

Acute desquamative nephritis, pyelitis, and congestion of the kidneys, are ameliorated by the application of cups to the lumbar region.

The following acute affections of the respiratory organs, when they occur in robust persons, and are accompanied by sthenic reaction, are favorably influenced in their course and duration by the application of cups or leeches—usually the former: *pleuritis, pericarditis, acute tonsillitis, acute laryngitis, and inflammatory croup.*

In *acute inflammations of the uterus and its appendages,* decisively good results are obtained by the application of leeches to the hypogastric region, to the iliac fossæ, or to the uterus.

Cupping the nape of the neck, or leeches to the mastoid process, are probably of service in acute congestion or inflammation of the intracranial structures; but the indiscriminate employment of bloodletting in any case of cerebral disease is to be condemned. The correct rule may be formulated as follows: When bloodletting is indicated in intracranial maladies, venesection or arteriotomy (temporal artery) is to be preferred to the use of cups or leeches.

Although good results are obtained by the local abstraction of blood in the diseases above mentioned, the author must express his conviction that the chief utility of cupping and leeching consists not in the blood withdrawn, but in the derivant and counter-irritant effect which they produce. *Dry cups, a mustard-plaster, a turpentine-stupe, or other counter-irritant application,* may render the painful process of cupping or leeching unnecessary.

ESCHAROTICS.

The substances belonging to this group are employed for the purpose of destroying the tissues to which they are applied. They differ in their mode of action, in the extent of the destruction which they effect, in their capacity for diffusion into the blood, and in the results which they severally accomplish.

They are prescribed for the purpose of cauterizing poisoned wounds—*syphilitic ulcers, snake-bites, the bites of rabid animals*—for the removal of *gangrenous parts, foul or exuberant granulations,* and especially for the destruction of *malignant growths.* When the diseased parts, to the destruction of which they are devoted, have been fully acted upon, the caustic action is ended; poultices are applied to favor the entire separation of the sloughs, and a healthy surface is finally left to heal by granulations.

The members of this group have, with one exception, been discussed elsewhere:

The mineral acids.

The chloride and sulphate of zinc.

Potassa fusa and potassa cum calce.

Arsenious acid.

The acid nitrate of mercury.

Bromine.

Acidum Chromicum.—*Chromic acid.* In deep-red, needle-form crystals, deliquescent, and very soluble in water, forming an orange-red solution.

ACTIONS AND USES.—Chromic acid is an oxidizing caustic. When the action ceases, sesquioxide of chromium remains. It is slow in action, and not very painful, but it penetrates deeply and is remarkably destructive. Small animals, as mice and birds, are dissolved entirely, bones and all, by chromic acid. Owing to the fact that it penetrates deeply without much pain, care must be used in its application as a caustic, lest it injure parts which are not intended to be affected. When it is applied as a caustic, the surrounding tissues must be well protected. For the destruction of *malignant growths, hæmorrhoids, warts, etc.,* the acid should be made into a paste by the addition of sufficient water. The part to which it is applied first becomes yellow, then brownish, and ultimately black, and the eschar is detached in from twenty-four to forty-eight hours.

A solution of chromic acid of the strength of one hundred grains to an ounce of distilled water is an efficient local application in *syphilitic warts and vegetations, condylomata, lupus, sycosis, tinea tonsurans, etc.* A still stronger solution (grs. xv — 3 j of hot water) has been injected into the uterine cavity with success in cases of *uterine hæmorrhage and uterine catarrh* (Wooster).

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EMOLLIENTS, DEMULCENTS, AND PROTECTIVE AGENTS.

Glycerinum.—Glycerin. A colorless, inodorous, sirupy liquid, of a sweet taste, and having the specific gravity of 1.25. It is soluble in water and in alcohol, but not in ether.

Glycerin-Ointment.—(Unofficial.) (Spermaceti, $\frac{3}{4}$ ss; white wax, 3 j; oil of almonds, $\frac{3}{4}$ ij; glycerin, $\frac{3}{4}$ j—add the glycerin to the melted ingredients, and stir briskly till cold.) (Squire.)

Glyceritum Vitelli.—Glyconin. An emulsion of glycerin and the yolk of eggs—45 parts of the yolks and 55 parts of glycerin. (U. S. P.)

Glycerin-Cream.—(Glycerin, 1; soft soap, 1; cherry-laurel water, 1.) (Squire.)

Glycerin-Cream with Camphor.—(Glycerin, 2; camphor, 1; rectified spirit, 1.) (Squire.)

Glyceritum Amyli.—Glycerite of starch. (Starch, 10 parts; glycerin, 90 parts.) (U. S. P.)

