



One of Three Heads.—A common compress with one end split into three equal or unequal parts, as seen in Fig. 3.

A Sling Compress is a common compress having each end split at the middle, as seen in Fig. 4. It is also known as a *compress of four heads*.

A Compress of Six Heads.—This is a compress similar to *one of three heads*; the difference being that *both ends* are split into three equal or unequal parts.

The Button-hole Compress is one that has two or more slits through its centre, as seen in Fig. 5.

The Perforated Compress is one that has been, as its name implies, filled with small perforations, either by means of a stylet, or small punch, or by having pieces snipped out by the scissors. Fig. 6 will give you an idea of this. Is especially useful as a dressing for a *freely* suppurating surface.

FIG. 5.

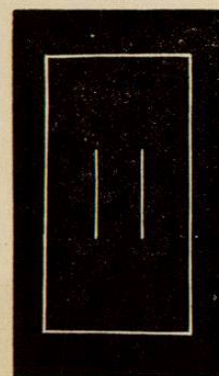
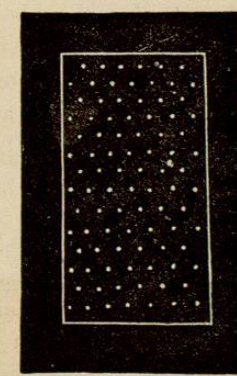


FIG. 6.



The Uses of these various compresses are still more varied than their multiplicity of forms. The demands of the case must be met, by the ingenuity of the surgeon, in devising something appropriate; and, having a knowledge of these more generally used forms, he can choose the one that will be most subservient to his purpose, or modify it to suit the exigencies of the case.

CHAPTER IV.

ON BANDAGES IN GENERAL.

Hippocrates has said that, in bandaging, there is a two-fold purpose to be kept in view, viz., "that which regards it while doing, and that which regards it when done. It should be done quickly, without pain, with ease, and with elegance; *quickly*, by dispatching the work; *without pain*, by being readily done; *with ease*, by being prepared for everything; and *with elegance*, so that it may be pleasing to the sight."

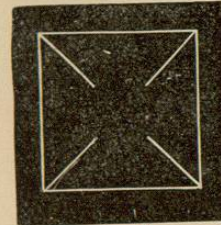
There could, perhaps, be no more terse, yet comprehensive, rules to be kept in mind as regards bandaging than these offered by that great medical sage nearly twenty-five hundred years ago. And yet, how often, in the drill our students receive in their class-rooms, has this exercise been deficient both in the teacher and in the taught. Yet, to the surgeon, a smoothly, rapidly applied bandage, aside from its extreme usefulness, has an element of beauty about it that is not readily forgotten. It begets confidence, too, in your patient, in his friends, and adds greatly to your professional reputation. Hippocrates appreciated this, and instructed *his* pupils thoroughly in the minutiae of the art. To-day it is almost wholly neglected, and even if spoken of at all, is dismissed as hurriedly as possible from the thoughts of faculty and students.

Hippocrates further adds: "The form of the bandage should be suitable to the form and affection of the part to which it is applied. The force of the constriction should be such as to prevent the adjoining parts from separating, without compressing them much, and so that the parts may be *adjusted* and not *forced* together." He further adds, after treating of the subject quite exhaustively, that "the bandages should be clean, light, soft and smooth. The heads of the bandages should be hard, smooth and neatly put on." This, coming from such antiquity, and agreeing with the hospital experiences of the last twenty-three hundred years, should be enough to recommend it to your most earnest consideration.

[24]

The Maltese Cross.—This is formed from a square piece of surgeon's lint, by cutting up from each corner two-thirds of the way towards the centre of the piece, giving you, when completed, the form seen in Fig. 7. Another

FIG 7



Maltese Cross.

way of forming it is, to double the square piece of lint at its middle, then, transversely to this fold, double it over again; this gives you four thicknesses of the lint. This done, cut diagonally across this small square, to a distance of two-thirds of the length of the diagonal, beginning at the four *free* corners of the folded lint. On unfolding, you will find you have a regularly and evenly made cross of this pattern.

