

Five hundred practical trade receipts (general, remedial, veterinary) for Chemists and Druggists, including approximate formulae of several popular proprietary articles.

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500
PRACTICAL TRADE RECEIPTS
FOR
CHEMISTS & DRUGGISTS

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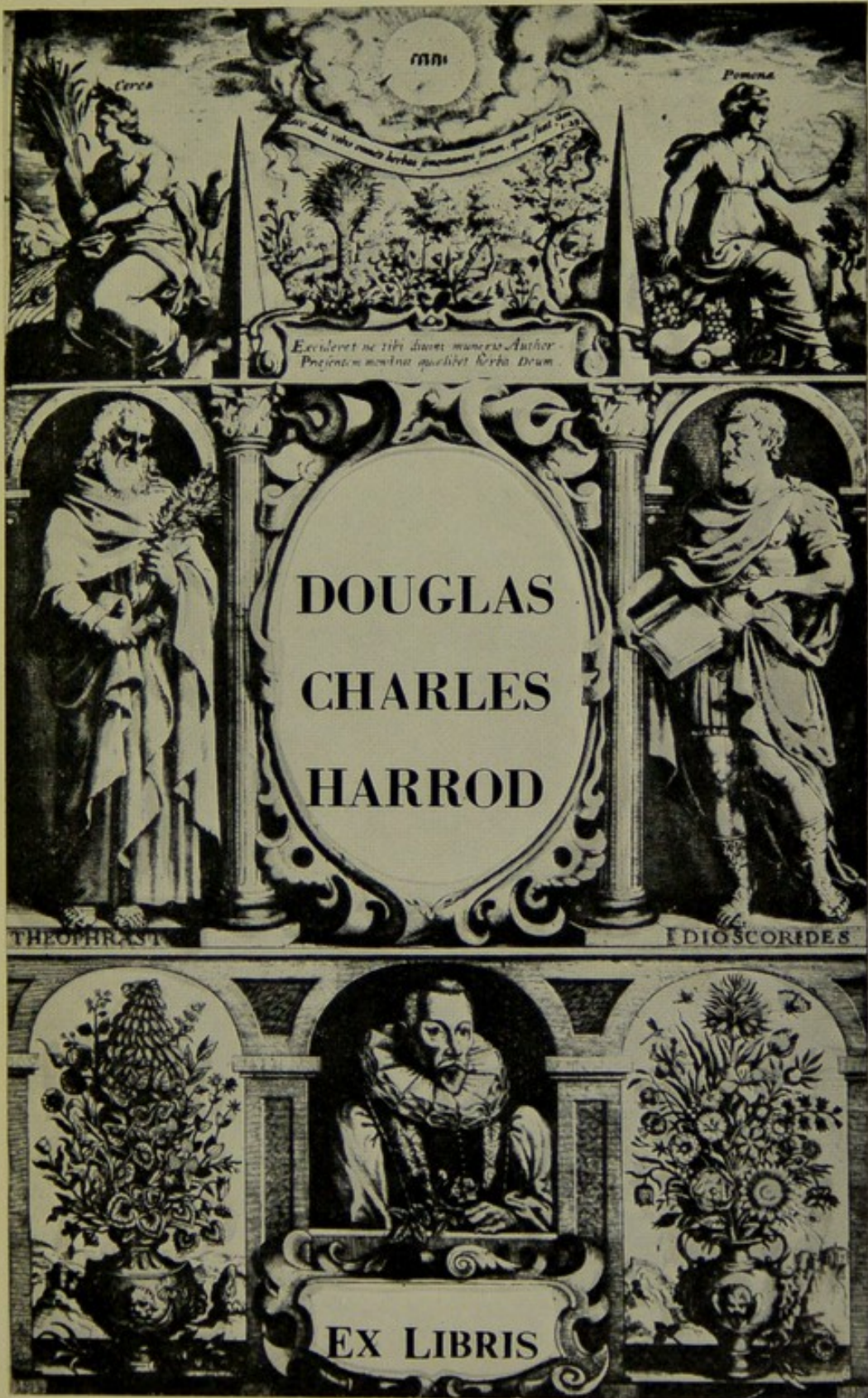
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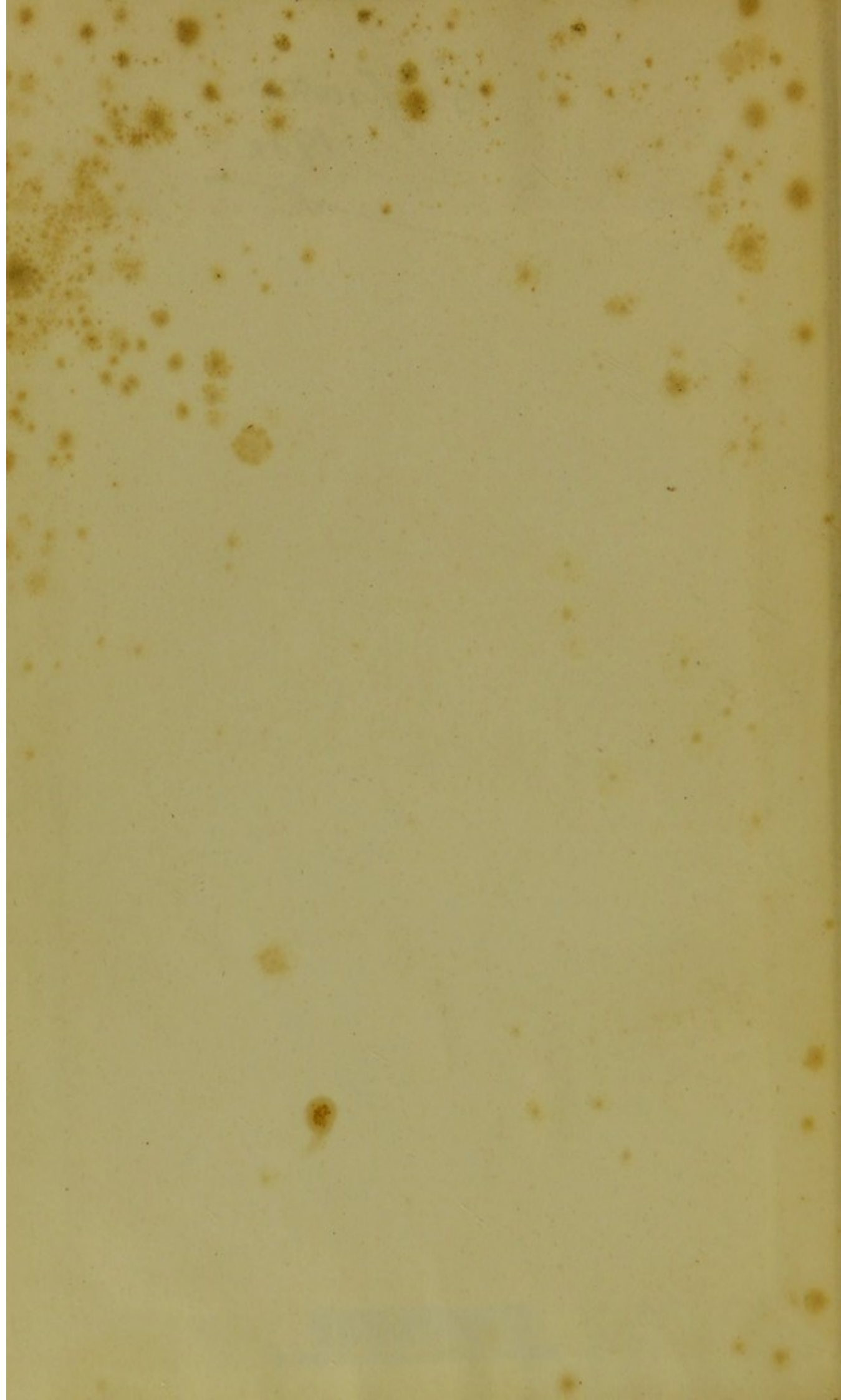
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KING'S COLLEGE LONDON

Ed. Pratt
1921





¶ Many of these Recipes are original, and the rest have been selected from the most trustworthy English and Foreign sources.

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FIVE HUNDRED

PRACTICAL TRADE RECEIPTS

(GENERAL, REMEDIAL, VETERINARY)

FOR CHEMISTS AND DRUGGISTS,

INCLUDING

APPROXIMATE FORMULÆ OF SEVERAL
POPULAR

PROPRIETARY ARTICLES.

PRICE HALF-A-CROWN.

LONDON :
SIMPKIN, MARSHALL, & Co.

1883.

EARLY SCIENCE COLL,
RS 131.3 FIV

system no. 417213





GENERAL RECIPES.

AROMATIC VINEGAR.

1.—Oil of cloves, 2 drs. ; oil of lavender, 2 drs. ; oil of cassia, $\frac{1}{2}$ dr. ; essence of bergamot, 2 drs. ; essence of lemon, 1 dr. ; camphor, $\frac{1}{2}$ oz. ; grain musk, 5 grains ; glacial acetic acid (32 deg.), 8 ozs. Mix.

2.—Oil of rosemary, 1 part ; oil of juniper, 1 part ; oil of lemon, 1 part ; oil of thyme, 2 parts ; oil of cloves, 5 parts ; tincture of cinnamon, 100 parts ; aromatic tincture, 50 parts ; dilute acetic acid, 1000 parts ; distilled water, 200 parts. Mix and filter.

BAKING POWDER.

1.—Tartaric acid, powdered and dried, 15 parts ; bicarbonate of soda, powdered and dried 16 parts ; starch or flour, powdered and dried, 16 parts ; carbonate of ammonia, powdered and dried, 2 or 3 parts. Mix all thoroughly well together and exclude from moist air by placing in tin canisters, tightly covered. Cream of tartar may be substituted for the tartaric acid.

2.—Tartaric acid, powdered and dried, 1 lb. ; bicarbonate of soda, powdered and dried, 1 lb. 5 ozs. ; ground rice, 3 lb. 2 ozs. Mix.

3.—Pure cream of tartar, 23 parts ; bicarbonate of soda, 10 parts ; tartaric acid, 1 part ; wheat flour, 8 parts. Mix gradually.

4.—Pure cream of tartar, 2 lb. ; bicarbonate of soda, 1 lb. ; wheaten starch, 1 oz. One teaspoonful is required for one pound of flour.

BENZINE DEODORISER.

To each gallon of benzine add 3 ozs. of powdered quicklime and a little freshly-burnt charcoal and shake well. This will prevent any disagreeable smell being imparted to articles washed in the benzine.

BLACKING AND DRESSING FOR BOOTS.

1.—Asphaltum, 2 $\frac{1}{2}$ lb. ; spirit of turpentine, 8 ozs. ; double gold size, 3 ozs. ; solution of Indiarubber, $\frac{1}{4}$ oz. ; boiled linseed oil, 3 ozs. ; vegetable black, 1 dr.

▲

Simmer together until dissolved. Apply with a camel's hair brush. This preparation may be called "Elastic Varnish," or "Waterproof Black Enamel."

2.—Lamp-black, 3 or 4 lb.; bone black, $\frac{1}{2}$ lb.; glycerin, 5 lb.; syrup, 5 lb. Mix intimately together, then cut $2\frac{3}{4}$ ozs. gutta percha into small pieces and gently warm in iron or copper kettle until it flows easily; stir in olive oil, 10 ozs., and, when completely dissolved, add stearin, 1 oz. Pour this solution into the former while still warm and thoroughly incorporate. Then add gum senegal, 5 ozs., dissolved in water, $1\frac{1}{2}$ lb., aromatise with oil of lavender or rosemary, $\frac{1}{2}$ oz. For use, this polish is diluted with three or four parts of water. It may be called "Gutta Percha Gloss Blacking," or "Glycerin Leather Polish."

3.—Shellac, 16 ozs.; camphor, 1 oz.; gum sandarac, 2 ozs.; dissolve in alcohol, 4 pints, and add lampblack, 2 oz. To be applied with a camel's hair brush.

4.—Carnauba wax, 71 parts; oil of turpentine, 22.4 parts; wood soot, 6.6 parts. Melt and thoroughly mix and put up in waxed paper in cylinders weighing from 3 to 6 ounces.

5.—Extract of logwood, 2 ozs.; bichromate of potassa, 2 drs.; yellow prussiate of potassa, 2 drs.; powdered borax, 3 ozs.; liquid ammonia, 2 ozs.; shellac, 16 ozs.; water, 1 gall. Dissolve the extract in water, heating the liquid to nearly the boiling point. After a deep rich blue colour has developed, add the borax, and, when it has dissolved, the shellac, and lastly the ammonia. Then keep the whole at a gentle heat, agitating the mixture with a stick of wood, until the smell of ammonia has disappeared, and the shellac has dissolved.

6.—A liquid vegetable blacking may be made by mixing equivalent proportions of tannin and persulphate of iron, in fine powder, with sufficient glycerine to form a thick syrup. A solid preparation is obtained by the addition of a sufficient quantity of whiting, treacle, mineral oil, and hydrochloric acid.

7.—An Oil Paste Shoe-Blacking may be made as follows:—1. Ivory black, 2 lb.; molasses, 1 lb.; olive oil, 4 ozs.; oil of vitriol, 4 oz. Mix, and add enough water to give the required consistence. 2. Ivory black, 3 ozs.; coarse sugar, 2 ozs.; sulphuric acid, 1 oz.; sweet oil, $\frac{1}{2}$ oz.; vinegar, sufficient.

8.—*Waterproof Dubbing*.—Linseed oil, 200 parts; litharge 20 parts; yellow wax, 150 parts; tallow, 15 parts; treacle, 200 parts; lampblack, 100 parts; spirits of turpentine, 280 parts; methylated spirit, 35 parts; shellac, 5 parts. Dissolve the litharge in the linseed oil by boiling them together for an hour. Add the wax and tallow to the boiling oil, and then the treacle, keeping the mixture at a temperature of from 230 deg. to 250 deg. Fahr. to drive off the water contained in the treacle, and, lastly, thoroughly incorporate the lampblack with the whole. The mixture must now be ground up with the oil of turpentine, adding more if it is not of the proper consistence. The shellac should be dissolved in the methylated spirit before it is added to the cold oil.

9.—*Cement for Leather*.—Carbon disulphide, 4 parts ; chloroform, 6 parts ; gutta percha, 2·5 parts ; oil of rosemary, 0·01 part. This composition is also said to form excellent dubbing.

BLEACHING SPONGES.

First soak them in a solution of muriatic acid, made by adding a pint of acid to a gallon of water, to dissolve out the limestone, shells, &c. Rinse thoroughly, and immerse in a solution of permanganate of potassium (one ounce to a gallon of water). Wring out the sponges, and put them in a solution consisting of one pound of hyposulphite of soda, one gallon of water, and one ounce of muriatic acid. Then well wash with water to remove all traces of acid, &c.

BRUNSWICK BLACK.

Asphaltum, 2 lb. ; boiled linseed oil, 1 pint ; oil of turpentine, 4 pints. Melt the asphaltum in an iron pot, and add to it the boiled oil, previously heated. Mix well, remove the pot from the fire, and when cooled a little add the oil of turpentine.

BUTTER COLOURING.

1.—Annattoine, 5 parts ; turmeric, 6 parts ; saffron (Spanish), 1 part , lard oil, odourless, 16 parts ; alcohol, 4 parts. Rub the annattoine and turmeric with the oil, which may be deodorised by filtration through charcoal, and macerate for several days. Prepare a tincture with the alcohol and saffron. After a sufficient maceration, separate the solids from the oil by filtration, adding more oil through the filter, to keep the measure, and mix the tincture of saffron with this, driving off the alcohol by a gentle heat.