PROPERTIES.—Exposed to the air, glycerin slowly absorbs moisture, but it does not evaporate, and it does not become rancid or undergo fermentation spontaneously. It is unctuous to the touch, and is obstinately sticky. Glycerin possesses remarkable solvent powers. One part of iodine and one of iodide of potassium dissolve in two parts of glycerin. Bromine, the iodide of sulphur, the chlorides of potassium and sodium, the alkalies, some of the alkaline earths, many of the neutral salts, the vegetable acids, especially tannic, most of the alkaloids (morphine, quinine, strychnine, veratrine, and atropine), and carbonic acid, are soluble in glycerin. The fatty acids, cocoa-butter, camphor, chloroform, calomel, iodide of lead, and the resins, do not dissolve in glycerin.

The antiseptic property of glycerin is decided. Vaccine lymph may be preserved unchanged almost indefinitely when stored up in pure glycerin; and anatomical preparations, and specimens of natural history, are kept in preservative solutions consisting chiefly of this substance. Microscopical and pathological specimens are after a time softened and disintegrated by pure glycerin.

Applied to the tissues of the body, glycerin, if pure, is perfectly bland and unirritating, as a rule, but in some subjects severe smarting is produced on contact of the purest glycerin with the mucous membrane. When it contains the fatty acids, oxalic or formic acids, it possesses very positive irritant qualities. It abstracts water from the tissues.

THERAPY.—No systemic effects are produced by the stomach administration of glycerin. It is an efficient remedy in *acidity*, *pyrosis*, and *flatulence*, in the dose of a drachm, before, with, or after meals.

Glycerin has been proposed and used as a substitute for cod-liver oil, in the various cachectic states in which the latter is prescribed. It has been conclusively shown that it is inferior to cod-liver oil in every respect. As a vehicle for the administration of cod-liver oil, it is extremely serviceable (glycerin, a teaspoonful; cod-liver oil, a teaspoonful; tincture of cinnamon, ten drops).

Good results have been reported from the use of glycerin in *diabetes*, but the data are as yet insufficient to enable a correct estimate of its real value to be made. The internal administration of glycerin has been resorted to for the removal of *acne* with success. It is said to destroy intestinal trichina, and may be given freely in trichinosis.

The most important applications of glycerin, besides its numerous uses as a vehicle, are topical as an emollient. Applied to the affected mucous membrane by means of a camel's-hair pencil, pure glycerin affords great relief in *acute coryza*. *Chronic follicular pharyngitis*,

accompanied with profuse secretion, is generally improved by the same application, but the addition of tannic acid greatly enhances its curative power in this affection. A solution of morphine in glycerin, applied to the fauces with a brush, relieves the *cough of phthisis*. A better application in many respects is a mixture of glycerin, crystallized sugar, and whisky. This mixture, allowed to trickle slowly down the fauces, allays irritability and keeps the mucous membrane moist (glycerin, two parts; whisky, one part; crystallized sugar, a sufficiency).

An enema of glycerin and infusion of flaxseed (one to four) allays the tenesmus in cases of *acute dysentery*.

For *chapped hands or face*, glycerin is an excellent application. In *seborrhœa*, glycerin-cream gives good results. For *fissures of the nipple*, Stillé strongly recommends a "liniment made by adding one part of tincture of benzoin to six or eight of glycerin, and filtering the mixture."

In *pityriasis* and in the *papular eruptions*, glycerin is serviceable, but, in general, it may be stated that its use in skin-diseases is disappointing, and that it is inferior as a local application to the usual oils and fats employed in this way.

Glycerin has been used as a dressing for *wounds* and *ulcerated surfaces*, with more or less advantage. It is largely prescribed by gynecologists as a topical application to erosions and ulcerations of the cervix uteri, and for the relief of vaginal leucorrhœa.

The glycerite of starch (plasma) is an excellent vehicle for the application of astringents to the eye, and is much employed by ophthalmologists for this purpose. Glycerin is used by otologists to soften cerumen, to entangle insects which have entered the ear, to diminish the secretion of pus, and to relieve the morbid state of the auditory canal in cases of otorrhœa.

Collodium.—Collodion. Is a slightly opalescent liquid, of a sirupy consistence. By long standing it deposits a layer of fibrous matter, and becomes more transparent. This layer should be reincorporated, by agitation, before the collodion is used. When applied, it should form a colorless, transparent, flexible, and strongly contractile film.

Collodium Flexile.—Flexible collodion. (Collodion, ninety-two parts; Canada turpentine, five parts; castor-oil, three parts.)