USES.—Most generally employed in stump- and joint-dressings, as it readily adapts itself to all *convex* surfaces, the corners smoothly folding over each other, as it is applied.

A Roller—is the term given to our common narrow bandage; probably because to be used, it must first have been rolled smoothly and nicely up. Fig.

FIG. 8.

8 shows you the bandage, or roller, as ready for use. The part A is known as the *head*; the part B is the *initial end*.

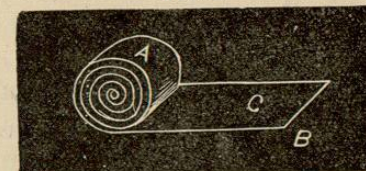


Fig. 8 is therefore a *roller with one head*, and is classed as a *simple* bandage.

Rollers may be of either one or two heads, at pleasure. In case of the latter the second head is formed by rolling up the initial end (B, in the cut) the same as the head A has been rolled. However, as a double-headed has no advantage over the single-headed roller, save in the bandage known as "the recurrent of the head," and a few others, I shall dismiss it, with but few exceptions, from this work. A single-headed roller is much more easily applied, looks just as well, and, in most cases, even answers the purpose better.

Our single-headed roller has, then, besides the initial end and head, a *plane*, C; an *internal surface*, C; an *external surface*; a *superior* and an *inferior* border.

How to make a Roller.—Rollers are generally made of flannel. In some delicate operations where "heating" of the wound, or the contiguous surface, is feared, linen or cotton has taken its place. The two latter substances never apply so evenly or smoothly as the flannel, as there is little or no elasticity in them. On the contrary, both edges of a flannel roller will lie smoothly upon a part if properly applied—a result difficult to be obtained on the use of a linen or cotton roller; that is, if the surface be anywise irregular or uneven. Farther than this, the stimulus, from pressure to a part, that flannel often gives, through its quality of elasticity is a great *desideratum* in most cases that require a bandage. Then, too, if the part should swell, the bandage gives; if the swelling be reduced, the bandage, in great measure, accommodates itself to this change, "support" thus being continually kept up; two other important qualities that are lacking in the linen or cotton roller. Of course the two latter have a plea of "cheapness,"—of doubtful consideration, however, when the comfort (present and future) of the patient is at stake.

Tearing the Bandage.—It would seem almost superfluous to speak of such a small affair; yet, if one has many bandages to roll, it is an important item to save as much time as possible. Having, then, the cloth in its width as it comes from the store, notch it at the points that will give you the width of bandages desired; this done, give to an assistant each alternate strip, you holding the others in your hands. Then, with a long and steady pull, the whole bolt of cloth is divided, in a moment, into bandages of the widths desired.

The flannel having been torn into proper strips, as regards length and width, one end is taken and doubled over eight or ten inches upon itself; this doubled portion again doubled upon itself, and this again upon itself, until it is in proper shape for "rolling," or winding. This is started by gently rolling the doubled portion between the palm of the hand and table, or knee, as the case may be, until three or four turns are taken; then the roll is grasped between the thumb and forefinger (the second finger assisting if need be) of the *left* hand, the *external* surface (Fig. 9) of the bandage being *up*. The unwound portion is grasped by the right hand and allowed to fall in between the

thumb and forefinger, as seen in Fig. 9. (Some surgeons prefer to have it fall in between the first and second fingers, the thumb crowding in closely to the "head" of the bandage.)

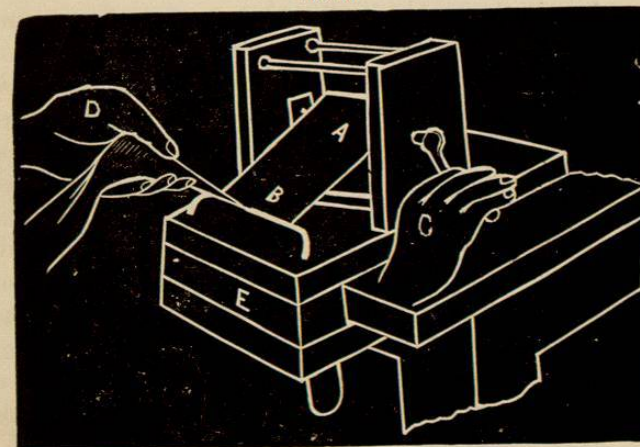
FIG. 9.



