highly peppered and well salted, or the oil may be beaten up with an equal quantity of the froth of porter, and tossed off before the constituents have separated. A mixture consisting of castor oil, half an ounce; fresh mucilage of acacia, three drachms; distilled water, five drachms, has very little taste. It may be flavoured with oil of peppermint or oil of lemons.

GLYCERINE.

Glycerine is a useful application for chapped lips and hands, and for rough, furfuraceous, and inelastic skin, left after eczema or other skin complaints, restoring suppleness to the tissues, and allaying burning, tingling, and smarting. Glycerine of starch is still better. Glycerine undiluted may cause inflammation and smarting, hence it should be mixed with an equal quantity of rose-water or eau de Cologne. Glycerine of starch renders the skin soft and supple. In xeroderma a bath should be taken daily, and the ointment rubbed in after wiping the body thoroughly dry. Glycerine is a good application for dryness of the meatus of the ear; and when the tympanum is ruptured it covers the opening in the tympanum with a thin film, supplying for a time the place of the lost membrane.

Dr. M. Rosenthal recommends glycerine as a solvent for alkaloids employed hypodermically. One drachm of glycerine will dissolve ten grains of muriate of morphia, twenty grains of sulphate of quinia, and only one grain of curare.

The lips, tongue, and gums, when dry and coated with dried mucus in acute diseases, should be washed and kept moist several times a day by glycerine, which greatly improves the comfort and appearance of the patient. If the sweet taste of glycerine is unpleasant, it will answer as well if diluted with an equal quantity of water or lemon juice.

In the last stage of chronic diseases, as phthisis, the mucous membrane of the mouth becomes dry, red, shiny, and glazed, a condition which causes much distress, and is usually accompanied by great thirst. This harassing state is relieved by rinsing the mouth with a wash of glycerine and water. Undiluted, glycerine is apt to make the mouth clammy and sticky. Glycerine will sometimes cure thrush.

Glycerine of carbolic acid is a useful application to fœtid sores and open cancers of the surface of the body or of the uterus. It removes the offensive odour of the discharge, and improves the condition of the sore.

Glycerine of borax is a good application in pityriasis of the scalp, aphthæ, and thrush.

Glycerine has been used in place of sugar, as in diabetes. It has also been recommended as a substitute for cod-liver oil, but experience has failed to support the recommendation.

One of the best preventives of bed-sores is glycerine or glycerine cream. The part exposed to pressure should be washed morning and evening with tepid water, and carefully dabbed quite dry with a soft towel, and then gently rubbed over with a little glycerine or glycerine cream. If the skin is sore or tender, the glycerine cream is best. A draw-sheet made of linen, and sufficiently large to be firmly tucked in at both sides of the bed, (as any folds or creases are very apt, by irritation, to produce tenderness, and eventually sores), will prevent soiling of the bed-clothes. This preventive treatment should be commenced before the on-coming of redness or tenderness.

ON DIFFERENT KINDS OF TANNIN. ON GALLIC ACID.

These substances produce little or no change in the unbroken skin, but are astringent to sores and mucous membranes, checking secretion by contracting the vessels and condensing

the tissues. They precipitate albumen, and thus coat over wounds; in some measure protecting them from the injurious action of the air, whence tannin-containing substances are applied to excoriations, profusely discharging sores, and luxuriant granulations. Tannin is conveniently employed in the form of glycerine of tannin. This combination is useful in ozæna. After measles, scarlet fever, or some other diseases, the inside of the nose becomes not uncommonly excoriated and reddened, and discharges freely a thin sanious or thicker purulent fluid, which, on drying, scabs up the nose, and often excites eczema of the upper lip. If the inside of the nose is well brushed out with glycerine of tannin, the discharge ceases, even after a single application; but, if the scabs are thick, they must be thoroughly removed to enable the application to act on the sore secreting surface. Glycerine of tannin cures syphilitic ozœna of children; it arrests the discharge, reducing the swelling of the mucous membrane producing the characteristic sniffling, and, by enabling the child to breathe through the nose, permits sound refreshing sleep and proper suckling.