2.—Rorick's Compound.—The materials for 1,000 lbs. of butter are : Lard, butter, or olive oil, 6 lbs. ; annatto, 6 ozs. ; turmeric, 1 oz. ; salt, 10 ozs. ; nitre, $\frac{1}{4}$ oz. ; bromochloralum, $3\frac{1}{2}$ ozs. ; water, q.s. The lard, butter, or oil is put into a pan and heated in a water-bath. The annatto and turmeric are then stirred into a thin paste with water, and this is gradually added to the fatty or oily matters kept at a temperature of about 110 deg. F. The salt and nitre are next stirred in, and the mixture heated to boiling. The heating is continued from 12 to 24 hours, or until the colour of the mixture becomes dark enough. The bromochloralum is then introduced, and the mass is agitated until cold, when it is put up in sealed cans.

CACHOUS.

Extract of liquorice root, 100 parts ; dissolve in warm water, 100 parts ; add powdered gum catechu, 30 parts ; powdered gum arabic, 15 parts. Evaporate on a water bath to the consistence of an extract, then add powdered cascarilla bark, 2 parts ; vegetable charcoal, 2 parts ; powdered orris root,

2 parts ; powdered gum mastic, 2 parts ; when nearly cold add oil of peppermint, 2 parts ; essence of ambergris, 10 drops ; essence of musk, 10 drops. Mix, divide, and coat with silver leaf if desired.

CAPPING FOR BOTTLES.

1.—*Soulan's Process*.—Take of resin, purified, 79 parts ; ether, 100 parts ; collodion, 150 parts ; aniline dye, sufficient. Dissolve the resin in the ether, mix it with collodion and colour to taste. All that is necessary to apply the mixture is to dip the cork and the top of the bottle into it, turning it for an instant in the hand while the composition dries. The result is a semi-transparent varnish of pleasing appearance, especially if the cork of the bottle has been previously sealed on the top with sealing wax.

2.—Rosin, 20 parts ; sulphuric ether, 40 parts ; collodion, 50 parts. Any colouring matter soluble in the menstruum may be used. To be applied as directed in No. 1.

3.—Soak gelatin in water for a short time, and then dissolve it in glycerin, the former being in excess ; to half the amount of glycerin thus used add some tannic acid dissolved by aid of a water-bath ; mix the solutions. Any desired colouring matter may be added. If a pure white capping is desired, sulphate of barium or Pattison's white (chiefly a hydrated oxychloride of lead) or white lead may be worked in until the correct colour and texture are arrived at.

CEMENTS FOR MICA, GLASS, METALS, &c.

1.—Isinglass, 2 ozs. ; strong acetic acid, 2 ozs. ; water, 2 ozs. Stand in a water bath till dissolved then dissolve and add solution of mastic, 5 drs. ; gum ammoniacum, 5 drs. ; rectified spirits of wine, 6 ozs.

2.—Litharge, 2 parts ; white lead, 1 part ; boiled linseed oil, 3 parts ; gum copal, 1 part. Mixed just before using this forms a quick-drying and secure cement. It may be used for brass letters on glass windows.

3.—Nelson's gelatin and cut Penang isinglass, of each equal parts. Macerate in cold water for 24 hours. Drain the expanded gelatinous shreds thoroughly, first in a colander, then in an absorbent cloth, and dissolve the whole by the aid of gentle heat in the smallest possible quantity of methylated spirit of wine of not less than 54 deg. over proof. To every ten ounces of this solution add—previously dissolved in spirit containing five per cent. of acetic ether—gum mastic, 1 dr. ; gum sandarac, 3 drs. ; gum ammoniacum, 2 drs. Mix the whole thoroughly well together before pouring into bottles and put aside to cool. In using this cement it should be rendered fluid by a gentle heat and the surfaces intended to be united should be warmed and the cement applied to both, pressing them together and wiping off any superfluity. In 24 hours' time, the joint will sustain any moderate amount of force without giving way, and after two or three days a severe strain, or even hot liquids may be applied without injury.

4.—Russian isinglass, 1 oz., cut it in small pieces and bruise well, in order to separate the fibres ; then add warm water, 6 ozs., stand in a warm place for 24 to 48 hours, then evaporate to about three ounces ; next dissolve gum mastic, $\frac{1}{2}$ oz., in alcohol, 4 ozs. ; then transfer the isinglass from the evaporating dish to a tin can, heat both solutions, and add the mastic solution to the isinglass, in small quantities at a time, shaking the can violently after each addition. While still hot strain the liquid through a muslin cloth and put up in half-ounce bottles.

5.—Dissolve caoutchouc, cut small, 30 grs. ; chloroform, 4 ozs. by weight ; mastic, in fine powder, 1 oz. Dissolve without heat.

6.—*Strong Cement for Mending Pestles, &c.*—Gutta percha and shellac, of each equal parts. Melt and stir well together in an iron capsule placed on a sand bath. When the cement is used the articles to be mended should be warmed to about the melting point of the mixture, and then retained in proper position till cool.

7.—Gum mastic, 10 grs. ; rectified spirits of wine, 2 drs. ; pure glue, 2 ozs. ; gum ammoniac, 10 grs. Dissolve and keep in stoppered bottle.

8.—*"Parabolic" Cement.*—Curdle skim-milk with rennet or vinegar, press out the whey, and dry the curd by a very gentle heat, but as quickly as possible. When quite dry, grind it in a pepper or coffee mill, and triturate it in a mortar until reduced to a very fine powder. Mix ten parts, by weight, of this powder with one part of quicklime, also in very fine powder, and to every ounce of the mixture add five or six grains of camphor. Triturate the whole together and keep in vials well corked.

9.—A caoutchouc cement for waterproof fabrics may be made by dissolving by maceration 10 parts of caoutchouc (cut in small pieces), in 280 parts of chloroform, then melt caoutchouc (cut in small pieces), 10 parts ; resin, 4 parts ; add oil of turpentine, 1 part, and dissolve the whole in oil of turpentine, 40 parts ; then mix the two solutions. For use, dip a piece of linen in the cement and apply it to the torn article, which should also receive a layer of cement before and after the application of the linen.

10.—*Aquarium Cement.*—Litharge, 1 gill ; fine, dry sand, 1 gill ; plaster of Paris, 1 gill ; powdered resin, $\frac{1}{2}$ gill ; boiled linseed oil, sufficient. Mix the dry substances thoroughly, and add enough of the boiled oil to make a paste of proper consistence. Let it stand four or five hours before it is applied. It should be used on the same day that it is prepared.

11.—For aquarium purposes and for mounting minerals :—Gutta percha, in chips, 4 ozs. ; brushmakers' pitch, 8 ozs. ; shellac, $\frac{1}{4}$ oz. Melt in an iron capsule on a sand bath, and stir together. Pour out on a wet slab and roll into sticks.

12.—An acid-proof cement may be made by melting unvulcanised India-rubber, 1 part ; linseed oil, 2 parts. Mix to a proper consistence with fine China clay. The cement is said to dry and harden more effectually and quickly if one-fifth of a part of litharge is added to it.

13.—A cement for water-tight parchment paper bags may be made by warming a 15 per cent. solution of gelatin, and mixing it in the dark with a 3·5 per cent. solution of bichromate of potassium. The mixture is poured into small black bottles, and kept carefully from the light, which would harden it and make it insoluble. Before use the bottle is placed in hot water, carefully preventing the access of daylight. When the cement is melted, the edges of the parchment paper, which must have been wetted, are brushed over with the cement, and then rapidly dried in the sun. To test them, they are filled with water and hung up in frames. Any hole which may be discovered is closed by means of the cement.

14.—*Liquid Glue.*—1.—Mix good strong glue in methylated spirit. Digest for three or four days. 2.—Dissolve best clear glue in equal volumes, of water and strong vinegar, add one-fourth of an equal volume of alcohol and a small quantity of solution of alum in water. 3.—Dissolve gelatin on a water bath in its own weight of strong vinegar, and a quarter of its weight of alcohol, and add a little alum. Useful for cementing mother of pearl, bone, &c., upon wood or metal. 4.—Sugar, 2 ozs. ; water, 6 ozs. ; slacked lime, 1½ ozs. ; glue, broken small, 1½ ozs. Dissolve the sugar in water, add the lime, and heat nearly to boiling ; macerate for several days, pour off the clear liquid, and add to it the glue. Heat moderately until dissolved. This glue resembles gum mucilage in glazing and adhesive power. It can be used for almost every purpose, except when it will come in contact with colours destroyed by alkalies.

15.—*Waterproof Glue.*—Dissolve ½ oz. each of gum sandarac and mastic in 8 fluid ozs. of strong alcohol (or methylated spirit), to which add ½ oz. of turpentine. Put the dissolved gums into a double glue-pot, add by degrees a hot, thick solution of glue to which isinglass has been added ; stir the whole over the fire until all the ingredients are thoroughly incorporated. Next strain through a cloth while hot, and it is ready for use. It may now be returned to the glue-pot, and ½ oz. of very finely powdered glass added to it. It should be used quite hot. 2.—Take of shellac 3 parts ; india-rubber, 1 part, by weight. Dissolve each separately in ether free from alcohol. It is best to do this in stoppered bottles and without heating, as the ether readily evaporates. When solution is complete, mix the two, and keep well stoppered for use. If the glue be thinned by the admixture of ether, and applied as a varnish to leather along the seams where it is sewn together, it renders the jointed seam water-tight.

CLEANSING AGENTS FOR BOTTLES AND MORTARS.

For Greasy Bottles.—1.—Put into the bottle powdered bichromate of potassium and as much in bulk of strong sulphuric acid. Let the mixture run well round and then stand till the organic particles are carbonised or turn black. Add a little water, shake well, and rinse out. 2.—Castille soap in shavings, 4 ozs. ; carbonate of soda, 2 ozs. ; borax, 1 oz. ; solution of ammonia, 7 ozs. ; alcohol, 3 ozs. ; sulphuric ether, 2 ozs. ; soft water,

sufficient to make one gallon. Boil the soap in the water until dissolved and add the other ingredients.

For Mortars, Slabs, &c.—To remove oil, balsams, resins, grease, &c., first thoroughly scrape with a spatula, then wipe out with paper, next with a piece of lint slightly moistened with spirits of turpentine, next, with cotton moistened with a little soap liniment and lastly with water. To remove iodine rub with a few grains of potassic iodide and a very little water. For potassic permanganate use muriatic acid. For indigo, sulphuric acid.

COCHINEAL COLOUR.

Cochineal, 1 oz.; carbonate of potassium, $\frac{1}{2}$ oz.; powdered alum, $\frac{1}{2}$ oz.; cream of tartar, 4 ozs.; water 8 fluid ozs.; glycerin, 8 fluid ozs. Reduce the cochineal to a fine powder, add the carbonate of potassium, and triturate it with two fluid ounces of water. Allow the mixture to stand one hour; add the alum and cream of tartar successively, and, when effervescence has ceased, the remaining water; filter, and add the glycerin.

COLOUR FOR LIQUEURS.

Alcohol, 1 pint; powdered yellow berries, 8 grs.; saffron, 1 gr. The above quantity is sufficient to give 25 gallons of liqueur a pale yellow tint. If a brighter yellow is required, more of the colouring solution must be used. By adding 1 gr. of indigo a green colouring solution is obtained.

CONDIMENTS.

Curry Powder.

Powdered turmeric, 5 ozs.; powdered coriander seeds, 2 ozs.; powdered fœnugreek seeds, 1 oz.; powdered cardamom seeds, 1 oz.; powdered ginger, 1 oz.; powdered carraway seeds, 1 oz.; powdered white pepper, 2 ozs. Mix.

French Mustard.

Fresh parsley, 2 ozs.; fresh chervil, 2 ozs.; fresh chives, 2 ozs.; fresh tarragon, 1 oz.; garlic, 1 oz.; thyme, 1 oz.; cloves, $\frac{1}{2}$ oz.; salt, 8 ozs.; olive oil, 4 ozs.; wine vinegar, 8 pints; mustard flour, sufficient. Cut the herbs and macerate them fifteen days in the vinegar; press the liquid out and add to it the other ingredients so as to make twelve quarts of prepared mustard, enough water being added to complete the necessary quantity of liquid.

Fruit Flavourings.

To extract and preserve fruit essences, mash the juicy fruits (strawberries, raspberries, blackberries, cherries, currants, &c.) in a basin to a pulp. Place on the fire and make scalding hot, then pour into a hair sieve and allow the juice to strain through. Put into bottles and securely tie down. Place the bottles in a cauldron of cold water and boil for 20 minutes. Remove from the fire and allow to remain in the cauldron until cold. Then set away for use. In the case of non-juicy fruits (apples, pears, peaches, &c.),

put the fruit into a basin, cover with water and boil to a pulp, then place on a hair sieve, and allow to drain without any pressing. Put the juice into bottles and proceed as above. In cases where transparency or clearness is not necessary, the pulp of the fruit may be used as well as the clear liquor. For ice creams, fruit ices, &c., the whole of the fruit, excepting only the skins and seeds, may be utilised.

Extract of Herbs for Flavouring Soups.

Take of savory, sweet marjoram, basil, of each, 2 ozs.; sage, black pepper, of each, $\frac{1}{2}$ oz.; thyme, 1 oz.; celery seed, $1\frac{1}{2}$ drs.; alcohol, $3\frac{1}{2}$ pints; water, $\frac{1}{2}$ pint. Reduce the dry ingredients to a coarse powder. Pack them tightly in a percolator, after having moistened them with six fluid ounces of the mixture of alcohol and water. Pour in the remainder of the menstruum. As soon as the liquid ceases to pass through, displace with diluted alcohol sufficient to make the product measure four pints. This is not only a palatable addition to soups and gravies but also a pleasant flavouring to beef tea in the proportion of four or five drops to each wine glassful of tea. If the flavour of celery alone is required, it may be prepared as follows:—Celery seed bruised, 6 drs.; alcohol, 14 fluid ozs.; water, 2 fluid ozs. Macerate for two days and filter.

Kitchen Pepper.

White or black pepper, 1 lb.; powdered mace, 1 oz.; powdered nutmegs, 1 oz.; Cayenne pepper, $\frac{1}{2}$ oz. Mix intimately together.

Essence Ratafia.

Essential oil of almonds, 6 drachms; rectified spirit of wine, 10 oz. 2 drs.; simple syrup, 1 oz. Mix.

Sauces.

1.—Vinegar, 1 qt.; allspice, powdered, 2 drs.; cloves, 1 dr.; black pepper, powdered, 1 dr.; mustard, 2 ozs.; ginger, 1 dr.; salt, 2 ozs.; shallots, 2 ozs.; sugar, 8 ozs.; tamarinds, 4 ozs.; sherry, 1 pint; curry powder, 1 oz.; cayenne, 1 dr. Mix all the ingredients together, simmer them for an hour, and strain. A little caramel may be added to colour the sauce.

2.—Apples, 6 lb.; onions, 3 lb.; sugar, 3 ozs.; powdered capsicum, $1\frac{1}{2}$ oz.; powdered Jamaica ginger, 6 ozs.; coriander seed, 2 ozs.; essence of anchovy, 4 pints; Indian soy, 2 pints; extract of meat, 8 ozs.; strong acetic acid, 2 ozs.; burnt sugar, 4 ozs.; best vinegar, 1 gall.; chili vinegar, 1 pint; garlic vinegar, 1 pint. Mix.

Soy.

Brewer's sweet wort, 1 gall.; molasses, 5 lbs.; salt, $4\frac{1}{2}$ lbs.; mushroom juice, 2 pints. Mix, and dissolve with a gentle heat, and set the mixture aside for a fortnight, then decant and bottle for use.

