ANTISEPTIC DRESSINGS.

salicylic acids in dressings. (Medical Press and Circular, March, 1876.)

His experience has been that the salicylic acid dressings do not exert so marked an influence in controlling suppuration as carbolic acid, which is in a great measure due to the fact that it is non-volatile, and so does not penetrate the depth of wounds. It wants, too, the advantages that arise from the stimulating action of the carbolic acid, and so wounds progress rather more slowly under its action.

The spray of salicylic acid, though entirely odorless, is quite unfit for general use, as no one can resist a constant tendency to sneeze while exposed to it.

He has obtained a great number of completely successful results with salicylic acid alone, and does not hesitate to use it by itself in many cases—for instance, in the treatment of burns.

The salicylic dressing he has found most convenient is that recommended by Thiersch, made by saturating jute with the acid, 3 per cent. by weight, adding a little glycerine, 43-lb, which prevents the drying of the jute. He thinks great advantage attaches to the moist condition of the dressing; it is ready to absorb moisture, and if air be drawn through it, as in wounds affected by respiration, the moist threads serve, he is confident, as better filters than dry ones would. The advantage of addition of glycerine, according to Thiersch, is that it prevents the dry acid from flying off in dust from the jute.

Nothing can be easier made or more readily applied than the jute dressing. He applies it beneath a few folds—generally three—of gauze, containing sheet gutta-percha, directly on the wound, except in cases where the support of a bandage is required directly on the flaps, etc. This mode of application, made under the carbolic spray, combines both acids, and the application of the jute next the wound prevents the irritation often felt from the gauze rubbing the skin.

RÉSUMÉ OF REMEDIES.

Alcohol, as an efficient antizymotic and stimulant, has been largely used as a dressing. (See above, p. 77.) Most of the tinctures used as vulneraries owe their value to the alcohol they contain.

A formula much used by Prof. JOSEPH PANCOAST, of Philadelphia, is:

83. R. Castile soap,
Bicarb. potass.,
Alcohol,
Apply with pledgets of lint.

Aloes, in powder, dusted on smaller lacerated wounds, forms a stimulant dressing, by occlusion, highly praised by some French surgeons.

Alumen, in the following formula, is used by Prof. LISTER as an application to ill
 smelling and pustulating wounds:

84. R. Aluminis,
Plumbi acetatis,
Aquæ,
For a lotion.

3 ss. 3 j. 0 j.

Aluminii Chloridum, or chloralum, is a powerful antiseptic deodorizer; not poisonous, and particularly serviceable in wounds with foul discharges.

Aqua. The oldest, simplest, and, in some cases, the best of dressings is pure water, of proper temperature. (See page 75.)

Aqua Chlorinii in its concentrated form (one part to ten.) It is rather painful, and when diluted its application must be frequently renewed.

Burke, of New York, finds the following combination unsurpassed for foul sinuses, old ulcers, badly lacerated tissues, etc.:

85. R. Acidi carbolici,
Aque,
Balsami Peruviani,
5.3

To be well beaten up. Apply on picked oakum after carefully cleaning the wound. (Medical and Surgical Reporter, Feb., 1877.)

Balsamum Tolutanum. A German surgeon, Dr. E. Wiss, of Berlin, has recently expressed himself in almost unbounded praise of balsam of tolu as an application to wounds of all kinds. When the balsam was put upon wounds, it produced an immediate sensation of burning, which, however, very soon ceased, as did all pain, even in most severe wounds. Fresh wounds under this treatment showed no inflammation, and in those already inflamed it soon ceased. No suppuration took place, and where it was already present it soon disappeared. No wound treated by him by this method took on a septic character, even under the most unfavorable local and climacteric surroundings. In all cases, even in lacerated wounds, there was union by first intention, a thing which had not been his experience in any other method of treatment. (Berliner Klin. Wochenschrift, 1876 and 1879.)

Benzoin. Recent observation has shown that benzoic acid has decidedly antiseptic properties. The compound tincture of benzoin has been employed very successfully as a dressing to recent wounds. It is similar to the once celebrated "Friar's Balsam." Pure tincture of benzoin, applied on lint, is an admirable primary dressing.

Boracicum Acidum has been recently introduced and very favorably reported upon. (See pages 83, 86.)

Bryonia. Tincture of bryony is a favorite application among pugilists for the bruises, cuts and contusions they receive in their encounters. It seems little known as a local application to the profession, while its acknowledged powerfully stimulating properties, both to the skin and mucous membrane, recommend it as probably very efficacious in such wounds.