Liquor Gutta-Perchæ.—Solution of gutta-percha. (Gutta-percha, nine parts; carbonate of lead, ten parts; commercial chloroform, ninety-one parts.)

ACTIONS AND USES.—These solutions, when applied to the integument, evaporate, leaving a transparent film or coating impervious to air and moisture. In drying, collodion contracts energetically, and

may indeed produce such a degree of constriction as to cause pain, and to render the part bloodless. Flexible collodion contains turpentine and castor-oil, which confer the property of flexibility, while they do not impair the impermeability of the film. The solution of gutta-percha has properties similar to flexible collodion.

These solutions are employed to protect exposed parts from the contact of air, to secure primary union of incised wounds, to cause resolution of inflamed parts by mechanical pressure, etc.

Some cases of *chronic tubercular and squamous skin-diseases* are much improved by coating them with the gutta-percha solution. Previous to the application of the solution all scales should be removed. Excellent results have been obtained in *herpes zoster* by a thick coating of the flexible collodion or the gutta-percha solution: the pain is relieved, the vesicles aborted, and the duration of the disease shortened. As this is a self-limited disease, there must remain a suspicion of *post hoc* rather than *propter hoc*. *Erysipelas*, especially of the traumatic variety, is, at least, much relieved as regards the local symptoms by a thick coating of flexible collodion, but there is no evidence that it actually shortens the duration of the disease. *Burns to the first degree* are greatly benefited by the same application; it prevents contact of the air, and allays the irritation and pain. When, however, there is much exudation, or sloughing takes place, an impermeable coating adds to the distress.

Collodion has been used without much success in *small-pox*, to hinder the development of the pustules. *Small boils, carbuncles, naevi*, and even superficially placed *aneurisms*, may be so compressed as to arrest the local inflammation or to cause coagulation of the blood. *Orchitis* may be treated by a coating of collodion, instead of strapping. When the mechanical effects of the collodion are to be obtained, successive layers must be applied.

Fissures of the nipples are best treated by flexible collodion or gutta-percha solution. The fissures are carefully wiped dry, well approximated, and then thoroughly coated. Nipples that are retracted may be made more prominent by surrounding them, after being well drawn out, with a thick layer of collodion so placed that on contracting it will pucker the skin of the areola.

Collodion has been used with success as a means of compression in *umbilical hernia, spina-bifida, varicocele*, etc.

Chondrus.—*Chondrus crispus*. Irish moss.

Cetraria.—*Cetraria Islandica*. Iceland moss.

Decoction Cetrariæ.—Decoction of Iceland moss.

COMPOSITION.—The principal constituent of chondrus is a mucilage, which, when dry, is horny, but swells up in water, forming a jelly.

Cetraria contains about seventy per cent of a starch (lichen-starch), a decoction of which gelatinizes on cooling. In addition to this starch cetraria contains a bitter principle (cetrarin), and a peculiar acid (lichenostearic acid).

These lichens are used only for the production of diets for the sick. They were formerly supposed to possess some peculiar virtues which rendered them serviceable to pulmonary invalids. As articles of food, they have a very low position as regards nutritive value. The decoction of cetraria may be used as a stomachic tonic, containing as it does a bitter principle; but it is only to be prescribed when the more efficient remedies are not well borne.

Chondrus may be made into jelly or *blanc mange*, in the same way as gelatin is now prepared for this purpose. Neligan gives the following recipe for the preparation of a jelly from chondrus: Chondrus, washed and macerated, thirty grains; spring-water, a pint; boil down to one half and strain with expression, and add to the strained liquor four ounces of white sugar, one ounce of gum-acacia, and thirty grains of powdered orris-root; heat to dryness with a gentle temperature, stirring constantly so as to obtain a pulverulent mass, to which three ounces of arrow-root are to be added by trituration. A jelly is prepared with this powder by rubbing up a teaspoonful of it with a little cold water, and then pouring a cupful of boiling water on it.

Acacia.—Gum-arabic. A gummy exudation from *Acacia vera*, and other species of *Acacia*.

Mucilago Acaciæ.—Mucilage of gum-arabic.

Syrupus Acaciæ.—Sirup of gum-arabic. (Mucilage of acacia, 25 parts; sirup, 75 parts.)

Tragacantha.—Tragacanth. The gummy exudation from *Astragalus gummifer*, and from other species of *Astragalus*.

Mucilago Tragacanthæ.—Mucilage of tragacanth.

Sassafras Medulla.—The pith of the stems of *Sassafras officinale*.

Mucilago Sassafras Medullæ.—Mucilage of sassafras-pith.

