

iron calenders, kept warm by steam passing through them. The product is beautifully uniform and much less stiff than when no petrolatum is used. This gauze has the advantage of retaining the acid very well at ordinary temperatures, while at the temperature of the body it is slowly given up, causing an antiseptic vapor to envelop the wound.

The objection to dressings prepared with resin, wax, or oil is that they are non-absorbent. The demand is now mainly for absorbent carbolised gauze, in which the medication is combined with glycerine, and distilled water or alcohol. Carbolic acid is much less active in oil, wax, or resin combination than when combined with alcohol, glycerine, and water.

Iodoform Gauze.—The formula given by the National Formulary is probably the best adapted to the use of the pharmacist. It also works very well in the large way. Benzoin tends to somewhat impair absorbency. Ready-bleached gauze is apt to contain traces of starch, and if in the process a little iodine is liberated the gauze may assume a greenish tint owing to the combined blue color of iodide of starch and the yellow of the iodoform. Should this occur, the gauze may be hung in a chamber over the floor of which a little water of ammonia has been sprinkled. The ammonia-vapor breaks up the iodide of starch:—

Iodoform	10 parts
Stronger ether (s.g. 725)	40 parts
Alcohol (s.g. 820)	40 parts
Tincture of benzoin (1 in 5)	5 parts
Glycerine	5 parts
Gauze muslin	a sufficient quantity

Dissolve the iodoform in the stronger ether, then add the alcohol, tincture of benzoin, and glycerine. Immerse in a weighed quantity of this solution, contained in a suitable vessel, the exact amount of gauze muslin required to absorb the whole of it to produce a product of a prescribed percentage of iodoform; work it about with a pestle so as to impregnate it uniformly, then take it out and hang it up to dry in a horizontal position and in a dark place. Lastly, wrap it in paraffin paper and preserve it in air-tight receptacles.

Bisulphide of carbon being a powerful solvent of iodoform, naturally suggests itself for the preparation of this dressing, but its disagreeable odor and extremely combustible nature make its use undesirable. In the writer's experience, alcohol and ether as solvents act very well in preparing iodoform dressings of all kinds.

Corrosive-sublimate Gauze.—The following is the formula used by the medical department of the German army:—

Mercuric chloride	50 parts
Rectified spirit	5,000 parts
Distilled water	7,500 parts
Glycerine	2,500 parts
Fuchsin	5 parts

The gauze is saturated in this solution, passed through a wringer, and dried. The object of tinting is to make the sublimated readily distinguishable from plain and other gauzes. The strength of gauze prepared by this formula, if the greatest expression is used, will be about 1 to 300, with ordinary wringing out nearer 1 to 250 or 200.

It is well to keep the following precau-

tions in mind when making this gauze:—

Water used in preparing sublimate solutions should always be distilled.

Organic principles, wood-gum, &c., present in common gauze have a marked reducing action on sublimate, particularly in the presence of moisture.

Mercuric chloride forms an insoluble albuminate of mercury in contact with the albuminous matter of wounds. To prevent this Dr. Laplace, as far back as 1887, advised the use of tartaric acid in combination with corrosive sublimate. Drs. Lubbert and Schneider, however, found that the acid caused irritation, and that an alkaline chloride accomplished the desired result better. The formula recommended by them is:—

Mercuric bichloride	3 parts
Sodium chloride	100 parts
Distilled water	600 parts
Glycerine	100 parts
Rectified spirit	200 parts

Dissolve the sodium chloride in water; filter, add the sublimate, and when dissolved, the glycerine and spirit.

Dressings will commonly hold $1\frac{1}{2}$ times their own weight of this solution.

The sal-alambroth gauze accords with the above statement regarding the use of alkaline chlorides. Sal-alambroth, or ammonio-mercuric chloride, is prepared (*vide* "Extra Pharmacopœia") by mixing solutions of mercuric chloride and ammonium chloride in molecular proportions—271 of the former to 107 of the latter. A gauze is prepared by treating in the usual way with a 1-per-cent. solution of sal-alambroth containing some glycerine, and tinting with aniline blue.

When it is considered that the 1-per-cent. gauze recommended by this authority represents practically two-thirds of 1 per cent. corrosive sublimate in its most active form, we are led to wonder why such low strengths as 1 to 2,000 or 1 to 4,000 are sometimes called for. From the experiments of Drs. Link and Voswinkel it would appear that a strength of less than 1 to 400 is liable to be reduced largely or entirely in the presence of moisture. The writer is therefore inclined to discourage moist sublimated gauzes of lower strength than this. While 1 to 4,000 or 1 to 2,000 gives satisfaction as irrigating solutions, which must of necessity be very weak, this is no reason why a 1 to 2,000 gauze should be of value. Granting that the sublimate is not all reduced by the cotton fibre, it may be diluted so many times in contact with the fluids of the wound as to be practically of little or no use. In the writer's judgment from 1 to 400 to 1 to 200 is a proper range of strength for sublimated gauzes.

Double Cyanide of Mercury and Zinc Gauze.—Sir Joseph Lister's latest directions for the preparation of this gauze have been mentioned in this journal (see the *Chemist and Druggist*, March 4, page 324), and need not be further referred to here.

Hydronaphthol Gauze.—The idea of medicating dressings with an antiseptic having such a solubility as to yield itself

fast enough for thorough antiseptis, but so slowly that it will require a long time for it to be washed entirely from the dressing, is evidently a most excellent one. Hydronaphthol possesses this great advantage, being soluble at ordinary temperatures to the extent of about 1 part to 1,000, and is reliably antiseptic in this proportion; 5-per-cent. hydronaphthol gauze may be prepared in the same manner as salicylated gauzes, merely substituting hydronaphthol for the salicylic acid in the formula before given. Dressings impregnated with hydronaphthol are naturally very lasting, as compared with carbolic and similar dressings, and its compatibility with albuminous fluids gives it preference over corrosive sublimate.

Bismuth Subiodide and Hydronaphthol Gauze.—The writer has submitted to local surgeons a gauze containing 10 per cent. bismuth subiodide and 1 per cent. hydronaphthol, and has received very favorable reports from its use. The subiodide may be held in suspension by agitation in process of preparing the gauze.

Benzoated Gauze.—Prepared by substituting benzoic acid 5 per cent. for salicylic acid in the formula given for salicylated gauze.

Borated Gauze.—Ten-per-cent. gauze may be prepared after the manner of salicylated gauze, slightly warming the solution.

Thymol and Eucalyptol Gauzes.—Five-per-cent. thymol or eucalyptol gauze may be prepared in the same way as the salicylated.

Containers for Surgical Dressings.—For gauzes the writer prefers a light container prepared from pure wood pulp in the manufacture of which hydronaphthol is used. This container, immediately before use, should be lined with melted paraffin sterilised by heat, and, after packing, hermetically sealed. There is with this container no possibility of corrosion as with tin, and no liability of breakage as with glass. Lacquered after sealing, the package is perfectly air-tight. Instead of the sterilised paraffin lining, the inner surface of the container may be coated with celluloid varnish, rendered antiseptic with hydronaphthol, time being allowed for thorough drying.

A Few Suggestions on How to Study.

Twenty Minutes' Talk by Dr. H. M. WHELFORD before the Missouri Pharmaceutical Association.

The success of a true friend stimulates the sense of gratification in the average human breast. The student is always considered to be a friend of the teacher, and thus it is that we experience fruition in direct proportion to the success of our students. The teacher who watches a young man from the time he enters an institution of learning and carefully notes his progress day by day, week by week and month by month, feels a correspond-