ANTISEPTIC DRESSINGS

Calcii Iodas. The iodate of calcium has been employed with very excellent results as an antiseptic by Mr. S. W. Moore, of London. (St. George's Hospital Reports, 1875.) He applies it in the following proportion to foul ulcers, cancers, purulent abscesses, etc.:

86. R. Calcii iodatis, Farinæ pulveris, s.

M.

For external use.

He also derived much benefit from its internal administration, grs. j-ij, thrice daily.

Calendula Officinalis. A tincture of this indigenous plant, diluted two parts with water, has been recently extolled by Dr. G. H. Chapman, of Illinois, (Michigan Medical News, November, 1878,) as possessing antiseptic and curative properties of a remarkable kind.

Camphora has been employed, both powdered over the wound and mixed with carbolic acid, etc. (F. 64.) It is only slightly soluble in water, and is not a

Carbo Vegetalis. Wood charcoal is a convenient and powerful antiseptic application.

It may be used as poultice (p. 38,) or mixed with other substances (p. 94,) or applied as powder.

Carbolicum Acidum is the leading antiseptic with most surgeons. (See above.) In the opinion of many, however, it is in no way superior to many others. Its odor is offensive to most patients, and when dissolved in oil it ruins the dressing and bedding. It is also poisonous, and in operations under chloroform is said to increase the dangers of the latter by rendering the air less respirable. Much of the success which has followed its use in the hands of Lister and his disciples is said by others to be attributable to the unusual cleanliness and care he enjoins.

Chloral has been used extensively as an outward application for the relief of pain, and as an antiseptic for the dressing of wounds. (See page 88.)

Chlor-Alcohol. Under this name Dr. E. Hermant, of Brussels, has introduced a mixture of equal parts of chloride of lime and tincture of camphor, which he recommends as an antiseptic, detersive and cicatrizant.

Chlorinium. As a powerful oxydizing disinfectant and local stimulant, the use of dilute aqua chlorinii has some advantages.

87. R. Aquæ chlorinii,

Use as a lotion.

f. \bar{z} ss-j.

Oj.

It must be remembered that chlorine water is a powerful irritant, capable of producing severe inflammation of the skin. The liquor sodæ chlorinatæ is a more appropriate preparation for dressings, and has been employed with great satisfaction in unhealthy wounds.

Collodion is used to bind together the edges of clean-cut wounds, to exclude the air.

It is unfortunately liable to crack. (For RICHARDSON'S styptic collodion, see the Index.)

Cressote in solution is a powerful antiseptic stimulant. Dr. Squibb believes that

both for disinfection and local application, no preparation is better than the ordinary creosote of the shops (a mixture of phenol, cresol, xylol, and perhaps one or two others of the series, the cresol predominating), which has also the advantage of being much cheaper. Simple watery solutions of creasote, sufficiently dilute, applied on old linen or muslin, he believes will serve every purpose of Mr. LISTER's putties and plasters. For burns, both to allay the pain and to promote healing, nothing compares with such a solution, containing about one-half of one per cent. of creosote. If much stronger it not only fails to relieve, but intensifies the pain.

Ferri Salicylas. This preparation is made by adding salicylate of soda to a saturated solution of sulphate of iron. It is of a bright claret color, with no smell, not irritant, and strongly antiseptic. It has been recommended by Dr. ROBERT KIRK, of Edinburgh, as an application to foul ulcers, &c. He applies lint soaked in the solution, and covers with gutta-percha tissue. (Edinburgh Medical Journal, Feb., 1877.)

Ferri Sulphas. For dressing wounds, when there is much discharge and fetor, a solution of this salt, 3j to aquæ O j-ij, will be found very effective. It is a very good disinfectant, and in these cases diminishes the odor better than carbolic abid, for it has no disagreeable smell of its own; it also dries up the excessive discharge in a prompt manner; it hastens the granulating and cicatrizing processes, which are apt to be retarded by the profuse discharge. The lotion gives rise to some smarting when first applied, but this soon passes away, and so much is the general comfort of the patient promoted, that this soon comes to be disregarded even by children; it should be applied on cloths well wetted, and renewed every two or three hours; it is well to protect the bed-clothes, for the stain is well-nigh indelible.

Glycerina is a useful and cleanly dressing. It should be diluted by one-half of oil, alcohol or water, as if applied pure it causes painful smarting.

Gutta-percha dissolved in oil of turpentine or chloroform is an excellent application for keeping the edges of wounds together.