ACTIONS AND USES.—These preparations are used as demulcent drinks, in cases of acute inflammation of the stomach and intestines. They are supposed to make a protective coating on the inflamed part, and thus save it from further injury. They are especially indicated when irritating and corrosive substances have been swallowed. They are also frequently prescribed as diet-drinks in fevers and in acute inflammations, in accordance with the supposition that they are not only soothing to the alimentary canal, but are, in a limited sense, foods. As nutrients these gums and mucilaginous substances rank very low, and can by no means take the place of such a food as milk. Furthermore,

they are exceedingly apt to undergo fermentation, and to produce flatulent colic and diarrhœa.

Mucilaginous drinks are very frequently taken in catarrhal affections of the bronchial tubes and of the kidneys, with the view to modify the morbid process going on in these parts. It need hardly be stated that such a theory of the utility of demulcents is erroneous. Cough is modified by an influence which is probably reflex, when mucilages are applied to the fauces; but in no other way can the mucous membrane of the air-passages be affected by such remedies taken into the stomach. As gums undergo digestion in the alimentary canal, it is obvious that they can not act as demulcents on any part of the urinary tract.

The chief use of these remedies is in extemporaneous prescriptions, to hold insoluble medicines in suspension, and to cover the taste of disagreeable ingredients.

Linum.—Flaxseed. The seed of *Linum usitatissimum*.

Lini Farina.—Flaxseed-meal.

Infusum Lini Compositum.—Compound infusion of flaxseed. (Flaxseed, ℥ ss; licorice-root, ℥ ij; boiling water, Oj.) (Not official.)

Ulmus.—Slippery-elm bark. The inner bark of *Ulmus fulva*.
Mucilago Ulmi.—Mucilage of slippery-elm bark.

Glycyrrhiza.—Licorice-root. The root of *Glycyrrhiza glabra*.

Extractum Glycyrrhizæ.—Extract of glycyrrhiza (licorice).

Extractum Glycyrrhizæ Purum.—Pure extract of glycyrrhiza.

Extractum Glycyrrhizæ Fluidum.—Fluid extract of glycyrrhiza.

Mistura Glycyrrhizæ Composita.—Compound licorice-mixture (brown mixture). A simple expectorant containing paregoric, wine of antimony, and spirits of nitrous ether. Dose, ʒ j—ʒ ss. (Not official.)

ACTIONS AND USES.—The remedies of this group contain mucilaginous constituents on which their properties depend. They are frequently prescribed as protectives in gastro-intestinal disorders, and as expectorants in bronchial affections.

Poultices.—Flaxseed-meal, powdered slippery-elm bark, and Indian or corn meal, are most frequently used for the preparation of poultices. Wheat-bread and milk are also occasionally employed for the same purpose.

In the preparation of a poultice, the meal is slowly incorporated with hot water, until a mass of the proper consistency is made. The mixture itself should not be applied immediately to the part, for it dries and adheres with considerable tenacity. A piece of washed muslin of quadrangular shape, and of sufficient size, is selected; the hot

mass is spread on one end of the muslin, leaving a margin of one inch on three sides; the long end of the muslin is then folded over the mass, and the free margins are stitched or pinned together. If the poultice is not frequently renewed, to prevent drying, some glycerin should be added to the surface which is to remain in contact with the tissues. Laudanum, or other narcotics, may be stirred in with the meal if the relief of pain be desirable.

A *yeast-poultice* consists of brewers' yeast, to which sufficient flaxseed is added to give the proper consistence.

A *charcoal-poultice* differs from an ordinary poultice in having powdered charcoal incorporated with the mass. In order that a charcoal-poultice shall have the proper consistence, the mass should be thin enough to take up a sufficient quantity of charcoal.

ACTIONS AND USES.—A poultice is a means of applying continuous heat with moisture, and of softening the tissues. An afflux of blood takes place to the part, the vessels dilate, the tissues, softened by the combined influence of heat and moisture, permit the easy diffusion of the fluids. If the process of inflammation has begun, or is in progress, the stasis is relieved, the tension of the inflamed part is lessened, and resolution is thus favored; or, if the stage of exudation is reached, the migration and multiplication of the white corpuscles are promoted, and the extrusion of purulent elements facilitated. The accumulation of blood in the neighborhood of the poultice seems to diminish the pressure elsewhere, and thus poultices of large size lower the arterial tension and lessen stasis in internal parts. Poultices relieve the pain of inflamed parts by relaxing the tissues, and thus removing pressure from the sensory nerve-filaments. The impression thus made on the peripheral nerve-endings is transmitted to the center and reflected over internal organs. It is within the range of everybody's personal experience that warm, moist applications relieve pain in internal and distant parts, which have no anatomical connection with the integument to which the applications are made.