This done, holding the bandage quite firmly, yet loosely enough to slip, between the thumb and finger, the thumb hugging tightly the "head,"

by a downward or supine motion of the right hand, you partially circle the forming roller-head, the ring-finger sliding over it as a guide. This done, grasp the roller-head firmly with the right hand (by pressing it against the ball of the thumb with the second and third fingers), pronate the hand as far as possible, then confide the grasp of the roller-head to the thumb and fingers of the left hand, to go through with the same manœuvres as before. In all of these motions the *left hand* is to be perfectly immovable, the right performing all the work, save the simple holding of the roller-head when the right is making its supination around it. Although beginning these motions slowly, you can soon increase their rapidity until you can "roll" a bandage with surprising quickness. As soon as the "catch" to it is mastered, it is easily and rapidly done.

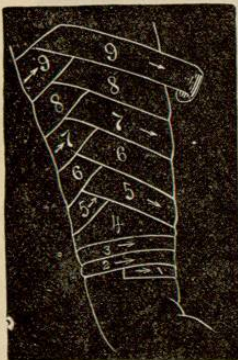
FIG. 10.



Instead of trusting solely to the hand-rolling of bandages some hospitals now make use of a rolling machine, similar to that shown in Fig. 10. In the cut there is shown the clamp, *E*, that fastens the whole firmly to the table. The bandage is fixed to the axle, *A*, being threaded beneath the bar, *B*. By holding the bandage "taut" against the bar with the left hand, *D*, as the right hand, *C*, turns the crank to the axle, all wrinkles will be smoothed out from the bandage as it is rolled up. This makes a very handy and useful addition to the apparatus of the surgeon's office.

How to Apply a Roller.—To be applied easily it must be wound evenly and tightly. Hippocrates said, "the turns of a bandage should be made from right to left, and left to right, except on the head, where they should be in a straight or vertical direction." I would simplify this by allowing the surgeon to suit his own convenience, remembering only to place the *external surface* of the initial end to the part to be bandaged. This done, press it firmly with the fingers of the left hand to the member; the right hand grasps the roller-head tightly between the thumb and first and second fingers, and carries it firmly down and around the member (letting it slowly unwind) as far as possible; then, grasping it with the left hand, the thumb of the right confining the initial end, complete the turn, overlapping the initial end completely or partially, as you see in turns 1 and 2 in Fig. 11. Make, then, one or two circular turns

Fig. 11.



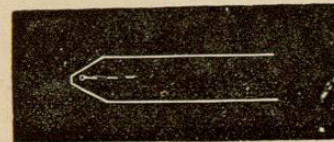
as 3 and 4, firmly and evenly sweeping around the limb, each overlapping the preceding course about one-third the width of the bandage. The "reverses," which should always be made whenever the part to be bandaged assumes anything of a pyramidal or conoidal contour, as they keep the bandage from slipping down, are formed by pressing the first and second fingers firmly upon the superior border of the bandage at the point where the reverse is to be made, thus securing the bandage; then, making a slack motion

of the right hand turn the bandage over, *end for end*, by the right hand fingers, and bring what was the *superior* border of the bandage down to the top of the left hand's finger, or fingers that are confining the bandage; you thus make an *inferior* of what was the superior border. Each succeeding reverse is to be made in the same way. There is also a "catch" to this, although simple as it may seem, that only repeated trials will enable you to become master of. The main points, however, to bear in mind, are: 1st. Keep the bandage always tight and with equal tension at every turn. 2d. Bring it up somewhat diagonally, before making the reverse, and carry it down diagonally (the opposite of the other) after the reverse is made, as you see in the figure. 3d. Always have the edges of the overlapping turn as nearly equal all around as possible; this is best done by keeping a "close eye" upon the upward and downward motions of the roller-head, and after a time this will be done unconsciously. The first few applications of a reversed roller should always be slowly and pains-takingly made, so that your hands may not learn some bad tricks that must be unlearned them before they will apply one smoothly and nicely. *Festina lente* is a good motto in bandaging.