Hamatoxylon. Logwood is an excellent disinfectant and antiseptic when applied to suppurating and offensive wounds. The powdered extract may be used, or it may be dissolved in a lotion. The following is recommended by Dr-

88. R. Extracti hæmatoxyli, Olei theobromæ, Adipis benzoati.

3j

āā 3 ss.

To be spread on old linen for a dressing.

Hamamelis. The tincture of witch-hazel has much reputation as an application to wounds. Its virtues are owing to the alcohol and the tannin of the plant.

Hydrargyri Chloridum Corrosivum. Corrosive sublimate is a powerful antizymotic, ranking, according to the experiments of Dr. P. Grace Calvert, next in efficiency to carbolic and cresylic acids. In very dilute solution, is an excellent stimulating and antiseptic application to wounds:

89. R. Hydrargyri chloridi corrosivi, Aquæ.

gr. ss-

For a lotion.

- Iodinium. As an antiseptic and healing application to wounds, a weak solution of iodine has been used, gr. j-ij to the ounce of water; to this some tannic acid may be added, forming a weak iodo-tannin, which will be found very efficient. The objection to it is that the applications must be frequently renewed, and if too strong, are likely to cause acute inflammation.
- Oleum Olive. Some surgeons use the best olive oil as an application to wounds in preference to water, as being more soothing, less heating, and less prone to promote decomposition. (Erichsen.)
- Petroleum, both crude and refined, has been used as a dressing. It is not irritating, or very slightly so, to cut surfaces, and is antiseptic and stimulating. It may be used pure, or diluted with equal parts of olive oil or glycerine.

 Unquentum petrolei is highly esteemed.
- Picricum Acidum. M. Eugene Curie recommended picric acid in a watery solution, with which the dressings are saturated, or, better still, picrated wadding, that is to say, pieces of dry wadding in which picric acid has been incorporated; the last method is generally the most convenient in application. This method, according to the author, affords the advantage of completely suppressing suppuration.
- Pix Liquida. Tar is an extremely useful and cheap dressing for wounds. Recently Dr. C. B. Leyner, of Georgia, has praised the use of tar bandages. (Trans. State Soc., Georgia, 1878.) He puts fresh pine tar in a glass vessel, and places the vessel in a pot containing water; after the water has boiled for a half hour, the vessel containing the tar is set aside until all the foreign matter is precipitated; then decant, leaving the foreign matter at the bottom; finally, add one part of sweet oil to twenty parts of the tar. After the roller bandage is adjusted, in amputations, this ointment should be thoroughly applied, once in four or five days being sufficient. In wounds, cloth strips can be used as one would use adhesive strips. Change of dressing is not necessary, and flies will not approach the wound.
- Plumbi Acetas. Solutions of the acetate and subacetate of lead (Goulard's extract,) are widely and justly popular as astringent and sedative dressings for wounds. (See pages 90, 91.) Although chemically incompatible, it is frequently combined advantageously with opium. For use on the skin, the strength should not be greater than gr. x to aquæ f. 3 j. Even in weak solution the subacetate destroys bacteria, but it is not a good deodorizer.
- Plumbi Nitras, as an application to foul wounds and excoriated surfaces, is highly esteemed. A solution of it, f. zj to zj, is known as Ledoyen's Disinfectant Solution. A convenient strength is gr. x to aquæ f. zj; or it may be prepared extemporaneously by dissolving a scruple of carbonate of lead in sufficient diluted nitric acid for solution, and adding a pint of distilled water.
- Potassii Permanganas. This salt, in solutions of gr. j-xx to the ounce, has been very highly praised as a dressing by some surgeons, but is very lightly esteemed by others. It is, at least, an effective deodorant, and except that it stains the bedding, etc., an elegant application. The solution should be made only of such strength that it can be borne without any pain or uneasiness. The discoloration it causes may be removed by sulphate of iron.
- Salicylicum Acidum has recently been prominently urged by Mr. Callender. (F. 61.) It is probably less active than carbolic acid.

Styrone. This antiseptic is obtained by heating styracin or cinnyl cuniamate (a compound contained in liquid storax and in balsam of Peru) with caustic alkalies. It crystallizes in soft, silky needles, having a sweet taste and an odor of hyacinths, melting at 33° Fahr., and volatilizing without decomposition at a higher temperature. It is moderately soluble in water, (about 1 part to 12,) freely in alcohol and ether. Dr. BEACH tested the efficiency of the antiseptic by applying it (1 part to 12 of water) to a foul, ulcerated surface, with the effect of completely deodorizing it. The same surface was dressed with sheet lint saturated with an emulsion of the styrone and olive oil, 1 part of the former to 12 of the latter, covered with thin gutta-percha, and the edges of the gutta-percha fastened to the skin by collodion. At the end of five days the dressing was removed, and the accumulated secretions were found sweet, and having the odor of the styrone, which is fragrant. This dressing was repeated at different intervals, with a like result. The granulating process progressed as well as if it were under a carbolized or thymolized dressing. (Boston Medical and Surgical Journal, March, 1880.)