Mixed Spice.

Powdered nutmegs, 2 ozs.; powdered mace, $\frac{1}{2}$ oz.; powdered Jamaica ginger, $\frac{1}{2}$ oz.; powdered cloves, 2 ozs.; cassia, 2 ozs.; powdered pimento, 2 ozs. Mix.

Vanilla Sugar.

Well-frosted vanilla beans, 10 parts ; white sugar, 90 parts. Cut the beans very small and pound them up with part of the sugar until the whole is reduced to a fine powder. Pass through a fine sieve. Mix the different portions thoroughly and preserve in a well-stoppered bottle.

Extract of Vanilla.

1.—Vanilla beans of good quality, 1 oz. ; sugar candy, 2 ozs. ; alcohol, 9 fluid ozs. ; water, 7 fluid ozs. Cut the vanilla as small as possible with a sharp knife, then transfer it to an iron mortar and beat it and the sugar candy into powder, which is to be put into a bottle with the alcohol, and allowed to macerate therein, with occasional agitation, for twenty-four hours. Then add the water, treat in the same manner for two days and filter the extract, which will be found to possess a strong flavour and good colour.

2.—Good Mexican vanilla, 4 ozs. ; sugar (granulated), 4 ozs. ; alcohol, water, of each a sufficient quantity. Cut the beans transversely into small pieces, place the sugar and the cut beans in an iron mortar of convenient size, and reduce to as fine a condition as practicable, after which moisten the powder with a mixture of alcohol and water in proper proportion so as to obtain a menstruum containing not less than 50 per cent. of alcohol ; then carefully pack the moistened powder in a cylindrical percolator, close lower orifice with a cork, pour on more menstruum of the same strength (sufficient to cover the surface of the powder), cover the top of the percolator, and allow it to remain undisturbed for twenty-four hours ; then remove the cork and permit percolation to proceed, not faster than at the rate of 40 drops per minute, and continue until four pints have passed when the preparation is completed.

 COLOURS FOR SHOW BOTTLES.

The liquids, excepting those containing chromates or bichromates, must be protected against freezing by substituting equal parts of alcohol and glycerin for a portion of the water directed. This addition will vary in proportion from one-fourth to one-half of the whole, according to the severity of the winter. Show colours should not be filtered through paper but through sand, powdered glass, or glass wool. Distilled water should be used, and if not freshly distilled it should be boiled.

Amethystine Colour.—Dissolve salicylic acid, 5 grains, in a little solution of ammonia, and mix with water, 2 galls. To this add a few drops of solution of chloride of iron, and afterwards a few drops of hydrochloric acid.

Pale Blue.—Sulphate of copper, 1 lb. ; sulphuric acid, 1 oz ; water, 12 to 16 pints.

Crimson.—Iodine and potassium iodide, of each 2 drachms ; triturate with a drachm of water, and add 3 gallons of water and 4 oz. of hydrochloric acid.

Purple Blue.—Sulphate of copper, 2 to 4 drs. ; ammonia sufficient, or 1 to 2 ozs. ; water, 12 to 16 pints.

Green.—Sulphate of copper, 1 lb. ; muriatic acid, 1 lb. ; water, 12 to 16 pints.

Emerald Green.—This may also be obtained by dissolving one ounce of nickel in equal parts of nitric acid and water, then diluting with sufficient water to make one gallon.

Fluorescent Glass-Green.—Fluorescin, 1 gr.; ammonia, 1 dr.; water, 1 gallon.

Purple.—Sufficient chloride or nitrate of cobalt, dissolved in water, to give proper depth of tint. Dissolve precipitate by adding solution of carbonate of ammonia in excess. Add gradually solution of ammonio-sulphate of copper till the desired tint is obtained. Ammonio-sulphate of copper is made by adding to a solution of sulphate of copper enough ammonia to re-dissolve precipitate. 2.—Salicylic acid, 1 gr.; alcohol, 2 drs.; tincture of muriate of iron, 30 drops; water, 2 gallons.

Brilliant Purple.—Sulphate of copper, 2 drs.; water, 2 ozs.; French gelatin, 1 dr.; boiling water, 2 ozs.; solution of potassa, 2 pints. Dissolve the copper salt in the water, and the gelatin in the boiling water. Mix the two solutions and the liquor of potassa. Shake the mixture a few times during ten hours, after which decant and dilute with a sufficiency of water.

Red.—Carbonate of cobalt, 1 dr.; muriatic acid, sufficient; carbonate of ammonia, sufficient; water 12 to 16 pints. Dissolve the carbonate of cobalt in the acid, and add to the solution enough carbonate of ammonia to dissolve the precipitate formed at first.

Orange Red.—Dissolve bichromate of potassium in water and add for every pound of the salt four ounces of sulphuric acid.

Violet.—Cudbear, 2 ozs.; ammonia, 8 ozs.; water, 2 galls.

Yellow.—Bichromate of potassa, 6 ozs.; carbonate of soda, 4 ozs.; water, 12 pints.

CORDIALS, ETC.

Blackberry Cordial.—Crushed blackberries, 1 gall.; sugar, 2 lb.; brandy, 1 gall. Macerate the berries in the brandy for five or six days; express the liquor; add the sugar, and after two weeks decant and filter.

Cherry Cordial.—Good French brandy, 1 qt.; juice of cherries, 1 qt.; best white sugar, finely powdered, 2 lb. Add the sugar to the juice and stir until it is thoroughly dissolved; add the brandy, and filter through blotting-paper.

Curaçao Cordial.—1. Oil of orange, very fresh, 1 dr.; oil of cinnamon, 1 drop; oil of juniper berries, 2 drops; oil of coriander seed, 2 drops; deodorised alcohol, 3 pints; simple syrup, 2 pints; water, sufficient to complete 1 gall. Mix the alcohol with an equal volume of water, and add the mixture slowly to the essential oils previously rubbed in a mortar with carbonate of magnesia or phosphate of lime. Transfer the whole to a bottle, and set it aside with occasional agitation, for two or three days. Then add the simple syrup, the remainder of the water, and filter through paper. This gives the *white cordial*; for the *red*, infuse in the alcoholic menstruum about two drachms of cudbear.

2.—True curaçao orange peel, 8 ozs.; vanilla bean, 1 dr.; orange flower water, 3 ozs.; deodorised alcohol, 3 pints; water, 3 pints; simple syrup, 2 pints. Mix all the liquids together, and in the menstruum infuse the orange peel and the vanilla for a month; then filter. This is a brown cordial with a very fine flavour. An improvement in the manipulation is the following: After weighing the orange peel, soak it twenty-four hours in about a gallon of lukewarm water, throw the liquid away, and having ascertained the increase in weight, deduct it from the quantity of water which is to compose the menstruum for the maceration.

3.—Bitter orange (curaçao) peel, freed from pulp and cut, 15 parts; orange berries, bruised, 15 parts; alcohol (90 per cent.), 190 parts. Macerate, strain, and add milk, 10 parts; water, 80 parts. Filter and mix with simple syrup, 50 parts.

Ginger Liqueur.—Ginger, $\frac{1}{2}$ lb.; rectified spirit of wine, 8 lb.; water, 3 lb. Percolate and distil 8 lb.; then add sugar, $3\frac{3}{4}$ lb., dissolved in water, 4 lb.

Hop Cordial (tasting like Hop Bitters).—Hops, dandelion, gentian, chamomile, stillingia, orange peel, of each 2 parts; alcohol, 64 parts; syrup, 16 parts; water, 76 parts.

Lime-Juice Cordial.—Glucose, 36 lb.; cane sugar, 108 lb.; water, 28 gall.; lime juice, 17 gall.; oil of orange, 4 drs.; oil of nutmegs, 4 drs.; salicylic acid, 2 ozs. Dissolve the glucose and cane sugar in the water, add to the solution the lime-juice, the essential oils, and the salicylic acid. Mix well and strain.

Maraschino Cordial.—Raspberries, 18 lb.; sour red cherries, 12 lb.; diluted alcohol, 14 gall.; simple syrup, 14 gall. Mash the raspberries and the cherries together into a pulp, being careful to break the cherry stones completely. Macerate twenty-four hours with the diluted alcohol, distil eight gallons of liquid, and add to the simple syrup.

Peppermint Cordial.—1. Proof spirit, 2 pints; oil of peppermint, 40 minims; simple syrup, 11 ozs.

2.—English oil of peppermint, 5 ozs.; alcohol, 3 pints. Agitate for some time, in a bottle capable of holding four pints or more; then empty into a cask having a capacity of upwards of 100 gallons, and pour 36 gallons of perfectly white and flavourless proof spirit (50 per cent. alcohol) into it, agitate the whole for ten minutes; then add a solution of 275 lb. of the best double refined sugar in about 35 gallons of pure filtered rain-water, stir up the contents of the cask for at least 15 minutes, and add sufficient clear rain-water, holding in solution 5 ounces alum, to make up the whole quantity to exactly 100 gallons; the whole is again well agitated for a quarter of an hour, after which the cask is bunged and allowed to repose for a fortnight before it is broached.

Punch-Essence.—1. White sugar, 22 lb.; lemons, 12 lb.; oranges, 12 lb.; green tea, $2\frac{1}{2}$ ozs.; cinnamon, $\frac{1}{2}$ oz.; vanilla, $\frac{1}{2}$ oz.; tartaric acid, 1 oz.; rum, 1 gall.; arrack, 1 gall.; boiling water, 1 pint; red wine, sufficient. Peel the lemons and oranges and digest the peels with the rum for three days.

Express the peeled fruits and dissolve the tartaric acid in the juice. Digest the tea, cinnamon, and vanilla for fifteen minutes with the boiling water. Filter all the solutions and add them to a thick syrup prepared by boiling the sugar with a sufficient quantity of red wine.

2.—Arrack, 1000 parts; wine (white Burgundy or Bordeaux), 500 parts; syrup, 750 parts; citric acid, 20 parts; sugar, flavoured with the rind or oil of lemon, 20 parts. Mix and filter after standing a few days. One part to be mixed with two parts of hot water.

Ratafia Liqueur.—To three pints of filtered juice of any kind of fruit, such as red or black currants, raspberries, mulberries, damsons, cherries, and red currants and raspberries, add one quart of old cognac brandy, three pounds loaf sugar (clarified, with three pints of water), and a dessert-spoonful each of essence of vanilla, cinnamon, and cloves; mix thoroughly to amalgamate the compounds. Bottle off in fruit bottles well corked and sealed, and use the liqueur at the end of six or twelve months.

Sarsaparilla Mead.—Sarsaparilla root, contused, 1 lb.; sassafras, 8 ozs.; aniseed, 2 ozs.; ginger, 2 ozs.; cloves, 1 oz. Boil for fifteen or twenty minutes in eight gallons of water; strain and set the liquor aside for several hours to become clear. Then decant, and transfer to a ten-gallon soda-water fountain, adding to it molasses, 3 qts.; honey, 3 pints. Complete with water the ten gallons, and charge with carbonic acid gas. Another way is to add to the completed mixture one quart of brewer's yeast, and when the fermentation is about half completed, to bottle the mead in ordinary soda-water bottles.

Shrub.—One pint Seville orange juice; 3 pints rum or brandy; 2 lbs. white sugar. When the sugar is dissolved, strain the mixture through a jelly-bag and bottle it.

Strawberry Cordial.—Take any given quantity of the best and most thoroughly ripe strawberries, pour over as much proof spirit as will cover them; allow to stand for 24 hours; drain off and replace with the same quality of fresh proof spirit; allow to stand another 24 hours; now drain off and replace with water; add fine sugar or syrup in the proportion of 3lbs. to every gallon of the mixed liqueur; also, a gill of orange-flower water. Filter and bottle.

FIREPROOFING FABRICS.

1.—To a solution of sodic tungstate sp. gr. 1.14, add 3 per cent. by weight of sodic phosphate.

2.—Alum, 6 parts; borax, 2 parts; sodic tungstate, 1 part; dextrin, 1 part. To be dissolved in weak solution of soap.

3.—Alum, 5 parts; ammonia phosphate 5 parts; water, 100 parts.

4.—Borax, 3 parts; Epsom salts, 2½ parts; water, 30 parts.

5.—Ammonic sulphate, 8 parts; ammonic carbonate, 2½ parts; boric acid, 3 parts; borax, 2 parts; water, 100 parts.

FLY PAPER OR FLY GLUE.

1.—In a tin vessel melt one pound of resin, and add two fluid drachms of linseed oil. While the mixture is warm, dip the spatula into it, and spread what adheres to the blade on foolscap paper, after which it may be allowed to cool. Different samples of resin require different proportions of oil.

2.—Resin, 100 parts; turpentine or Burgundy pitch, 50 parts; rapeseed oil or linseed oil, 65 parts. Melt and liquefy by a gentle heat, and apply to stiff paper.

3.—Resin, 4 ozs.; linseed oil, 1 oz.; mix together, and add honey, 1 oz. Stir well and spread on paper, which must be previously steeped in alum solution to prevent the preparation from working through.

FUMIGATORS.

Pastilles.—1. Benzoin, 4 ozs.; Cascarella bark, $\frac{1}{2}$ oz.; nitre and gum arabic, of each 3 drs.; gum myrrh, 1 dr.; oil of nutmeg and oil of cloves, of each 25 drops; charcoal, 7 ozs. Reduce all the ingredients to a fine powder, mix and beat them to a smooth, ductile mass, with a sufficient quantity of cold water. Then form into conical pastilles about three-quarters of an inch in length and dry them in the air.

2.—Yellow sandal wood, ground, 1 oz.; borax powder, $1\frac{1}{4}$ ozs.; gum benzoin, 1 oz.; gum olibanum, 1 oz.; gum thus, 1 oz.; gum myrrh, $\frac{1}{2}$ oz.; powdered cascarella bark, 2 ozs.; powdered nitre, $\frac{3}{4}$ oz.; balsam of tolu, $\frac{3}{4}$ oz.; balsam of Peru, $\frac{1}{2}$ oz.; camphor, $\frac{1}{2}$ oz.; oil of cloves, 10 drops; oil of cinnamon, 20 drops; oil of bergamot, 20 drops; oil of lemon, 20 drops; otto of rose, 15 drops; strong acetic acid, 1 oz.; powdered charcoal, 1 lb. To be beaten into a mass with mucilage of gum tragacanth and formed into pastilles.

Anti-Mosquito Pastilles.

Charcoal, 500 parts; saltpetre, 60 parts; carbolic acid, 40 parts; Persian insect powder, 250 parts; tragacanth and water, q. s. to form a thick paste. Form into conical pastilles.

astille Paper.

Cascarella bark, bruised, 3 ozs.; nutmegs, bruised, 1 oz.; methylated soirit, 32 ozs. Macerate for 14 days, shaking frequently; then strain through muslin and add gum benzoin, 2 ozs.; benzoic acid, 1 dr.; gum styrax, 2 oz.; gum thus, 1 oz.; balsam of tolu, 1 oz.; gum myrrh, bruised, 6 drs.; gum camphor, 2 drs.; oil of cloves, 4 drs.; oil of aniseed, 2 drs.; oil of lavender, 1 oz.; mix. Nitre $1\frac{1}{2}$ oz.; water, 20 ozs. Dissolve, soak the paper and dry.

FREEZING MIXTURE.

Calcium chloride, 20 parts; magnesium chloride, 20 parts; sodium chloride 6 parts; potassium chloride, 13 parts; water, 41 parts. On mixing the salt with an equal volume of snow and crushed ice, the temperature of the mixture is depressed to 22 deg. Fahr.