How to Confine a Roller.—To confine a roller properly is a nice point in the application of such a surgical dressing, although it is a manœuvre that is too often clumsily and imperfectly made.

On reaching the terminal end of your bandage, always fold under the edges of the end, so as to bring it to the shape seen in Fig. 12. Then introduce your pin (*not* perpendicularly but) in a direction contrary to the course of the bandage, as you see in the wood-cut. By so doing you will have it smoothly and *securely* confined. If the roller be very wide, two pins may be necessary. The "strain" on the bandage thus serves only to draw the pin into its place, and no ordinary amount of friction from the bed-clothes or wearing apparel will loosen it.

Fig. 12.



CHAPTER V.

CLASSIFICATION OF BANDAGES.

In olden times bandages received their names from four sources, viz., 1st. Their authors. 2d. Their forms. 3d. Their uses. 4th. From some fancied resemblance to some article, or manœuvre.

Thus we have the Hippocratic *rhom*; the *crooked nose*; the *hare*; the *quadriga*, etc., as epidetic terms frequently to be met with on perusal of old authors. Nothing like a classification proper was attempted by them. Coming nearer to our own time, an attempt was made to put them all under the heads of their uses; such as "compressive," "retentive," "reductive," etc. But this utterly failed, as almost any bandage could be used for any of the special purposes for which the others were employed. GERDY finally brought forward his system, that of referring all to some general figure, as "cross," "circular," "spiral," "figure of 8," etc., adding, as a generic cognomen, the part to which it was applied; as, "cross of the eye"; "cross of the head"; "spiral of the finger"; "figure of eight of the chest," etc. MAYOR then produced his system of triangular and quadrilateral bandaging, naming them from the anatomical parts to which they were applied; a double name, in fact, the first being the part whereat the base of his triangle was applied, the other around or over which the ends were passed and fastened, *e. g.*; "occipito-frontal" would indicate that the base of his triangle was at the occiput, and the two ends of the triangle had been passed around and tied at the forehead. This latter system of nomenclature is really the more scientific; but it is hardly convenient to adapt it to our roller bandaging, the system most universally employed. The system of triangles and quadrilaterals of Mayor, though very convenient, will hardly come into general use, as it is impossible to get so

smooth and nicely adjusted a triangle as a roller. In some cases, as for instance that of an exigency, it is well to understand his system; as by that you can adapt almost anything to the purpose until a better dressing can be procured.

All bandages are divisible into two great classes, the *simple* and the *compound*. Under each of these are found many varieties, the prominent ones of which will be given under their respective heads.

A Simple Bandage is understood to be of a single strip of flannel, or cotton, and may have one or two heads; may or may not be invaginated. In Mayor's system, a single triangle or quadrilateral, invaginated or not, comes under this division.

A Compound Bandage can be briefly defined as a bandage made up of two or more pieces of flannel or cotton, whether in strips (rollers), triangles, cravats, or quadrilaterals; and may be invaginated, stitched (as a **T**), or modified in any way that the surgeon may see fit.

Besides these two general classes we have a *regional* classification; merely, however, for descriptive convenience, as the execution of a bandage is essentially the same in all parts of the body. These divisions are, 1st. Bandages of the Head. 2d. Bandages of the Neck. 3d. Bandages of the Upper Extremity. 4th. Bandages of the Trunk. 5th. Bandages of the Lower Extremity.

This general plan of description I shall follow, giving first the roller bandages, belonging to the simple order, following each one with Mayor's that fulfill the same office; and lastly give those of the compound order, Mayor's triangles and cravats following those of Gerdy's system (the roller bandages), as before.