

in at some convenient section near where it leaves the bath. Unless some such means be adopted it is plain that when the water becomes electrified the current will leak away to earth along the pipe, which latter being of metal and of large area possesses very little resistance. For the same reason it is not advisable to use an enamelled metal bath, for though if the enamel remain perfect the insulation may be good enough, yet the moment there is the least flaw or chip all insulation is gone, and the bath becomes useless for electrical purposes. In some instances metal baths are used, the bath itself being made thus one large electrode, but this arrangement is not recommended now owing to the electrolytic action between the electrified water and the metal and other electrical difficulties. It is always well to avoid electrical complications as far as possible; therefore one of the first essentials of an electric bath is a well-insulated non-conducting bath.

The water for filling the bath should be rendered a good conductor by the addition of salt or acid, preferably the former (1½ lb. of common salt to thirty gallons of water will do), and should be of such temperature that the patient may remain immersed therein with comfort for from ten to fifteen or twenty minutes—about 98 degs. F. is best, but anywhere between 90 degs. or 100 degs., according to the fancy of the patient, will do very well. Suitable switches connected with the battery should be arranged on or near the sides of the bath, but out of the patient's reach.

The current should never be switched on till after the patient is in the water, and placed comfortably in position therein, and it should always be switched off again before the patient attempts to leave the water. If this be not done, feeble or disabled patients might easily come into contact with one or both electrodes, and so receive a shock, involving unpleasant or even serious consequences.

If it is desired to electrify the water only, two large pad electrodes may be used, one being placed near the feet of the patient, but not necessarily in contact therewith, and the other near the head. The current should then be gradually turned on till the required Cs is arrived at.

This form of bath, though no doubt useful in some cases, does not commend itself to us, for two reasons: first, because the water is generally a better conductor than the human body, and therefore nearly all the current simply passes through the water from electrode to electrode without entering the patient at all; second, because even if, owing to some change in the relative conductivity of the water and the patient, some appreciable share of the current does enter the body, yet it is impossible to measure how

much, and thus the dose administered remains an altogether unknown quantity.

A better way is to put only one electrode in the water, preferably near the feet, and to place the other on some convenient part of the body, which is just out of the water.

In most cases where a general tonic effect is desired, a good plan is to place one electrode in the form of a pad just under the nape of the neck as the patient lies back at full length, with the whole body, except head and neck, fully immersed in the water which carries the other electrode. A sling of webbing attached to the two sides of the bath, and rendered adjustable as regards length by a strap and buckle, enables this to be done satisfactorily. The sling being adjusted, the electrode is laid thereon, and then the patient lies back, making good firm contact with the pad. In cases where this is not convenient, the neck pad may be tied in position by a piece of tape. In other cases, where desirable, one or both hands may grasp a conducting rod laid across the top of the bath. A very useful adjunct to any of the above is sponging the head, neck and spine for a few minutes with a sponge electrode connected to one pole, while the other remains in the water, but *very great care* is necessary in dealing with the applications to *the head*. Only a *very small* current must be used there, and every precaution taken to prevent shocks.

(To be continued.)

## PRIZE ESSAY COMPETITION.—XVII.

### Particulars and Notes of Four Cases, Surgical and Medical.

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HOSPITAL Nurses as a rule do not make detailed notes—except in Ovariectomy cases—of the various patients nursed by them; while those occupied in Private Nursing, having generally but one patient, find greater opportunities of studying more minutely the cases intrusted to them. I fear, therefore, that in this essay Hospital Nurses have but a secondary chance of success.

The four subjects chosen by me for this paper are—

TETANUS,  
PNEUMONIA (DOUBLE),  
COLOTOMY, AND  
OVARION CYST—

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