FABRICEOUS FOOD.

Chestnut flour, 450 parts; potato starch, 300 parts; lentil flour, 125 parts; haricot beans, 125 parts; powdered vanilla beans, 100 parts.

FRENCH POLISH.

Gum shellac, 5 oz.; finish or methylated spirit, 2 pints. Digest the whole with a gentle heat for seven days, frequently shaking.

FURNITURE POLISH.

1.—Methylated spirit, 24 ozs.; gum shellac, 2 ozs.; gum myrrh, 1 dr.; gum mastic, $\frac{1}{2}$ oz.; gum benzoin, 2 drs.; gum thus, $1\frac{1}{2}$ drs.; oxalic acid, $\frac{1}{2}$ oz.; solve and add, linseed oil, 24 ozs.

2.—Bees' wax, 4 ozs.; linseed oil, 6 pints; finish, 24 ozs.; hydrochloric acid, 4 ozs.; butter of antimony, 12 ozs.; vinegar, 6 pints; 6 raw eggs (well beaten), spirits of turpentine, 24 ozs. Mix.

3.—Methylated spirit, 4 pints; filter through ground camwood, 8 ozs.; and add, amber resin, 8 ozs.; shellac, 8 ozs.; gum benzoin, 2 ozs. Ready for use in three days. Apply with flat camel's hair brush.

4.—Paraffin wax, 1 part; paraffin oil, 5 parts. Dissolve with gentle heat, rub on the furniture, and after 24 hours rub off with flannel.

5.—Olive oil, 9 parts; oil of amber, rectified, 9 parts; oil of turpentine 9 parts; tincture of alkanet, 1 part. Mix and keep in a well-stoppered bottle. When using it, pour a little upon a pellet of cotton, apply it lightly to the wood several times, and then rub it dry with a cotton rag.

GALL SOAP FOR CLEANING FINE SILK GOODS.

Cocoa-nut oil, 1 lb.; heat in a copper kettle to 100 deg. Fahr., then well stir in caustic soda lye (49 deg. Twaddell), $\frac{1}{2}$ lb.; add Venice turpentine, $\frac{1}{2}$ lb., and allow to stand in warm place for half-an-hour; then add oxgall, 1 lb.; curd soap, dried and powdered, 1 lb. to 2 lb., or sufficient to solidify the mass.

GLOVE CLEANING PASTE.

Eau de Javelle (a solution of chloride of soda), 135 parts; solution of ammonia, 8 parts; soap in shavings, 200 parts; water, 150 parts. Make into a paste and rub on and off with a clean piece of soft flannel.

GREASE ERADICATOR.

Castille soap in shavings, 4 ozs.; carbonate of soda, powdered, 2 ozs.; borax, powdered, 1 oz.; solution of ammonia, 7 ozs.; alcohol, 3 ozs.; turpentine, 2 ozs.; sulphuric ether, 2 ozs.; soft water to make $\frac{1}{2}$ gall. Boil the soap in the water until it is dissolved, and then add the other ingredients.

GROUND GLASS, (IMITATION).

Best clear gelatin, 5 ozs. ; water, 20 ozs. ; glycerin, $\frac{1}{2}$ oz. ; oxide of zinc, 1 oz. After soaking the gelatin in the water for a few hours, it is dissolved by gentle heat, and then filtered through flannel. The oxide of zinc is placed in a mortar with the glycerin and one ounce of the water and made into a soft paste. It is then stirred into the warm solution of gelatin and allowed to stand for two hours, keeping the solution warm to allow the coarser particles to settle to the bottom ; the upper portion is then carefully decanted to get rid of the sediment ; or, if it be allowed to cool and become a jelly, a slice can be cut off from the bottom to remove all the coarse particles. Re-dissolve by a gentle heat, and apply to glass as required.

PREPARATIONS FOR THE HAIR.

Brilliantine.

1.—Rectified spirit of wine, 1 pint ; ess. bouquet, 4 ozs. ; castor oil, sufficient to saturate ; glycerin, 2 ozs. ; oil of almonds, 10 ozs. 2.—Spermaceti, 2 ozs. ; veal fat, 4 ozs. ; castor oil, 2 ozs. ; oil of bitter almonds, $\frac{1}{2}$ dr ; oil of cloves, 1 dr. ; ess. bergamot, 2 drs.

Cosmetic for the Moustache, &c.

1.—White wax, 50 parts ; beef suet, 100 parts ; oil of bergamot, 6 parts ; oils of cinnamon and thyme, of each sufficient. It is coloured blonde with tincture of saffron or turmeric, and brown or black with raw umber or lone black, ground in oil.

2.—*White Cosmetique.*—Benzoated suet, 1 lb. ; white wax, 1 lb. ; Jasmine pomade, 8 ozs. ; Tuberose pomade, 8 ozs ; otto of roses, 1 drachm. Melt at a gentle heat, and cast into moulds.

3.—Suet, 1 lb. ; paraffin wax, 8 ozs ; white wax, 2 ozs ; oil of bergamot, 1 oz. ; oil of cassia, $\frac{1}{2}$ drachm ; oil of lavender, 1 drachm. To make coloured cosmetiques, yellow beeswax is, in the above receipts, substituted for white wax, and the appropriate pigment, finely ground with the smallest possible quantity of oil of almonds, is added to the melted mass, and well mixed in, just before it is poured into the moulds.

4.—White wax, $4\frac{1}{2}$ ozs. ; lard, $4\frac{3}{4}$ ozs. ; balsam of Peru, 1 dr. ; oil of orange flowers, 30 drops ; oil of lavender, 5 drops ; oil of cloves, 6 drops, oil of rosemary, 5 drops. Melt the lard, wax, and balsam, and stir them constantly until they thicken, then add the oils. Pour into moulds, and, when cold, wrap up each stick in wax paper and tinfoil. For black stick pomade rub up 40 grs. of best lamp black with the lard. Brown stick pomade may be obtained by using burnt sienna or Vandyke brown in the same way, and various shades by mixing burnt sienna with lamp black.

Bandoline.—1. Macerate $\frac{1}{2}$ oz. of quince seed in 1 pint of rose-water for a few hours, and strain without pressure. Then add 1 oz. of glycerin. This mixture will not keep long without the addition of some alcohol, which will

however, render it turbid. Iceland moss, agar-agar (or Japanese isinglass) or flaxseed, may be used in place of quince seed. 2.—Gum tragacanth, 1 oz. ; water, 56 ozs. ; alcohol, 8 ozs. ; oil of bitter almonds, 40 minims. Leave the gum tragacanth in the water over night. In winter, hot water may be used, or the mixture may be kept in a warm place. When the tragacanth is thoroughly disintegrated strain the mucilage with pressure through a cloth, and add to it the oil of almonds dissolved in the alcohol. 3.—Substitute about ten drops of otto of roses for the oil of bitter almonds, and colour the preparation with a little carmine dissolved in the alcohol. 4.—Macerate $1\frac{1}{2}$ drs. of best tragacanth with 7 oz. of water, 3 oz. of proof spirit, and 10 drops of oil of rose for 24 hours, and strain (Redwood). 5.—Macerate 6 oz. of tragacanth in 1 gallon of rose-water during 48 hours, until it forms a gelatinous mass, frequently shaking. Then strain through a coarse linen cloth, and allow it to stand for another day or two. Strain it once more, and add $\frac{1}{2}$ dr. of otto of rose.

Depilatories.

1.—Sodic carbonate, 2 drs. ; quick lime, 1 dr. ; powdered charcoal, 16 grs. ; glycerin, 2 drs. ; lard, 14 drs. The pomatum should be applied every day for ten or twelve days, by which time the skin will redden and the hair will fall off without pain.

2.—Crystallised sodic sulphide, 10 parts ; quicklime, 30 parts. Powder finely, mix, and keep in a stoppered bottle. For use, mix into a paste with water and apply to the part. This application requires care as it is sometimes liable to remove the skin with the hair.

3.—Quicklime, 30 parts ; gum arabic, 60 parts ; orpiment, 4 parts. To be prepared and used as No. 2.

4.—Powdered orpiment, 5 parts ; quicklime, 50 parts ; wheat starch 30 parts. To be prepared as No. 2. Spread with a feather in a layer as thick as the blade of a knife over the part to be denuded of hair, and scrape off again with a splinter of wood as soon as it begins to dry.

5.—Powdered orpiment, 1 part ; quicklime, 3 parts.

Dyes.

1.—*Light Brown to Black.*—Pyrogallic acid, 15 to 75 grains (according to tint required) ; acetic acid, $1\frac{3}{4}$ pints. The hair after washing with this solution should be allowed to partially dry and then be steeped in the following solution : Nitrate of silver, 450 grains ; sulphate of copper, 41 grains ; water, $8\frac{3}{4}$ ozs. Add sufficient ammonia to dissolve the precipitate formed, and make up to $1\frac{3}{4}$ pints,

2.—*Black.*—Reduce gall nuts to an impalpable powder, then grind up into a paste with almond or olive oil. Roast the mass in an iron pot until the whole of the fatty matter is driven off. Then rub into a thin paste with water, heat, evaporate nearly to dryness, and incorporate with the mass equal parts of fine iron and copper filings. The preparation is perfumed with rose water and should be kept in a damp place.

3.—Dissolve 100 parts of bismuth, in the smallest possible quantity (about 280 parts) of ordinary nitric acid, add a solution of 75 parts of tartaric acid in water and then a rather considerable quantity of water to ensure complete precipitation. Throw the whole upon a filter and wash the residue with water until the washings are no longer acid. Put the magma left on the filter into a dish and gradually stir in solution of ammonia until all is dissolved. To this liquor add 75 parts of hyposulphite of soda in powder, and when dissolved filter the product and put into bottles; 1 or 2 per cent. of glycerin may with advantage be added. The liquid contains about 5 per cent. of bismuth. It may be further diluted with water if desired. The hair or beard acquires after five or six hours a deep chestnut colour. Upon washing the hair this colour disappears, giving place to a delicate flaxen colour. By repeating the operation daily a stage is arrived at when, after passing through all the intermediate shades, the deep chestnut colour remains persistent.—(*Naquet*).

4.—*Naquet's Hair Dye, Modified*.—Citrate of bismuth, 1 oz.; ammonia, sufficient; hyposulphite of soda, $\frac{1}{2}$ oz.; alcohol, 3 ozs., or glycerin, $\frac{1}{2}$ oz.; water to complete, 16 ozs. Rub the citrate into a thin paste with lukewarm water, and add enough ammonia to make a solution in which the hyposulphite is to be dissolved. Filter, and complete the measure, adding the alcohol last, if it is employed as a preservative.

5.—(1.) Hydrosulphate of ammonia, 1 oz.; liquor potassa, 3 drs.; distilled water, 1 oz. (2.) Nitrate of silver, $1\frac{1}{2}$ drs.; distilled water, 2 ozs. Mix and apply with separate brushes.

6.—(1.) Sulphide of potassium, $1\frac{1}{2}$ ozs.; solution of potassic hydrate, $\frac{1}{2}$ oz.; distilled water, 8 ozs. (2.) Nitrate of silver, $\frac{3}{4}$ oz.; rose water, 8 ozs. Mix soak the hair in No. 1 solution, partially dry, and apply solution No. 2 until the desired tint is obtained.

7.—Sugar of lead, 1 oz.; borax, 1 oz.; milk of sulphur, 1 oz.; liquor ammoniæ, $\frac{1}{2}$ oz.; alcohol, 4 ozs. Mix, and let stand for 14 hours, then add bay rum, 4 ozs.; table salt, 3 drs.; soft water, 3 pts.; essence of bergamot, 1 oz. This promotes the growth of the hair, and also turns gray hair a dark colour.

Pomades, &c.

Castor Oil Pomade.—Castor oil, 630 parts; vaseline, 170 parts; yellow wax, 100 parts. Melt the vaseline and yellow wax together at a gentle heat, add the castor oil, strain, and perfume to fancy.

Cacao Cream.—Cacao butter, 16 ozs.; castor oil, 96 ozs.; essence of bergamot, 6 drs.; essence of lemon, $1\frac{1}{2}$ ozs.; oil of citronella, $1\frac{1}{2}$ drs.; oil of lavender, 4 drs.; Cologne spirit (95 per cent.), 64 ozs. Melt the cacao butter, warm the castor oil, and mix; dissolve the essential oils in the Cologne spirit.* Fill the bottles two-thirds full with the first mixture, and fill balance of bottles with the perfumed spirit, and well shake till cool. This forms an elegant hair-dressing. In very cold weather it becomes quite hard, but a little heat soon renders it fluid.

* So-called Cologne spirit is the first twelve hours' run of a clean still.

Crystalline Cream.—1.—Oil of almonds, 2½ lb. ; spermaceti, ½ lb. ; benzoic acid, 2 drs. ; Allchin's concentrated yellow oil, 1½ ozs. ; essence of lemon, 6 drs. ; essence of bergamot, 4 drs. ; oil of cloves, 20 minims ; oil of cassia, 20 minims ; essential oil of almonds, 15 minims. Melt. Pour into jars, which should be placed in hot water or sand bath till cold.—2.—Oil of almonds, 6 ozs. , castor oil, 6 ozs. ; spermaceti, 3 ozs. Melt and add oil of cinnamon, 10 minims ; oil of nutmeg, 10 minims ; oil of lavender, 1½ drs. ; essence of bergamot, 1½ drs. ; essence of musk, ½ dr. ; essential oil of almonds, 6 minims. Mix.

Cinchona Pomade.—Extract of yellow bark, 3 parts ; tincture of cantharides, 2 parts ; beef marrow, 15 parts ; lard, 15 parts ; yellow wax, 6 parts ; distilled water, 3 parts ; oil of geranium, sufficient ; oil of bergamot, sufficient. Mix.—*Quinine Pomade.*—Instead of say 3 lbs. of extract of yellow bark, use 23 grains of quinine tannate and substitute essence of lemon for oil of bergamot.

Dupuytren's Pomade. — Extract of *Cinchona fusca*, 12 parts ; lemon juice, 6 parts ; tincture of cantharides, 6 parts ; beef marrow, fresh, 96 parts ; essence of bergamot, 1 part. Dissolve the extract of cinchona in the lemon juice and tincture of cantharides and add the other ingredients.

Glycerin and Lime Juice.—Glycerin, 2½ ozs. ; lime juice, 3 ozs. ; concentrated rose water, 2 ozs. ; distilled water, 8½ ozs. Mix.

Glycerin Preparation.—Balsam of peru, 5 parts ; glycerin, 44 parts ; spirits of wine, 25 parts ; essence of violets, sufficient. Mix.

Heliotrope Pomade.—Cacao butter, 600 parts ; vaseline, 400 parts. Melt together at a gentle heat and add, when cold, one part of heliotropin, dissolved in sufficient rectified spirits of wine.

Ice Pomade.—Olive oil, 1250 parts ; spermaceti, 250 parts ; essence of bergamot, 25 parts ; oil of neroli, 5 parts ; oil of cloves, 15 parts ; oil of sweet orange, 25 parts.

"Macassar" Oil.—Olive oil, refined, or oil of almonds, 1 qt. ; otto of roses, ½ dr. ; alcohol, 2½ ozs. Mix. Colour by tying a small portion of alkanet root in a thin muslin bag and allowing it to remain in the oil till sufficiently coloured.

Rose Pomade.—French rose pomade, 1200 parts ; white wax, 100 parts ; spermaceti, 200 parts ; oil of geranium, 2 parts ; essence of bergamot, 1 part ; otto of roses, 1 parts ; alkannin, 1 part.