Poultices have, therefore, a local and a systemic effect. Their therapeutical uses are based on this conception of their physiological actions. They are prescribed to relieve the tension and to promote resolution or suppuration in *boils*, *carbuncles*, and other *superficial inflammations*, to hasten the healing of *irritable ulcers*, to favor the separation of *gangrenous sloughs*, etc. Foul-smelling wounds requiring the use of poultices are best treated with the yeast or charcoal poultice.

Unquestionable benefit is derived from the application of hot poultices externally in *acute faucial inflammations*, in *pneumonia*, *pleuritis*, *pericarditis*, *hepatitis*, *peritonitis*, etc.

The application of poultices sometimes degenerates into abuse. If too long continued, the skin becomes white, wrinkled, and sodden;

small abscesses or boils form, and the vessels of the parts very slowly regain their tone. If kept too long in contact with wounds or ulcerated surfaces, the granulations become pale and flabby, and the healing process is retarded. Applied indiscreetly to inflamed joints, they may promote suppuration, and thus permanently injure these structures. If kept long in contact with a large extent of surface, they will lower the general tone and vigor of the system, depress the systemic circulation, exhaust the irritability of the vaso-motor nerves, and thus seriously embarrass the reparative process, if not wholly prevent repair.

INDEX OF REMEDIES.

A		PAGE	PAGE	
Acacia.....	699	Alumen.....	292, 620	
ACETA:		Alumen Exsiccatum.....	292	
Acetum Opil.....	516	Ammonia.....	210	
— Lobelia.....	583	Ammoniacum and its preparations.....	460	
— Sanguinaria.....	312	Ammonia Valeriana.....	461	
— Scilla.....	675	Ammonium and its preparations.....	210	
ACIDA:		Ammonii Benzoas.....	210	
Acidum Arseniosum.....	144	Amygdalæ Oleum Expressum.....	103	
— Aceticum.....	218	Amyl Nitrite.....	591	
— Benzoicum.....	353	Anæsthesia.....	495	
— Boricum.....	351	— Local.....	506	
— Carbolicum.....	322	Anæsthetics.....	495	
— Chromicum.....	685	Animal Aliment.....	25	
— Citricum.....	218	Animal Diet.....	43	
— Gallicum.....	296	Anemone.....	607	
— Hydrocyanicum Dilutum.....	585	Anthelmintics.....	654	
— Lacticum.....	92	Antimony and its preparations.....	253	
— Hydrochloricum.....	94	Antiseptics.....	317	
— Nitricum.....	95	Antiseptic Oils.....	356	
— Nitromuriaticum.....	95	Apiol.....	677	
— Phosphoricum.....	95	Apomorphine.....	621	
— Salicylicum.....	335	Aqua.....	60	
— Sulphuricum.....	94	AQUÆ:		
— Sulphurosum.....	220	Aqua Acidi Carbolici.....	322	
— Tannicum.....	296	— Ammonia.....	211	
— Tartaricum.....	218	— Chlori.....	320	
Aconitine.....	597	— Creosoti.....	323	
Aconitum Napellus and its preparations.....	597	Aquapuncture.....	690	
Acupuncture.....	689	Argentum and its preparations.....	260	
Adeps.....	103	Arnica.....	564	
— Benzoinatus.....	103	Arnica and its preparations.....	564	
Æther.....	487	Aromatic Bitters.....	161	
— Aceticus.....	488	Arsenic and its preparations.....	144	
Ailanthus.....	611	Arterial Transfusion.....	19	
Air.....	76	Artificial Digestion.....	55	
— Compressed.....	79	Asafetida and its preparations.....	458	
Alcohol.....	470	Aspidium.....	658	
Ale.....	485	Aspidospermine.....	616	
Aliment.....	23, 49	Atomization of Liquids.....	6	
— Animal.....	25	Atropine.....	435	
— Vegetable.....	34	Aurum and its preparations.....	258	
— in Inflammation.....	49			
— in Digestive Disorders.....	51	B		
Alimentation, Rectal.....	56	Bantingism.....	40	
Alkalies.....	187	Baptisia.....	648	
Alkaline Mineral Springs.....	203	Baptisin.....	648	
Alnus Cerulata.....	298	Barium.....	215	
Aloes and its preparations.....	640	Barii Chloridum.....	215	
Aloin.....	641	Baths.....	62	
Alum.....	292	Baunscheidtismus.....	689	
		Beer.....	485	