Occasionally among adults we meet with an impetiginous eruption of the inside of the nose, most severe near the orifice where the hairs grow, but extending higher in a milder form. Scabs block up the nose, especially at night. The alæ, and sometimes the whole of the nose, is thickened, dusky red, and very painful. The swelling may extend to the adjacent structures, and may merge into repeated attacks of erysipelas of the face. Glycerine of tannin, applied once or twice daily to the whole cavity of the nose, speedily reduces and even cures this disease. The upper part of the nose is the most easily cured, but the disease situated in the hairy part is much more obstinate, and is very prone to recur again and again. Epilation is useful in obstinate cases. Glycerine of starch or zinc ointment, applied several times a day, keeps the tissues moist and supple, and is a serviceable supplementary application.

Glycerine of tannin will generally check the nasal discharge

of thick, lumpy, greenish-black, and stinking mucus, and even if it fails it ordinarily removes the offensive smell. In other forms of ozœna, especially when the disease affects the upper and back part of the nose, with its numerous recesses, it is preferable to flush the nose with a deodorizing and astringent wash, in the way described (*vide* page 177) which besides benefiting the mucous membrane, carries away the inspissated putrefying discharge on which the stench of ozœna generally depends.

Glycerine of tannin is very valuable in otorrhœa, a common complaint of weak unhealthy children after severe illnesses. The external meatus must be filled with the application, and retained there by cotton wool. One application usually suffices, but a slight discharge may remain, or return in a few weeks, when a repetition of the application is necessary. In the acute stages of inflammation of the meatus this treatment is inapplicable. Glycerine of tannin often cures the chronic vaginitis of children; but this complaint is generally more obstinate than either ozœna or otorrhœa.

Glycerine of tannin is useful in some stages of eczema. After the removal of the scales, if the inflamed, red, swollen, and weeping raw surface is painted with this preparation, it notably abates the discharge, redness, heat, and swelling. A poultice must be applied at night; and if the glycerine of tannin excite much pain, the poultices must be continued night and day. In a less active stage, when the tissues are not so red, swollen, and weeping, eczema yields still more readily to glycerine of tannin, applied twice or thrice daily. A poultice is useful at night. This application quickly allays the troublesome itching, tingling, and burning, so common in eczema; hence it prevents tearing with the nails and rubbing, which hinder healing, nay, even cause the eczema to spread. Tannin-glycerine may not entirely remove the disease, but only reduce it to the desquamative stage, with a tendency to crack and ooze, when tar, carbolic acid, or other ointments become necessary to complete the cure. The same treatment is useful in impetigo. A poultice must be applied

each night to remove the scabs, and the tannin application should be employed during the day. While treating these skin diseases, the state of the digestive organs must not be overlooked.

Eczema of the ears, common in middle-aged and old people, readily yields to glycerine of tannin, unless the inflammation runs high with great swelling, heat, and weeping. This remedy is very efficacious too, in eczema, behind the ears of children. After one or two applications, the eczema speedily dries up and heals, although it may have lasted for weeks or months. The gums, if red and swollen must be lanced, and other irritations removed.

Intertrigo is sometimes benefited by glycerine of tannin.

Glycerine of tannin is very useful in many throat diseases. Immediately after an acute inflammation, as the mucous membrane grows less red, less swollen, becomes moister, and covered with mucus or pus, glycerine of tannin painted on the pharynx, hastens recovery, prevents chronic inflammation with relaxation of the mucous membrane, which often follows the acute disease, heals superficial ulceration, occurring as the acute inflammation subsides, and cures hoarseness.

Glycerine of tannin is useful in aphthous sore throat, on the appearance of ulceration. In chronic inflammation of the throat, when the mucous membrane is relaxed, swollen, granular-looking, and covered with mucus or pus, a few applications of glycerine of tannin brace up the tissues, and lessen or remove the hoarseness. This kind of throat, often with slight enlargement of the tonsils, is common in children, and sometimes produces deafness, and still more often a frequent hacking cough, which may keep the child awake the greater part of the night. In children, this is so commonly the cause of cough, that it is well always to examine their throats. Glycerine of tannin applied daily speedily allays the cough, and cures the deafness. Throat deafness is the most common form of that infirmity in childhood; and when not due to enlarged tonsils, generally depends upon the kind of morbid throat just described.