Startin's Pomade to Prevent the Hair from Falling off.—Vaseline and castor oil, of each ½ oz. ; red oxide of mercury, 6 grains ; strong solution of ammonia, ½ dr. ; oil of rosemary, 20 minims. A French receipt (Hardy's Ointment) for the same purpose is as follows :—Beef fat, 17 drs. ; castor oil, 6 drs. ; gallic acid, 30 grs ; vanilline, sufficient to flavour.

Vaseline Cream.—Vaseline, 24 troy ounces ; white wax, 12 ozs. ; spermaceti, 12 ozs. ; glycerin, 3 fluid ozs. ; oil of rose geranium, 1 fluid drachm. Melt the wax and spermaceti ; add the vaseline, then stir until nearly cold ; add the glycerin and oil, and stir until cold.

Lime Cream.

1.—Oil of almonds, 12 ozs. ; olive oil, 12 ozs. ; lime water, 12 ozs. ; sugar, 1 oz. ; oil of lavender, 45 minims ; essence of lemon, 2 drs.

2.—Oil of almonds and lime water, of each 12 ozs. ; tincture of cantharides, 1 oz. ; glycerin, $\frac{1}{2}$ oz. ; essence of bergamot, 3 drs. ; essence of lemon, 1 dr. Mix.

3.—Oil of almonds, 3 lb. ; lime water, $1\frac{1}{2}$ lb. ; essence of lemon, 4 drs. ; essence of bergamot, 2 drs. ; oil of lavender, 1 dr. ; otto of roses, $\frac{1}{2}$ dr. ; tincture of cantharides, 1 oz. ; glycerin, 4 ozs.

Perfume for Hair Oil.

1.—Essence of lemon, $\frac{1}{2}$ oz. ; essence of bergamot, $1\frac{1}{2}$ ozs. ; oil of rosemary, $\frac{1}{2}$ oz. ; oil of lavender, 2 ozs. ; oil of cloves, 3 drs. ; oil of cinnamon, $\frac{3}{4}$ oz. Mix. Add 6 drs. to each quart of olive oil.

2.—Essence of bergamot, 1 oz. ; oil of rosemary, 1 dr. ; oils of cassia and cloves, of each 5 drops ; oil of rose geranium, 10 drops ; alcohol to make 4 ozs. Mix.

Tonics, Shampoo Washes, &c.

1.—Powdered cantharides, 3 scr. ; Persian extract, 1 oz. ; ammoniated alcohol, 1 oz. ; castor oil, 4 ozs ; alcohol, 18 ozs. Mix.

2.—Powdered cantharides, 20 grs. ; best French brandy, 3 fluid ozs. Mix in a well stoppered bottle and stand in the sun for a week, shaking well from time to time. Apply to the scalp every week with a sponge or soft brush, allowing the lotion to dry in.

3.—Glycerin, 4 ozs. ; alcohol, 2 ozs. ; solution of ammonia, 2 oz. ; tincture of cantharides, 3 drs. ; rose water and distilled water, of each 4 ozs. ; grain musk, 1 gr. Mix.

4.—Glycerin, 4 ozs. ; alcohol, 3 ozs. ; water, 10 ozs. ; tincture of cantharides, 2 drs. ; sulphate of quinine (dissolved in sulphuric acid), 25 grs. ; otto of roses, 2 drops ; oil of neroli, 5 drops ; tincture of cudbear, sufficient to colour. Mix.

5.—(1.) Jaborandi (coarsely powdered), 1 part ; proof spirit, 8 parts ; glycerin or castor oil, 1 part ; perfume, sufficient.—(2.) Glycerin, 2 ozs. ; jaborandi leaves, 4 drs. ; cinchona bark, 1 oz. ; alcohol, 2 ozs. ; bay rum, 2 ozs. ; rose water, 10 ozs. Reduce the jaborandi and cinchona to a moderately fine powder, and exhaust them by percolation with the alcohol, bay rum, and water, mixed together. To the percolate add the glycerin, and filter.

6.—*Erasmus Wilson's Formula.*—Eau de cologne, 2 ozs. ; tincture of cantharides, 2 dr. ; oils of rosemary and lavender, of each 10 drops.

7.—Quillaia bark, 20 parts ; rose water, 120 parts ; eau de Cologne, 20 parts ; spirits of wine, 100 parts ; glycerin, 30 parts. Digest for twenty-four hours, express and filter. The filtrate should make up 250 parts and may be coloured with a little magenta.

8.—Tincture of cinchona, simple, 2 ozs. ; solution of potassa, $\frac{1}{2}$ oz. ; salt of tartar, 2 drs. ; eau de Cologne, 2 ozs. ; distilled water to complete 16 ozs. Apply two or three times a week.

9.—Rose water, 8 ozs. ; spirit of rosemary, 4 ozs. ; pearlash, 1 dr. ; tincture of saffron, 2 drs. ; essence of vanilla, 2 drs. .

10.—Rose water, 1 gall. ; rectified spirits of wine, 1 pint ; essence of ron-deletia, $\frac{1}{2}$ pint ; saffron, $\frac{1}{2}$ dr. ; Pears's transparent soap, $\frac{1}{2}$ oz. Cut the soap fine and boil with the saffron in a quart of the rose water, then add the remainder of the rose water, then the spirit, and finally the perfume. Let the wash stand three days before putting into bottles.

11.—Borax, powdered, 4 drs. ; bay rum, 2 ozs. ; solution of ammonia, 1 oz. ; rose water, 13 ozs. Mix.

Curling Fluid.—1.—Carbonate of potassa, 2 drs. ; water of ammonia, 1 dr. ; glycerin, 4 drs. ; alcohol, 12 drs. ; rose water, 18 fluid ozs. Mix and filter. Apply to the hair in quantity sufficient to moisten it ; the hair, being loosely adjusted, curls on drying. 2.—A weak solution of gum arabic, with a little borax or sugar. Wet the hair with solution before rolling it in twists of paper. No. 1 acts chemically, No. 2 as an ordinary adhesive material.

Shaving Creams.

1.—White soft soap, 4 ozs. ; spermaceti, $\frac{1}{2}$ oz. ; olive oil, $\frac{1}{2}$ oz. Melt together and stir till nearly cold and perfume to taste.

2.—*Crème à la Rose.*—Saponify 12 lbs. of lard with 5 lbs. of solution of caustic potash and 1 lb. of solution of caustic soda, both at 38 deg. Baumé, over a water bath and add, dissolved in a little spirits of wine, essence of bergamot, 1 oz. ; oil of geranium, $\frac{1}{2}$ oz. *Crème d' Amandes Amères.*—Substitute for the oil of geranium, oil of bitter almonds, 1 dr.

INCENSE FOR CHURCHES.

Gum olibanum 9 ozs. ; benzoin, 5 ozs. ; storax, 2 $\frac{1}{2}$ ozs. ; sugar 2 ozs. ; true cascarilla, 1 $\frac{1}{4}$ ozs. ; saltpetre, 3 ozs. Powder, and mix together.

INK.

Logwood Ink.—1. Extract of logwood, 1 lb. ; water, 15 lb. ; dissolve and add alum, 1 oz. ; yellow chromate of potassium, $\frac{1}{2}$ oz.

2.—Best rasped logwood, 10 lb. ; water, 100 lb. ; boil down to 80 lb., when cold, add yellow chromate of potassium, 1 $\frac{1}{2}$ ozs., previously dissolved in water, 5 ozs.

3.—Extract of logwood, 1 part ; water, 50 parts ; dissolve and add potash alum, 2 parts.

4.—Extract of logwood, 1 part ; water, 50 parts ; dissolve and add chloride of tin sufficient to produce a deep violet colour. Instead of chloride of tin, acetate of manganese, or acetate of iron, or other metallic salt is often used. Owing to the unequal composition of the commercial extract of logwood it is

necessary to see that the ink is not overcharged with metallic salts. This is best done by taking a small quantity of the finished product, heating it to boiling point and exposing it afterwards for some time to air and light, when it should not deposit a copious precipitate.

5.—Extract of logwood, 75 parts. ; boiling water, 1400 parts ; dissolve and add alum, 75 parts. ; when dissolved add sulphuric acid, 20 parts, and, with continuous agitation, yellow potassium chromate, 8 parts ; previously dissolved in water (lukewarm), 50 parts. ; then make a solution of ferrous sulphate, 10 parts, in 30 parts of crude hydrochloric acid, and add to the ink, also 10 parts of gum arabic, and dilute with water to 2000 parts. The ink writes with a reddish colour, but on drying is deep black.

6.—An acid is often used for dissolving the precipitate formed by the addition of potassium chromate to extract of logwood. Instead of this a salt of chromium such as the acetate, rendered slightly acid by the addition of some weak acid, such as acetic or boracic acid may be used. The resulting ink contains an excess of chromic oxide which adds to its permanency.

Gall Ink.—1.—Galls, in moderately fine powder, 2 lb. ; copperas, 10½ ozs. ; gum arabic, 10 ozs. ; sugar, ½ oz. ; water sufficient to make 18 pints. Place the galls in an enameled vessel, pour in six pints of boiling water, and macerate two days ; transfer to a glass percolator, in the neck of which is a piece of absorbent cotton, through which allow the liquid portion to drain. Then pack the galls firmly and displace with sufficient water to produce two gallons with that portion of the infusion which first passed. Then dissolve the gum and sugar in two pints of water ; add this and the copperas to the infusion of galls. This, after standing about twelve days, will produce a good black ink. About eight drops of wood creosote should be added to prevent moulding.

2.—Berzelius discovered in 1831 that by treating an infusion of galls with a solution of vanadate of ammonia in place of sulphate of iron, a remarkably good ink was obtained. This ink has the advantage of presenting a great resistance to most reagents and destructive materials. Gum arabic can be dispensed with and the chance of moulding or alteration thus reduced.

Black Ink Powder.—Dried sulphate of iron, 12 oz. ; powdered Aleppo galls, 4 ozs. ; powdered gum acacia, 1 oz. Mix. One ounce makes a pint of ink.

Blue Ink Powder.—Powdered Chinese blue, powdered Prussian blue, of each 12 ozs. ; powdered oxalic acid, 1 lb. ; gum arabic, 6½ ozs. Mix.

Blue-Black Writing Fluid.—Aleppo galls, bruised, 9 ozs. ; cloves, bruised, 2 drs. ; cold water, 80 ozs. ; sulphate of iron, 3 ozs. ; sulphuric acid, 70 minims ; indigo paste, 4 drs. Place the galls and the cloves in a gallon bottle, pour upon them the water and let them macerate, with frequent agitation, for a fortnight. Press and filter through paper into another gallon bottle. Next, put in the sulphate of iron, dissolve it, add the acid, and shake the whole briskly. Lastly, add the indigo paste, mix well, and filter again through paper. Keep the ink in well-corked bottles.

Copying Ink.—1.—Copying ink differs from the above by the substitution in the above formula of one-third glycerin for an equal amount of water. This is done by either evaporating the finished ink, or, still better, by using a quantity of water proportionally smaller, in making the ink and afterwards adding the glycerin.

2.—Add to a concentrated solution of logwood one per cent. of alum and one per cent. of lime water, so as to obtain a permanent precipitate. Then add a few drops of dilute solution of chloride of calcium, until a blue-black colour is obtained. Drop by drop add hydrochloric acid until the colour is changed to a reddish tint. Some gum arabic and half per cent. of glycerin will complete the ink.

3.—Professor Attfield, F.R.S., recommends a copying ink to be made by evaporating ten volumes of ordinary ink to six, then adding four volumes of glycerin; or manufacture ink of nearly double strength and add to any quantity of it an equal volume of glycerin. This ink may be used for copying letters without a press by simply placing the page of writing on a leaf of the letter book and passing the hand firmly over it. The writing paper should neither be excessively porous nor highly glazed. Any excess of ink may be removed by blotting paper in the ordinary manner.

Violet Copying Ink—For blue violet, dissolve methyl 5 B., Hofmann violet, 3 B., or gentiana violet B., in 300 parts of boiling water. For reddish violet, dissolve methyl violet, B. R., in a small quantity of water. If the writing, when dry, has a bronzy appearance, add more water. The addition of a small quantity of sugar improves the ink for copying purposes.

Blue Writing Fluid.—Dissolve soluble Prussian blue in pure water.

Red Ink.—1.—Brazil wood, 2 ozs.; muriate of tin, $\frac{1}{2}$ dr., gum arabic, 1 dr. Boil down in 32 ozs. of water to one half, and strain. 2.—Solution of ammonia, 1 dr.; carmine No. 40, $\frac{1}{2}$ dr.; water, 7 drs.; mucilage gum arabic, $\frac{1}{2}$ dr. Mix in a mortar.

Waterproof Branding Ink.—Shellac, 2 ozs.; borax, 2 ozs.; water, 25 ozs.; gum arabic, 2 ozs.; lampblack, sufficient. Boil the borax and shellac in water till they are dissolved and withdraw from the fire. When the solution has become cold, complete 25 ounces with water, and add lampblack enough to bring the preparation to a suitable consistence. When the ink is to be used with a stencil it must be made thicker than when it is to be applied with a marking brush. For red ink, substitute Venetian red for lampblack; for blue, ultramarine; for green, a mixture of ultramarine and chrome yellow.

Red and Blue Stamping Ink.—*Blue*—Indigo, in fine powder, 10 parts; gum arabic, 4 parts; glycerin, 4 parts; water, 3 parts. Dissolve the gum in the water, mix it with the glycerin, and then triturate it thoroughly, either in a mortar or by means of a slab and muller, with the indigo until a perfectly homogeneous mixture is obtained.—*Red*—This may be prepared in the same

manner, only that some red colouring matter is substituted, such as minium, or carmine, or fuchsine, etc. If the latter, or some other aniline colour is used, the quantity must be very considerably reduced, but the mixture may be thickened by the addition of dextrin.

Aniline Inks for Indiarubber Stamps.—Solid blue, red, violet, or other aniline dye, 16 parts; distilled water, hot, 80 parts; dissolve and add glycerin, 7 parts; simple syrup, 3 parts.

Marking Inks.—1.—Chloride of copper, 1 oz.; distilled water; dissolve and add common salt, $1\frac{1}{4}$ oz.; solution of ammonia, $1\frac{1}{2}$ oz. Mix one part of the above solution with four parts of the following:—Hydrochlorate of aniline, $3\frac{1}{4}$ oz.; distilled water, $2\frac{1}{2}$ oz.; gum arabic solution, $2\frac{1}{2}$ oz. (one part of gum to two of water); glycerin, $1\frac{3}{4}$ oz. The writing requires to be pressed with a hot iron, otherwise it does not develop a full black colour until after exposure to the air for a day or two.

2.—*Puscher's Marking Ink.*—Aniline blue, 1 dr.; alcohol, $\frac{1}{2}$ troy oz.; muriatic acid, 3 ozs.; gum arabic, $1\frac{1}{2}$ drs. Dissolve the aniline in the alcohol and muriatic acid, and add to it the gum arabic dissolved in the water.

3.—Nitrate of silver, 1 oz.; carbonate of soda in crystals, $1\frac{1}{2}$ ozs.; tartaric acid in crystals, 160 grs.; strong solution of ammonia, 2 ozs. or sufficient; litmus, $\frac{1}{2}$ dr., or archil, 6 oz.; white sugar, 6 drs.; gum arabic, 9 drs. Dissolve the nitrate of silver and carbonate of soda separately in distilled water, mix the solutions, collect and wash the precipitate, put it while still moist into a wedgewood or glass mortar, and add the tartaric acid (previously powdered). Having rubbed them together until effervescence has ceased, add strong solution of ammonia in sufficient quantity to dissolve the nitrate of silver. Mix the litmus, sugar, and gum with as much distilled water as will make six ounces of the mixture.—(*Redwood*).—For *Red Marking Ink* use carmine gr. 6 instead of the litmus.