Sulphites and Hyposulphites. These have been urgently advocated for the medication of dressings by Drs. Polli and Pietrasanta. (F. 65.)

Sulphocarbolates. These salts of zinc and copper have been employed in solution (gr. iij-v to aquæ 3j) by Prof. John Wood and others.

Sulphurosum Acidum has claims on the surgeon which should not be overlooked. (See page 90.) A strong aqueous solution may be made and mixed with water, (3 ss to O j,) or, what is better, with alcohol, as required.

Tunnicum Acidum. Tannin and substances containing it precipitate albumen, and thus coat wounds, thus protecting them from the irritating action of the air and the "germs" it may contain. It is conveniently employed in the form of a glycerite of tannin. Most of the herbs and plants with popular reputation as vulneraries owe their claims to the tannin they contain.

Terebene. See page 91.

Terebinthina Canadensis. Balsam of fir has long been a popular domestic application to wounds. The following compound is highly praised as an application by Dr. A. C. Mackenzie. (American Journal of the Medical Sciences, 1875.)

90. R. Terebinthinæ canadensis, Terebinthinæ veneti, Olei amygdalæ dulcis,

āā f. Z ij.

To this add.

Acidi carbolici, Glycerinæ, f. \(\frac{7}{2} \) ss.

Apply with a flat camel's-hair brush, and inject into the interstices of the wound with a glass syringe, having previously cleansed the wound with very warm water. The injured part should then be swathed in flannel, wrung out in water as hot as can be comfortably borne.

Thymol is preferred by some surgeons to carbolic acid. Prof. RANKE (Sammlung Klin. Vorträge, No. 128,) uses:

91. R. Thymol, 1 gramme.
Alcohol, 10 "
Glycerine, 20 "
Water, 1000 " M.

This makes a clear solution of agreeable odor. It is used the same as car-

Tinctura Opii Camphorata, with equal parts of simple syrup, is recommended by Dr. Q. C. Smith. (Nashville Journal of Medicine and Surgery, June, 1879.) Flies will not approach the wound, and it heals rapidly.

Zinci Chloridum. A powerful antiseptic and stimulant. In exsection or amputation of cancerous or other ill-conditioned parts, Mr. C. DE MORGAN recommends to mop the wound thoroughly with a solution $\exists j$ -ij to aquæ f. $\exists j$ (the weaker is generally strong enough.) As an antiseptic and stimulating dressing, gr. v-x to aquæ 0 j is exceedingly useful. Sir W. Burnett's disinfecting fluid consists of gr. xxv of this salt to aquæ f. $\exists j$; for use, about one ounce of this solution is added to a quart of water.

IV. THE COMPLICATIONS OF WOUNDS.

Erysipelas—Gangrene—Hemorrhage—Phagedæna—Pyemia—Shock— Tetanus—Traumatic Fever—Traumatic Neuralgia and Paralysis.

ERYSIPELAS.

MR. T. HOLMES.

The depletory treatment of erysipelas is almost abandoned. In the plethoric and strong, after the bowels have been freely opened by a mercurial purge, salines with small doses of antimony, and light fluid diet without stimulants, should be ordered. In the cellulo-cutaneous form after injuries, the purge should be employed, but an early resort to free stimulation is demanded. When there is much nervous excitement, opium should be carefully administered; but as a rule, opiates are to be avoided in erysipelas, except in the phlegmonous form after injuries. Camphor, ammonia and light tonics, generally act beneficially after the bowels have been regulated. The free exhibition of the tincture of the perchloride of iron is very beneficial in many cases; gtt. xv-xx every three hours must be given in order to produce its specific effect; and it will not agree if the tongue is foul, and the general fever is rising. Salines with small doses of autimony should be prescribed in that condition, and the iron resumed subsequently.

Locally, the exclusion of the air from the inflamed surface is very grateful. An ointment of calamine or of lead may be used for this purpose; or the part is defended by a layer of cotton wool, or some bland, warm lotion is used, as dilute solution of the subacetate of lead with opium, or a solution of the sulphate of iron.

92. R. Ferri sulphatis, 3j. M. Or,

98. R. Tinct. ferri chloridi, f. 3 ij. M. Aquæ, f. 3 viij. M.