Many coughs depend on the state of the throat, a fact accepted in theory, but little regarded in practice. In these coughs glycerine of tannin is very useful, allaying the cough and frequent deglutition excited by an elongated uvula, and the frequent hacking cough in phthisis, due to inflammation or ulceration of the throat. A good night's rest may be often obtained by painting the throat shortly before bed-time, and a small quantity of morphia added to the glycerine of tannin increases its soothing effect. The frequency and violence of the paroxysms of whooping cough are much reduced by mopping the pharynx, epiglottis, and adjacent structures with this application. It is of little use if the case is complicated with catarrhal or other inflammation of the lungs, or tuberculosis, or any irritation, as from teething; but in simple uncomplicated whooping cough it is very useful. The paroxysmal cough often left by whooping cough, which readily returns on catching cold, yields to this treatment. In whooping cough and the foregoing throat diseases, glycerine of tannin is better than a solution of nitrate of silver, as it excites less pain, and is less disagreeable to the taste, (see Nitrate of Silver). Glycerine of tannin is greatly superior to the tannin lozenges.

Glycerine of tannin is useful in ulcerative stomatitis, especially in that form affecting only the edges of the gums; but dried alum is a better application.

Trousseau successfully employed, in diphtheria and croup, a solution containing five per cent. of tannin, in the form of spray, several times a day, for fifteen or twenty minutes.

Tannin unites with albuminous matter in the stomach, forming an insoluble substance, and any tannin left uncombined constringes the mucous membrane, and lessens its secretions. As tannin likewise diminishes the solvent power of the gastric juice, it is inadvisable to give tannin-containing substances close to meal times.

It is asserted that tannin, by virtue of its astringency, cures slight catarrh of the stomach; hence tannin preparations are occasionally employed in irritative dyspepsia. Some give

tannin for pyrosis, but they do not discriminate whether it checks neutral, alkaline, or acid pyrosis, or all these forms of the complaint. In poisoning by alkaloids, as strychnine and morphia, tannin is given to render them less soluble. Tannin and gallic acid control bleeding from the stomach. The members of this group are astringent to the intestines, lessening their secretions, and probably their contractions; hence they constipate, and tannin-containing substances, as catechu, kino, red gum, rhatany, and hœmatoxylum, are very useful in most forms of acute and chronic diarrhœa. The members of this group are employed as anal injections to check diarrhœa, to destroy thread-worms, and to restrain prolapsus ani.

Few applications are so useful in irritable piles as gallic acid and opium ointment. It quickly relieves pain, and after a time even reduces the size of the hæmorrhoidal tumours. Calomel ointment too is highly spoken of by my friend Mr. J. Bartlett.

Owing to their low diffusion-power, the members of this group must pass but slowly from the intestines into the blood. After, if not before, their absorption into the circulation, they must become neutralized with albumen, and for this reason some authorities maintain that tannin and its allies do not act as astringents to organs distant from the intestines. Nevertheless, tannin and gallic acid are frequently employed with considerable benefit to check bleeding from the lungs, uterus, and kidneys, and with less apparent benefit to check over-abundant secretion of milk, and profuse sweating.

Tannin is sometimes administered to diminish the loss of albumen in chronic Bright's disease. George Lewald has experimentally tested its power in this respect. In a few, but carefully-conducted experiments, he found that the albumen was always lessened to an inconsiderable amount, the daily average diminution amounting to about 0·66 grammes. Tannin produced a much more decided increase in the quantity of the urine.

An injection of glycerine of tannin is very beneficial in the

after-stages of gonorrhœa, and in gleet. Undiluted glycerine of tannin commonly excites much pain; it is desirable therefore to add to it an equal quantity of olive oil or mucilage. Two drachms of this mixture is enough for each injection, or, if too much is used, it excites frequent and painful micturition. Gleet is very often speedily cured by this injection; but, like other injections, the discharge in many instances ceases only during its employment. Injections should be persevered with eight or ten days after the discharge has ceased.*

Tannin, either alone, or blended with other astringents, is useful as an injection in leucorrhœa. In obstinate cases, and when the os uteri is ulcerated, a suppository of tannin and cocoa-nut fat applied to the mouth of the uterus is very beneficial. Glycerine of tannin checks the great discharge, and destroys the stench, of cancer of the uterus. A mixture of glycerine of tannin and glycerine of carbolic acid is still more useful.