Ink for Writing on Glass.—Sulphate of barium, 3 parts; fluoride of ammonium, 1 part; sulphuric acid to decompose the fluoride of ammonium and make the mixture of a semi-fluid consistence. The ink should be prepared in a leaden dish and kept in a gutta percha or leaden bottle.

Ink for Labelling Tin Canisters, Boxes, &c.—Shellac, 20 parts; borax, 30 parts; water, 300 parts. Make a solution by the continued application of heat, and filter while still warm. Then add the following solution: Nigrosin, 10 parts; tannic acid, 0.3 parts; picric acid, 1 part; ammonia, 15 parts; water, 7 parts.

Permanent Ink for Zinc Labels.—Chloride of platinum, in solution, 2 drs.; vegetable black, 1 dr.; mucilage of gum arabic, 3 drs.; distilled water, sufficient to make 2 ozs.

Sympathetic Inks.—*Brown.*—Bromide of potassium, 1 part; sulphate of copper, 1 part; water, 20 parts. Dissolve. Very careful heating will turn the writing brown.—*Yellowish Green.*—Yellow chromate of potassium, 2

parts ; nitric acid, 2 parts ; common salt, 2 parts ; water, 40 parts. Dissolve. Gentle warming turns the writing a yellowish green.—*Blue*.—Common salt, chloride of cobalt, of each 1 part ; water, 20 parts. Dissolve. Gentle warming turns the writing blue.

Paper for Removing Writing Ink Stains.

Soak thick blotting paper in a concentrated solution of oxalic acid and dry. Laid immediately on a blot it removes every trace of the ink.

"Hectograph" Composition and Inks.

The term "Hectograph" is protected by a patent:—1.—Gelatin, 1 part ; water, 2 parts ; dissolve and add glycerin, 4 parts. Add a few drops of carbolic acid and sufficient whiting or white lead to make the whole milky.—2.—Russian glue, 1 lb. and water, 2 lbs. Put together in a jar and allow it to stand for twelve hours until the water is absorbed. Then add 5 lb. glycerin, put into an enamelled pan, and heat to nearly boiling point, stirring all the while. Pour through muslin into a tray and allow it to set.

Black Ink.—Aniline black, quality 1a, 5 parts ; absolute alcohol, 5 parts ; mucilage of gum arabic, 5 parts ; distilled water, 35 parts. Warm in a Florence flask until entirely dissolved. Let it stand for twenty-four hours and then strain.

Red Ink.—Fuchsine, 2 parts ; alcohol, 1 part ; water, 8 parts. Mix.

Violet Ink.—1. Aniline violet, 1 oz. ; methylated spirit, 1 oz. ; distilled water, 7 ozs. Mix. This ink will give 120 to 150 copies.

2. Methyl violet, 2 parts ; dilute acetic acid, 2 parts ; water, 4 parts. Mix.

To Remove Ink from Hectographs.

Moisten the pad with water, acidulated with a ten per cent. solution of hydrochloric acid and rinse well off.

KOUMISS (ARTIFICIAL).

Cows milk, 1000 parts ; water, 500 parts ; yeast, 20 parts ; honey, 20 parts ; alcohol, 30 parts ; wheat flour, 15 parts ; millet flour, 5 parts. Mix the flour with the milk and water and the yeast and honey into a paste, with sufficient alcohol, adding the rest gradually ; mix the whole together in a strong bottle, leaving a sufficient air space above the liquid, and wiring down the cork. During fermentation the liquid must be kept at a temperature of from 77 deg. F. to 86 deg. F. for forty-eight hours in summer and 24 in winter, shaking it up two or three times. The liquid is then strained through a cloth and bottled off, the corks of the bottles being well wired. The bottles must be kept at a temperature of from 76 deg. F. to 77 deg. F., shaking them frequently, and finally preserving them in a cool place. At the end of four or five days the liquid separates into two layers, which mix on shaking, disengaging numerous bubbles of gas. Prepared thus artificial koumiss has an agreeable taste and odour, and keeps well for several months without alteration.

LABELS FOR STOCK BOTTLES.

Ordinary glazed paper, of a citron-yellow colour, is wiped over with a damp sponge, and then allowed to dry. The ink used for writing the labels is prepared as follows:—Extract of logwood, 3 parts; bichromate potassium, 1 part; water, 30 parts. Dissolve. After standing until it has become clear the liquid is decanted from the sediment, and two parts of gum arabic are added. When the writing has become dry the label is affixed to the receptacle by means of a glue paste, prepared by pouring a boiling solution of carpenter's glue into a cold-prepared paste made from wheat flour and water. When the label has become dry, it is brushed over twice with the same glue paste, the second application being delayed until the first is dry. Finally, the label is varnished over with dammar varnish, containing ten per cent. of Canadian balsam.

LEMON KALI (FIRST QUALITY).

Best white sugar, powdered, 30 lb.; bicarbonate of soda, 6 lb.; tartaric acid, powdered, 7 lb.; gum arabic, powdered, 2 lb.; oil of lemon, 4 ozs.

2.—Bicarbonate of soda, 6 ozs.; tartaric acid, 8 ozs.; white sugar, in coarse powder, 20 ozs.; essence of lemon, 1 dr. Mix. The powders should be well dried before mixing. Keep in well-corked bottle.

LABEL VARNISH.

Gum sandarac, 53 parts; gum mastic, 20 parts; camphor, 1 part; oil of lavender, 8 parts; Venice turpentine, 4 parts; ether, 6 parts; alcohol, 40 parts. The ingredients must be macerated until all are dissolved.

LUBRICATING MIXTURE.

Castor oil, 60 parts; animal fat, 10 parts; vegetable oil, 20 parts (rape or cotton seed oil); grain meal, 20 parts. Boil for half-an-hour.

METALLIC COATINGS, &c.

Bronzing Liquid.—Fuchsin, 10 parts; aniline purple, 5 parts; alcohol, 95 per cent., 100 parts. Apply the heat of a water bath, and when solution has taken place add benzoic acid, 5 parts. Then boil the whole for about five or ten minutes until the greenish colour of the mixture has changed to bronze brown.

Black Colour for Bronze.—A concentrated thin solution of nitrate of silver is mixed with an equal solution of nitrate of copper and well shaken together. The pieces which require colouring are dipped into this solution and left for a short time. When taken out they should be equally heated, till the required black colour makes its appearance.

Lead Coating.—Professor Emerson Reynolds's new process.—Take 248 grains of solid sodic hydrate or an equivalent of other suitable hydrate, dissolve it in 38 gallons of water, add to the liquid

2 63 grains of lead nitrate, or an equivalent of lead salt, with $4\frac{1}{2}$ pints of water, and raise the temperature of the mixture to 194 degrees F. If sufficient lead salt has been added the liquid will remain somewhat turbid after heating, and must then be rapidly strained or filtered through asbestos, glass wool, or other suitable material into a convenient vessel. The filtered liquid is then well mixed with 1550 grains of hot water, containing, in solution, 64 grains of sulpho-urea or thio-carbamide. If the temperature of the mixture be maintained at about 178 deg. F., a deposition of galena in the form of a fine adherent film or layer quickly takes place on any object immersed in or covered with the liquid, provided the object be in a perfectly clean condition, and suitable for the purpose. The deposition is more rapid from hot than from cold solutions. The most convenient solution for deposition on brass is thus prepared: Take a quantity of soda lye, containing $1\frac{1}{2}$ ozs. of real soda, dissolve in this, with the aid of heat, 3 ozs. of tartrate of lead, and just before diluting the solution to one gall. of cold water, add 5 drs. of sulpho-urea, previously dissolved in a small quantity of hot water. Immerse the articles in this bath, and raise the temperature to boiling. When the desired tint is obtained the articles are to be removed, washed, and polished. The above solution can be used for glass or porcelain, hot or cold, if the proportion of alkali be reduced one-third or thereabouts.

Nickel Coating.—Heat to the boiling point a bath of pure granulated tin, tartar, and water, and add a small quantity of pure red-hot oxide of nickel. A portion of the nickel is soon dissolved, as is shown by the green colour assumed by the liquid which stands upon the grains of tin. When the articles of copper or brass are plunged into the bath they become covered in a few minutes with a silvery metallic coating, which consists almost entirely of pure nickel. If a little carbonate or tartrate of cobalt is added to the bath a bluish shade, either light or dark, may be given to the coating, which becomes very brilliant when it is properly polished with chalk or with dry sawdust.

Phosphor-Bronze.—1. First prepare a mixture of 70 to 90 parts of copper, 4 to 13 parts of tin, and 0.5 to 1 part of phosphorus. When the mass is uniformly melted, 5.5 to 16 parts of melted lead are added.

2.—Add to white-hot iron a sufficient quantity of tin or phosphorised tin, with or without the subsequent addition of lead. The finished mixture should not contain more than 2 per cent. of phosphorus or more than 20 per cent of tin.

Platinum Coating.—Chloride of platinum, 1 part; alcohol, 15 parts; ether 50 parts. Solve and rub over the surface to be platinised, the vessel being put away in a drp warm place. The surface, on being rubbed with a cotton, or, still better, a woollen rag, yields a high polish, having the appearance and lustre of steel.

Silver-plating without a Battery.—For articles which have much wear a battery is indispensable, as a thick coat cannot be deposited without it. Good results can, however, be obtained by simple immersion, if enough care is taken to cleanse the articles beforehand, and to use pure ingredients in right proportions. Copper and its alloys, brass, German silver, and most other metals should be first dipped in a solution of caustic potash (P. B. strength), then thoroughly rinsed in fresh water, care being taken not to touch it with the hands or any thing greasy. Pewter, lead, tin, and Britannia metal may be treated with the silvering solution without further preparation. Articles joined with solder containing tin must not be left long in the alkali, or the solder will dissolve and the copper blacken. Copper, brass, and German silver should next be heated and dipped in the dilute sulphuric acid and water. This will not serve for soldered articles. The next dip should be very dilute nitric acid, then a mixture of sulphuric acid, 4 parts; water, 4 parts; nitric acid, 2 parts; hydrochloric acid, 1-32nd part. In each case the volume of the bath should be 30 times that of the article to be cleansed, each dip should last but a short time, and should be followed by thorough and rapid rinsing in fresh water.—The simplest silvering solution is made by mixing into a thin paste 3 parts of soda (washing soda), 1.25 of common salt, and 1 of silver chloride, with sufficient warm water; another mixture may be made with the salt and silver chloride alone. The paste is applied with a rubber until the surface is properly coated, and should then be washed, dried, and if possible varnished with hard copal varnish.—Another solution is made of cream of tartar, 1 part; common salt, 1 part; silver chloride, $\frac{1}{8}$ -part. Dissolved in boiling water in a common kettle with the addition of a little alum. The articles are stirred up in this till properly coated, more paste being added with each batch of articles to be whitened. This bath improves by use. If it does not produce the desired result the following will be found effectual:—Silver nitrate, $1\frac{1}{2}$ oz.; potassium cyanide, 9 oz.; water, $1\frac{1}{2}$ gals. To be used boiling.

Silvering Powder.—1. Chloride of silver, 3 parts; cream of tartar, 20 parts; common salt, 15 parts. Mix. Moisten a portion of the mixture with water, and rub it with a piece of blotting paper upon the metallic object, which must be thoroughly clean. Then rub with a piece of cotton, upon which precipitated chalk has been dusted, wash with water, and polish with a dry cloth.

2.—*Silvering Paste.*—Water, 3 to 5 ozs.; chloride of silver, 7 ozs.; common salt, 15 ozs.; sal ammoniac, $3\frac{3}{4}$ ozs. Mix. Keep in a covered vessel, away from the light. Apply with a cork or brush to the clean metallic (copper) surface, and allow the paste to dry. When rinsed in cold water, the silver presents a fine frosted appearance, the brightness of which may be increased by a few seconds' immersion in dilute sulphuric acid, or solution of potassium cyanide. Should a first silvering not be found sufficiently durable after scratch-brushing, a second or third coat may be applied. This silvering is not so adhering or white on pure copper as

upon a gilt surface. For the reflectors of lanterns, the paste is rubbed upon the reflector with a fine linen pad ; then, with another rag, a thin paste of Spanish white or similar substance is spread over the reflector and left to dry. Rubbing with a fine clean linen rag restores the lustre and whiteness of the silvered surface. The paste may be mixed directly with the whiting and left to dry, or until nearly dry, and then rubbed down.

Silvering Fluid.—Oxide of silver, 160 grs. ; metallic silver, 100 grs. ; nitric acid (pure), 6 drs. ; dissolve. Cyanide of silver, 1 dr. ; carbonate of ammonia, 20 grs. ; distilled water, 10 ozs. Dissolve the ammonia in the water, then add the cyanide of silver and mix with the other solution. For silvering goods the mixed solutions should be put into a glass vessel, placing a small piece of sheet copper, one inch square, in it. When effervescence commences apply with flannel, and finish with a dry leather. A spoon or fork will take ten minutes, a tea-pot half-an-hour. The solution to be kept in a dark glass stoppered bottle and the piece of copper to be washed after each time of using.

White Japan for Reflectors.—A white paint for lamp reflectors, which has a fine porcelain finish and needs no heating, is made as follows : Mix pure zinc white (dry) with sufficient soluble glass (silicate of soda) to be easily applied with a brush. Apply one coat and dry by artificial heat, if convenient ; then apply a second heavy coat and dry either in an oven at from 150 degrees to 200 degrees F. or at ordinary temperature.

SILVERING GLASS.

Reducing Solution.—Distilled water, 12 ozs. ; Rochelle salt, 12 grs. ; nitrate of silver, 16 grs. Dissolve the Rochelle salt in the water and boil. Add, while boiling, the nitrate of silver dissolved in one ounce of water and continue the boiling fifteen minutes more, then add enough water to make up twelve ounces.

Silvering Solution.—Distilled water, 10 ozs. ; nitrate of silver, 1 oz. ; solution of ammonia, sufficient ; alcohol, 1 oz. Dissolve the nitrate of silver in the water ; then add enough ammonia to nearly, but not quite, re-dissolve the brown precipitate at first formed ; lastly add the alcohol and enough distilled water to complete twelve ounces. The solutions should stand and settle for two or three days before being used. The operation is performed as follows : Take equal parts of each solution, mix them thoroughly, and lay the glass, face down, on the top of the mixture contained in a dish a little larger than the glass plate. The glass must previously be carefully cleaned with soda, well rinsed with distilled water, and laid while still wet on the top of the silvering mixture. About two drachms of each solution will silver a plate two inches square.

Paper for Preserving Silver.

Caustic soda, 6 parts, dissolve in water until the hydrometer registers 20 deg. Baumé. To the solution add oxide of zinc, 4 parts, and boil until it is dissolved. Add water sufficient to bring the solution to 10 deg. Baumé. Paper or calico soaked in the solution and dried, will effectually preserve the most highly polished silver articles from the tarnishing action of sulphuretted hydrogen.

MOTH POWDER.

1.—Insect powder, 3 ozs. ; powdered camphor, 3 ozs. ; oil of lavender, 1½ drs. Mix.

2.—Black pepper, camphor, colocynth, sandalwood, white hellebore, of each ½ lb. ; oil of verbena, 10 drs. ; oil of cloves, 1½ drs. Rub to coarse powder.

3.—Cut up pitch papers, such as the roofers use, into slips and place about the rooms under and behind chairs, sofas, &c., in the month of April, and in warm climates earlier.

MOUTH WASHES AND PREPARATIONS FOR CLEANSING THE TEETH, &c.

Cherry Tooth Paste.

1.—Pumice stone, finely powdered, 2 lb. ; precipitated chalk, 1½ lb. ; cochineal, 1 oz. ; spirit of camphor, ½ oz. Well mix with boiling water until it becomes a paste.

2.—Orris root, powdered, 2 ozs. ; precipitated chalk, powdered, 4 ozs. ; areca nuts, subcarbonate of potash, of each 2 drs. ; honey, sufficient ; powdered camphor, 3 drs. ; oil of cloves, 5 drops. Mix.

Tooth Powders.

1.—*Camphor and Chalk.*—Camphor, 2 ozs. ; precipitated chalk, 1 lb. Mix and pass through fine sieve.

2.—*Pomegranate.*—Precipitated chalk, 1 oz. ; powdered bark of pomegranate fruit, ½ oz. ; tincture of myrrh, ½ dr. Mix.

3.—*Quinine.*—Precipitated chalk, 8 ozs. ; gum myrrh, powdered, 1 oz. ; cuttle fish, powdered, 2 ozs. ; orris root, powdered, 3 ozs. ; sulphate of quinine, 10 grs. ; oil of cinnamon, otto of rose, oil of cloves, of each 6 drops.

4.—*Rose.*—Precipitated chalk and orris root, powdered, of each 2 ozs. ; carmine, 2 grs. ; otto of roses, 6 drops ; oil of cloves, 6 drops. Mix and pass through fine sieve.

5.—*Saponaceous.*—Precipitated chalk, 4 lbs. ; orris root, powdered, 1 lb. ; brown Windsor soap (best), ½ lb. ; rectified spirit of wine, 1½ ozs. ; oil of cloves, 4 drs. Mix and pass through fine sieve. This powder should be made some time before it is put into boxes.

6.—*Salicylic Acid.*—Prepared carbonate of lime, 2½ ozs. ; powdered white sugar, 1½ ozs. ; white castile soap, 1½ ozs. ; salicylic acid, 15 grs. ; oil of peppermint, 50 drops ; oil of cinnamon, 10 drops. Mix and pass through fine sieve.

7.—*Rhatany and Myrrh*—Orris root, powdered, 2 ozs. ; borax, 1 oz. ; precipitated chalk, 4 ozs. ; cuttle fish, 4 ozs. ; rhatany root, 2 ozs. : gum myrrh, 1 oz. Mix and pass through fine sieve.

Colouring for Tooth Powder.—A colouring made according to the following formula is sufficient to give a brilliant pink tint to thirteen pounds of tooth powder :—Carmine, 1 oz. ; strong solution of ammonia, 6 fluid ozs. Dissolve and add to a portion of the precipitated chalk in a large mortar using a sufficient quantity to absorb the liquid. Triturate with more of the precipitated chalk until sufficient is added to bring it to the state of powder. Allow to dry, and, when free from the smell of ammonia, mix with the other ingredients of which the dentifrice is composed. By using the carmine as directed above, one ounce will be equal to $1\frac{3}{4}$ ounces if used as a powder.

8.—*Mialhe's Tooth Powder.*—This may be especially recommended when the teeth have been blackened by chalybeates :—Sugar of milk, 1000 parts ; lake, 10 parts ; pure tannin, 15 parts ; oil of mint, oil of aniseed, oil of orange flowers, sufficient of each to impart an agreeable flavour to the composition. Rub the lake with the tannin, and gradually add the sugar of milk, previously powdered and sifted, then mix carefully the essential oils.

Liquid Dentifrices.

1.—*Mialhe's Dentifrice.*—This is especially recommended for those who are troubled with excessive relaxation and sponginess of the gums : Alcohol, 1000 parts ; gum kino, 100 parts ; rhatany root, 100 parts ; tincture of tolu, 2 parts ; tincture of benzoin, 2 parts ; oil of cinnamon, 2 parts ; oil of peppermint, 2 parts ; oil of aniseed, 1 part. Macerate the kino and the rhatany in the alcohol for seven or eight days, and after filtration add the other articles. A teaspoonful of this preparation, mixed in half a goblet of water, should be used to rinse the mouth after the use of the tooth powder (see preceding formula, 5 ozs.

2.—*Sozodont.*—Castile soap, 75 grs. ; glycerin, 75 grains ; alcohol, 1 oz. ; water, 5 drs. ; oil of peppermint, cloves, cinnamon, aniseed, of each sufficient. Mix and filter. 2.—Tincture of soap bark, 2 ozs. ; tincture of myrrh, 1 dr. ; glycerin, $\frac{1}{2}$ oz. ; water, $1\frac{1}{2}$ ozs. ; oil of cloves and wintergreen, of each 10 drops ; tincture of cochineal, sufficient to colour. Mix. Powder to accompany above. Precipitated chalk, orris root, and carbonate of magnesia, of each equal parts.

Quillaya and Glycerin.—1, Soap bark, in coarse powder, $\frac{1}{2}$ oz. ; alcohol, $3\frac{1}{2}$ ozs. ; distilled water, 5 ozs. ; macerate for ten days, filter, and then add cochineal, 8 grs, dissolved in peppermint water, 4 ozs. ; also oil of wintergreen, 30 minims, rubbed up with glycerin, 2 ozs. ; and finally add sufficient distilled water to make the whole measure 24 ozs.

2.—Soap bark, ground, 4 ozs. ; glycerin, 3 ozs. ; alcohol (diluted), sufficient for 2 pints ; oil of wintergreen, oil of peppermint, of each 20 drops. Macerate the soap bark in the mixture of glycerin and diluted alcohol for three or four days, and filter through a little magnesia previously triturated with the volatile oils.

3.—Glycerol of myrrh and borax, 2 ozs.; decoction of quillaia (2 ozs. to pint), 4 ozs.; otto of rose, 4 drops; oil of cloves, 6 drops; oil of orange peel, 6 drops. Mix and filter.

The glycerol of myrrh and borax is made as follows: Myrrh (in coarse powder), 1oz.; powdered borax, $1\frac{1}{2}$ ozs.; glycerin, water, of each 3 fluid oz. Mix the borax and myrrh together, then add the other ingredients and boil in a flask for ten minutes; strain through muslin and add enough water to make the mixture up to six fluid ounces; when cold filter through cotton or paper.

Antiseptic Mouth Washes.

1.—Tartrate of quinoline, (chinoline) 3 parts; oil of peppermint, 2 parts; alcohol, 40 parts; distilled water, 280 parts. A teaspoonful to a wineglassful of water.

2.—Borax, 15 parts; thymol, 0.2 part; water, 1000 parts. Mix.

3.—Borax, 15 parts; oil of eucalyptus, 2 parts; carbonate of magnesia, 4 parts; water, 1000 parts. Mix. Rub the oil with the magnesia, add the water gradually, having dissolved the borax in it, then filter.

4. Tincture of myrrh, compound tincture of cinnamon, of each 3 ozs.; compound tinctures of benzoin and cinchona, of each $1\frac{1}{2}$ ozs.; powdered gum arabic, $2\frac{1}{4}$ ozs.; cinnamon water, 18 ozs. Mix.

Solution of Camphor in Eau de Cologne.—Camphor, 4 ozs.; eau de Cologne, 16 ozs. Dissolve.

Solution of Myrrh in Eau de Cologne.—Gum myrrh, 6 ozs.; eau de Cologne, 48 ozs. Dissolve.

Tincture of Myrrh and Borax.—Rectified spirit of wine, 7 lb.; essence of bergamot, 1 oz.; oil of neroli, 1 dr.; essence of lemon, 2 drs.; oil of orange peel, 1 dr.; distilled water, 1 lb.; gum myrrh, 8 ozs.; solution of borax, 1 lb.; syrup of red roses, 1 lb.; rhatany root, 2 ozs.

Tincture of Myrrh and Borax in Eau de Cologne.—1. Gum myrrh, Tky, 9 drs.; rhatany root, 6 drs.; rectified spirit of wine, 12 ozs. Reduce the myrrh to coarse powder and macerate for seven days, frequently shaking; then add borax, 6 drs.; boiling water, 6 ozs. Dissolve and filter, then add essence of lemon, 1 dr.; essence of bergamot, 1 dr.; oil of neroli, 35 minims; oil of rosemary, 35 minims. Mix.

2.—Borax, 2 drs.; glycerin, 2 drs.; tincture of myrrh, 2 ozs.; eau de Cologne, sufficient to make 4 ozs. Dissolve and filter.

These washes should be held in the mouth at least a minute, forcing them constantly in and out through the spaces between the teeth, to bring the fluid in contact with the points of decay, and washing out the débris collected about the necks of the teeth and the spaces between them.

PASTE AND MUCILAGE FOR PHARMACEUTICAL USE.

Mucilage.—1. Gum arabic or dextrin, 8 ozs.; water, sufficient; sulphate of cinchonia, 24 grs.; oil of cloves, 3 drops; glycerin, 4 drs.; alcohol, 1 dr.

Dissolve the gum or dextrin, in enough water to form a mucilage of proper thickness ; add to it the glycerin, and, finally, the oil of cloves and cinchonia sulphate dissolved in the alcohol.—2. Dissolve, by the aid of heat, 2 ozs. of dextrin in a mixture of 1 oz. of acetic acid and 5 ozs. of water, and when solution is effected, and the mucilage has cooled, add 1 oz. of alcohol.

Flour Paste.—1. Flour, 4 ozs. ; water, 1 pint ; nitric acid, 40 minims ; oil of cloves, 5 minims ; carbolic acid, 5 minims. Thoroughly mix the flour and water, strain through a sieve, add the nitric acid, apply heat until thoroughly cooked, and when nearly cold add the oil of cloves and carbolic acid. In dry climates the addition of about 5 per cent. of glycerin prevents it from drying up too soon in the mucilage-pot when used on the prescription counter. — 2. Take one table-spoonful of flour, mix with 10 ozs. of water, add 2 drs. of acetic acid, and 2 drops of carbolic acid, boil until of the consistence of syrup.

Waterproof Oil Paste.—Rectified turpentine, 1 pint ; India-rubber, as much as it will dissolve ; carriers' oil 1 pint ; mutton tallow, 6 lbs. ; lamp-black, 2 ozs.

CHEMICAL FOOD FOR PLANTS.

Sulphate of ammonia, 4 parts ; nitrate of potash, 2 parts ; sugar, 1 part. About 40 or 50 grs. of this powder should be added to a gallon of water and applied to the plants once or twice a week.

Fertilising Mixture for Lawns.

Nitrate of soda, 80 lbs. ; superphosphate of lime, 100 lbs. ; rectified guano, 200 lbs. ; gypsum, 120 lbs. Mix thoroughly. This amount is sufficient for one acre and should be distributed evenly to the grass once a year or twice on poor soils. This mixture will produce excellent results if no animal manure is applied and the lawn is cut once a week.

LIQUID FOR DESTRUCTION OF PARASITES ON PLANTS.

Boracic acid, 10 parts ; salicylic acid, 5 parts ; rectified spirit, 20 parts ; water, 200 parts. The liquid is applied to the plants by means of a spray producer.

PENCILS TO WRITE ON GLASS, PORCELAIN, METAL, &c.

Black.—10 parts of the finest lampblack, 40 parts of white wax, and 10 parts of tallow.

White.—40 parts of Kremser-white, 20 parts of white wax, and 10 parts of tallow.

Light-Blue.—10 parts of Prussian blue, 20 parts of white wax, and 10 parts of tallow.

Dark-Blue.—15 parts of Prussian blue, 5 parts of white wax, and 10 parts of tallow.

Yellow.—10 parts of chrome yellow, 20 parts of white wax, and 10 parts of tallow. The colour is mixed with the body of wax and tallow while warm, triturated, exposed to air for drying so that the mass can be pressed by means of a hydraulic press into round pencils in the same way as lead pencils are formed. The pencils are dried after pressing by exposing them to the air until they have the proper consistence, and are then glued into wood.

PERFUMES FOR THE HANDKERCHIEF, SACHET, &C.

Eau de Cologne.

The following formulæ make a pleasant perfume resembling the genuine eau de Cologne: 1. Essence of lemon, 2½ drs.; essence of bergamot, 2 drs.; oil of cedar, 1 dr.; oil of rosemary, ½ dr.; oil of neroli, 1 dr.; benzoic acid and rectified spirit of wine, 2 pints. Digest for seven days and filter.

2. Essence of lemon, 80 minims; essential oil of orange, 30 minims; essence of bergamot, 1½ dr.; benzoic acid, 10 grs.; oil of neroli and oil of rosemary, of each 40 minims; oil of origanum, 10 minims; rectified spirit of wine, 18 ozs.; rose water, 6 ozs. Mix.

3.—Oil of lavender flowers, 4 drs.; oil of rosemary, 2 drs.; oil of neroli bigarade, 10 drs.; oil of petitgrain, 10 drs.; oil of orange peel, 20 drs.; oil rose geranium, 4 drs.; essence of bergamot, 20 drs.; essence of lemon peel, 10 drs.; tincture of styrax, 16 drs.; Cologne spirits,* 26 pints; orange flower water, 6 pints. Yield 4 gallons. Avoirdupois weight to be used for the oils. Mix the oils with the alcohol, and allow the mixture to remain for twenty-four hours, then add gradually the orange flower water.

4.—Oil of neroli, 5 drs. 20 minims; oil of rosemary flowers, 1 dr. 20 minims; essence of bergamot, 1 oz.; pure alcohol, 6 pints; water, 2 pints.

5.—Oil of patchouli, 1 dr.; oil of yellow santal, 4 drs.; oil of Canadian snake root, 4 drs.; oil of verbena, ¼ dr.; essence of lemon, 10 minims; otto of rose, 24 minims; oil of rose geranium, 10 minims; tincture civet, 5 drs.; Cologne spirit, or second washings of jasmin or tuberose pomade, 43 ozs.

6.—Oil of melissa, 1 dr.; oil of rosemary, 1½ drs.; oil of neroli, 2 drs.; tincture of ambergris and musk, 3 drs.; essence of lemon, 8 drs.; essence of bergamot, 12 drs.; rectified spirit of wine (90 per cent.), 156 ozs.; Distil over 132 ozs., and add otto of rose 1 dr., acetic ether, 1½ drs.

Antiseptic Cologne.

Cologne, 8 ozs.; chloral hydrate, 2 drs.; quinine (alkaloid), 10 grs.; carbolic acid (pure), 30 grs.; oil of lavender. 20 drops. Mix.

Ess Bouquet Cologne.

Essence of bergamot, 8 drs.; essence of lemon, 2 drs.; otto of rose, 3 drs.; essence of orris root, 8 ozs.; essence of musk, 2 ozs.; Cologne spirits, 8 pints; rose water, 1 pint. Mix.

* So-called Cologne spirit is the first twelve hours' run of a clean still.

Ylang-Ylang Cologne.

Oil of ylang-ylang, 2 drs.; oil of neroli, $\frac{1}{2}$ dr.; otto of roses, 1 dr.; extract of vanilla beans, 2 ozs.; tincture of tolu, 8 ozs.; Cologne spirits, 1 gall.; rose water, 1 pint. Mix, and after standing a few days, filter through carbonate of magnesia.

Essence of Ambergris.

Macerate 3 ozs. of ambergris with 1 gal. of Cologne spirits for one month, frequently shaking. Then filter.

Elder Flower Water.

Elder flowers, 5 lbs.; water, 2 gals. or more. Let 1 gal. distil.

Ess. Bouquet.