The effect of the members of this group on the natural constituents of the urine is unknown. Gallic acid "passes unchanged into the urine. It has been detected in one hour after being taken." Tannic acid "passes off by the urine in the forms of gallic and pyro-gallic acids, perhaps of a saccharine body." (Parkes).

HAMAMELIS VIRGINICA.

Various preparations of the witch hazel, have long been in vogue in America, indeed, this plant was used by the natives, and by them introduced to the English settlers.

It is chiefly employed in hæmorrhage, being most serviceable in passive hæmorrhage. Dr. Preston has employed it

* Urethral injections should not be employed at bed-time, as they are apt to excite seminal emissions.

largely and successfully in epistaxis, and his experience is confirmed by that of many other writers. It has been recommended highly in the hæmorrhagic diathesis, but in the case of a lad with this diathesis I employed it in vain on several occasions in bleeding from the nose. It has been found very serviceable in hæmoptysis and hæmatemesis. Dr. Hall recommends it in dysentery when the discharges contain much blood. I have known it arrest hæmaturia in four cases which had resisted many other remedies. It is very highly recommended in piles both to check bleeding and to cure the diseased veins. I have found it singularly successful and prompt in arresting this form of bleeding, even when excessive and amounting to half-a-pint a day, repeated almost daily for months or years. In piles it should be employed either as a lotion or injection as well as taken by the mouth. It has been recommended in varicocele, and I have seen one case in which during its employment the varicosities entirely, and apparently permanently disappeared.

Dr. Preston extols it in phlegmasia dolens. I have found it useful in checking that slight oozing of the blood sometimes following a confinement, and which may go on for weeks.

The dose is one or two minims every two or three hours. Large doses are liable to produce severe throbbing pain in the head.

TAR, CREASOTE, CARBOLIC ACID, PETROLEUM, OIL OF TAR, &c.

Carbolic Acid destroys the lowest forms of animal and vegetable life, and prevents fermentation and putrefaction. Whilst it prevents the fermentation of sugar, it is said not to prevent the conversion of starch into sugar nor the decomposition of amygdalin. It is largely employed to prevent the stenches of drains, water-closets, dissecting rooms, aud hospital wards. Unlike chlorine and permanganate of potash, carbolic acid is incapable of destroying offensive gases; it only prevents their formation. Its destructive influence over the low forms of animal and vegetable life has led to its being considered a disinfectant, but no satisfactory proof exists of its capability to destroy the contagious elements of disease. Nevertheless it is extensively, and apparently effectually employed as a disinfectant. It is a good plan to hang a sheet, kept moist with a solution of carbolic acid, and large enough to cover the doorway of the sick chamber and to extend a little beyond.

Creasote and carbolic acid act energetically on the skin, producing opaque white patches, and exciting active inflammation, followed in a few days by desquamation. They coagulate albumen, and are stimulant and astringent; hence they may be employed to check bleeding.

According to Dr. J. H. Bill, carbolic acid locally applied is an anæsthetic, and Dr. Andrew H. Smith (*New York Medical Journal*) confirms this statement. Dr. Smith painted on his fore-arm a spot an inch in diameter, with an 85 per cent. solution of carbolic acid. For a minute it caused slight burning, then the skin became quite numb, whitened, and shrivelled; at this point he made an incision half an inch long without even feeling the knife. The wound healed as usual. Three hours afterwards, he thrust, without pain, a needle into the skin. Next he applied a blister to the carbolised skin without causing pain or vesication. He found that this application greatly lessened the pain from incising two whitlows.

Professor Erasmus Wilson employs carbolic acid as an anæsthetic, to diminish the pain arising from caustics, as potassæ fusa. Brushed over the delicate part or raw surface several times, the acid coagulates the albumen, "benumbs the surface, and permits the caustic action with a great reduction of pain." Mr. Wilson employs this method in lupus, epithelioma, and in disease of the glans and prepuce.

Carbolic acid applied as a stimulant and antiseptic to gangrenous and ill-smelling sores prevents the stench, and improves the condition of the wound.