Extract marechal, 8 ozs.; extract jasmin, 8 ozs.; extract of violet, 4 ozs.; extract of millefleur, 4 ozs.; infusion of sandalwood,^o 4 ozs.; essence of musk, 2 ozs.; essence of bergamot, $\frac{1}{2}$ oz.; otto of roses, 15 drops; oil of neroli, 10 drops; rectified spirit of wine, 12 ozs. Mix and digest for fourteen days.

English Bouquet.

Oil of lavender (English), 1 oz.; essence of bergamot and essence of lemon, of each $\frac{1}{2}$ oz.; essence of musk, 4 ozs.; oils of cloves, nutmeg, rosemary and origanum, of each 20 drops; oil of cinnamon, 10 drops; otto of roses, 1 dr.; essences of tonquin and ambergris, of each 1 oz.; rectified spirit of wine, 2 $\frac{1}{2}$ pints; water, 10 ozs. Mix.

A Fragrant Perfume.

Oil of verbena, 2 drs.; oil of lavender (English), 140 minims; oil of cloves, 1 dr.; oil of neroli, 20 minims; oil of orange, 1 $\frac{1}{2}$ drs.; essence of bergamot, 1 $\frac{1}{2}$ drs.; essence of millefleurs, 3 drs.; essence of ambergris, 1 $\frac{1}{2}$ drs.; otto of roses, 15 minims; rectified spirit of wine, sufficient to make 5 ozs.

Essence of Musk.

1.—Concentrated extract of jasmine, $\frac{1}{2}$ gall.; tincture of balsam of tolu, 1 oz.; otto of roses, 15 drops; tincture of musk, 12 ozs. Mix.

2.—Musk (grain), 12 grs.; carbonate of potash, 6 grs.; oil of lavender, 6 drops; rectified spirit of wine, 1 oz.

Essence of Rondeletia.

Essence of ambergris, 2 $\frac{1}{2}$ ozs.; essence of vanilla, 2 $\frac{1}{2}$ ozs.; oil of lavender, 11 drs.; otto of roses, 1 dr.; essence of musk, 2 $\frac{1}{2}$ ozs.; oil of bergamot 5 drs.; oil of cloves, 6 drs.; alcohol, 4 pints.

Essence of Tea Rose.

Otto of roses, 2 drs.; essence of patchouli, 2 drs.; rectified spirit of wine, 12 ozs. Mix.

*Infusion of santal:—Santal flowers, 4 ozs.; rectified spirit of wine, 2 pints; distilled water, 8 ozs. Digest for seven days.

Essence Volatile.

Otto of roses, 4 drops ; oil of rhodium, 3 drops ; oil of cloves, $\frac{1}{2}$ dr. ; oil of lavender (French), 2 drs. ; oil of cinnamon, 4 drops ; essence of bergamot, $\frac{1}{2}$ oz. ; essence of ambergris, 2 drs. ; rectified spirit of wine, 6 drs. Mix.

Essence of Ylang-Ylang.

Best oil of ylang-ylang, 10 drops ; oil of rose, 2 drops ; oil of orange flowers, 10 drops ; tincture of musk, 25 drops ; spirit of jasmine, 16 drs. ; orange-flower water, 2 drs.

Allchin's Volatile Essence.

Concentrated ammonia, 1 pint ; oil of bergamot, 2 fl. drs. ; oil of cloves, 1 fl. dr. ; essence of musk, 4 fl. drs. ; otto of rose, 10 drops ; oil of cinamon, 5 drops. Mix, and keep closely stoppered when not in use.

Lavender Water.

1.—Oil of lavender (English), $1\frac{1}{2}$ ozs. ; oil of cinnamon, 6 drops ; oil of pimento, 12 drops ; otto of roses, 6 drops ; essence of bergamot, 3 drs. ; rectified spirit of wine, 3 lbs.

2.—Oil of lavender (English) 280 minims ; essence of bergamot, 1 dr. ; essence of musk, 2 drs ; oil of cloves, oil of nutmegs, oil of rhodium, of each 3 drops ; essence ambergris, 2 drs. ; rectified spirit of wine, 24 ozs. ; distilled water, 7. ozs. ; sweet spirit of nitre, $1\frac{1}{2}$ drs. Mix.

3.—Oil of lavender (English), 6 drs. ; essence of bergamot, $1\frac{1}{2}$ drs. ; essence of lemon, oil of nutmegs, oil of cloves, of each $\frac{1}{2}$ dr ; essence of musk, 2 drs. ; essence of ambergris, 2 drs. ; otto of roses, 10 drops ; rectified spirit of wine, 15 ozs. ; orange flower water, 4 ozs. Mix.

4.—Oil of lavender (English), 1 dr ; essence of ambergris, 10 drops ; essence of bergamot, 20 drops ; essence of musk, 20 drops ; rectified spirit of wine, 10 ozs. Mix.

5.—Oil of lavender, 3 ozs. ; grain musk, $\frac{1}{2}$ dr. ; rectified spirit of wine, 4 pints. Mix.

6.—Oil of lavender (English), $\frac{1}{2}$ oz. ; essence of bergamot, 3 ozs. ; tincture of musk, 6 drs. ; oil of cloves, 1 dr. ; rose water, 12 ozs. ; rectified spirit of wine, 6 pints ; Mix. Cost price about 3s. per pint,

7.—Oil of lavender (English), 2 drs. ; essence of ambergris, 1 dr. ; grain musk, 1 gr. ; rectified spirit of wine, 16 ozs. Mix.

Lily of the Valley.

Essence of jasmin, 1 oz. ; orange flower essence, 1 oz. ; acacia essence, 2 ozs. ; tuberose essence, 4 ozs. ; oil of bitter almonds, 1 drop ; cologne spirits, 4 ozs. Mix.

Extract of Pond Lily.

Extract of cassia, 8 ozs. ; tincture of vanilla 2 ozs. ; tincture of orris, 2 ozs ; oil of bergamot, 2 drs ; oil of neroli, 1 dr. ; oil of bitter almonds, 10 minims ; otto of roses, 10 minims ; oil of cloves, 5 minims ; cologne spirit 4 ozs ; orange flower water, 2 ozs.

Mr. Robert H. Cowdrey published a short time since his private formulæ for perfumes. In doing so he stated that during the last five years he had not found it necessary to purchase an ounce of bottled or bulk extracts from outside sources. He does not claim the entire originality of the processes or combinations but gives his own with those he has selected from other writers, among them Piesse and Lubin. Of course some of the perfumes command a larger sale than others, but we give the whole of Mr. Cowdrey's formulæ, and pharmacists can choose those they think best calculated to command a sale.

The finished perfumes are termed extracts—essences, spirits, and tinctures being employed in their preparation.

Essence.

The essences are the first washings of the solid perfumes known as French pomades, which are obtained by the maceration or *enfleurage* processes.

To each pound of "Chiris," No. 24 pomade, Mr. Cowdrey adds 16 ounces of alcohol, or to "Chiris," No. 30 pomade, 20 ounces alcohol. Place both in a wide mounted jar or can, and with the hand thoroughly mix, set aside, keeping the container tightly covered, in four or five days again thoroughly mix, and for a fortnight or longer this should be done each four or five days. Then pour off the clear liquid and press from the pomade as much as possible of the remainder. Then add to the pomade the same amount of alcohol and macerate in the same way as before. Strain out, and of the second washings mix enough to make the first washings measure, 16 ozs. for No. 24 pomade and 20 ozs. if No. 30 pomade has been used. This, which is known as first washings, must now be thoroughly chilled in order to congeal the lard, which can then be separated by filtering, and this being done, the liquid is finished and ready for use.

Spirit.

This denotes an alcoholic solution of an essential oil. Those employed by Mr. Cowdrey are as follows:—

Almond Spirit.—Essential oil of almonds, 40 minims; alcohol, 8 ozs.

Clove Spirit.—Oil of Cloves, 20 minims; alcohol, 4 ozs.

Orange Flower Spirit.—Oil of orange flowers, 40 minims; alcohol, 8 ozs.

Rose Spirit.—Otto of roses, 50 minims; oil of rose geranium, 40 minims; alcohol, 8 ozs.

Vetivert Spirit.—Vetivert otto, 30 minims; alcohol, 4 ozs.

Ylang-Ylang Spirit.—Ylang-ylang otto, 80 minims; alcohol, 8 ozs.

Tincture.

Tincture denotes a solution of the drug it represents, containing the portion which is soluble in the liquid.

Ambergris Tincture.—Ambergris (grey), 30 grains; orris root, powdered, 1 dr.; alcohol, 8 ozs. Beat the ambergris with the orris root to a powder, then add the alcohol and macerate for thirty days, with occasional agitation and filter.

Benzoin Tincture.—Benzoin, 2 ozs. ; alcohol, 1 pint.

Civet Tincture.—Civet, 30 grains ; orris root, powdered, 1 dr. ; alcohol, 8 ozs. Triturate the civet with the orris root until thoroughly mixed, then add the alcohol and macerate for thirty days, with occasional agitation, and filter.

Musk Tincture.—Tonquin grain musk, 1 dr. ; hot water, 4 drs. ; alcohol, 1 pint. Digest the musk in the hot water for three or four hours, then add the alcohol, and macerate for thirty days with occasional agitation and filter.

Orris Tincture.—Orris root, powdered, 2 ozs. ; alcohol, 4 ozs. Macerate the orris root for seven days and filter, then percolate the orris root with alcohol sufficient to make the measure up to four fluid ounces,

Vanilla Tincture.—Vanilla beans, 6 troy drs. ; alcohol, 1 pint. Beat the vanilla to coarse powder ; macerate with gentle heat for four hours and filter ; while macerating keep a wet towel over the mouth of the bottle, using a water bath.

Extracts.

Bridal Bouquet.—Vanilla tincture, 2 drs. ; musk tincture, benzoin tincture, orris tincture, of each, 1 dr. ; cassia essence, 4 ozs. ; tuberose essence, jasmin essence, of each 2 ozs. ; essence of bergamot, 16 minims ; oil of orange flower, 6 minims. Mix.

Ess Bouquet.—Rose spirit, 2 ozs. ; ambergris tincture, 2 drs. ; orris tincture, 1 oz. ; essence of bergamot, 1 dr. ; essence of lemon, 15 minims. Mix.

Floral Bouquet.—Musk tincture, 2 ozs. ; orris tincture, 6 drs. ; tonka tincture, 6 drs. ; vanilla tincture, 6 drs. ; ambergris tincture, 1 oz. ; rose spirit, 4 ozs. Mix.

Princess Bouquet.—Oil of cloves, essence of bergamot, of each $\frac{1}{2}$ dr. ; oil of lavender (English), 1 dr. ; musk tincture, vanilla tincture, ambergris tincture, of each, 2 drs. ; rose spirit, 10 drs. ; alcohol, 8 ozs. Mix.

Clove Pink Extract.—Clove spirit, 2 drs. ; vanilla tincture, $\frac{1}{2}$ oz. ; violet essence, $\frac{1}{2}$ oz. ; orange flower spirit, 1 oz. ; rose spirit, 2 ozs.

Frangipanni Extract.—Tuberose essence, 1 oz. ; vetivert spirit, $\frac{1}{2}$ oz. ; oil of sandalwood, 15 minims ; otto of roses, 15 minims ; oil of orange flower, 15 minims ; alcohol, $\frac{1}{2}$ oz. ; musk tincture, 2 ozs. ; orris tincture, 1 oz. ; orange flower essence, 1 oz. Mix.

New Mown Hay Extract.—Moss rose extract, 1 oz. ; benzoin tincture, 1 oz. ; tonka tincture, 4 ozs. ; musk tincture, 1 oz. ; oil of rose geranium, 40 minims ; essence of bergamot, 40 minims ; alcohol, 1 oz. Mix.

Heliotrope Extract.—Orange flower essence, 1 oz. ; rose spirit, 1 oz. ; vetivert spirit, 2 ozs. ; vanilla tincture, 1 oz. ; orris tincture, 2 ozs. ; tonka tincture, 1 oz. ; orange flower spirit, 1 oz. ; ambergris tincture, 4 drs. ; oil of sandalwood, 10 minims ; oil of cloves, 4 minims. Mix.

Honeysuckle Extract.—Patchouli extract, 3 drs. ; benzoin tincture, rose essence, clove spirit, of each $\frac{1}{2}$ oz. ; civet tincture, orange flower spirit, of each 1 oz. ; jasmin essence, 4 oz. ; vanilla tincture, 1 oz. Mix.

Jasmin Extract.—Jasmin essence, 4 ozs.; vanilla tincture, $\frac{1}{2}$ oz.; ambergris tincture, 2 drs. Mix.

Jockey Club Extract.—Tuberose essence, 2 ozs.; rose spirit, 2 ozs.; rose essence, 2 ozs.; ambergris tincture, $1\frac{1}{2}$ ozs.; civet tincture, 2 drs.; musk tincture, 2 drs.; essence of bergamot, 30 minims; oil of cloves, 10 minims.

Musk Extract.—Musk tincture, 2 ozs.; civet tincture, 2 ozs.; otto of roses, 10 minims; alcohol, 1 oz. Mix.

Patchouli Extract.—Patchouli otto, 2 drs.; otto of roses, 20 minims; alcohol, 15 ozs.

Rondeletia.—Oil of lavender (English), 1 dr.; oil of cloves, 15 minims; essence of bergamot, 30 minims; musk tincture, 2 drs.; vanilla tincture, 2 drs.; ambergris tincture, 2 drs.; rose spirit, $1\frac{1}{2}$ ozs.; alcohol, 8 ozs. Mix.

Moss Rose Extract.—Rose spirit, 3 ozs.; orange flower essence, 1 oz.; ambergris tincture, $\frac{1}{2}$ oz.; musk tincture, 2 drs. Mix.

White Rose Extract.—Rose spirit, 4 ozs.; violet essence, 2 ozs.; jasmin essence, 2 ozs.; patchouli extract, $\frac{1}{2}$ oz. Mix.

Sandalwood Extract.—Oil of sandalwood, 3 drs.; otto of roses, 20 minims; alcohol, 8 ozs. Mix.

Spring Flowers Extract.—Rose essence, 2 ozs.; tuberose essence, 2 ozs.; rose spirit, 2 ozs.; musk tincture, $\frac{1}{2}$ oz.; ambergris tincture, $1\frac{1}{2}$ ozs.; oil of cloves, 10 minims; essence of bergamot, $\frac{1}{2}$ dr. Mix.

Tuberose Extract.—Tuberose essence, 4 ozs.; orris tincture, ambergris tincture, of each $\frac{1}{2}$ oz. Mix.

Verbena Extract.—Oil of verbena (true), 1 dr.; essence of lemon, 1 dr.; alcohol, 8 ozs. Mix.

Violet Extract.—Violet essence, 4 ozs.; cassia essence, 1 oz.; rose essence, 3 drs.; orris tincture, 1 oz.; ambergris tincture, 2 drs.; civet tincture, 2 drs.; almond spirit, 20 minims. Mix.

West End.—Rose spirit, 3 ozs.; benzoin tincture, musk tincture, of each 1 oz.; verbena extract, civet tincture, of each $\frac{1}{2}$ oz.; oil of sandalwood, 10 minims. Mix.

Ylang-Ylang Extract.—Ylang-ylang spirit, 8 ozs.; jasmin essence, 8 oz. Mix.

Green Colour for Perfumery.—Take the fresh leaves of either plantain or spinach, contuse them in a wooden mortar with a little water, and press the juice out; repeat the operation once or twice, or as long as the plant yields a green liquid. Collect the expressed liquors, pour them on a filter or muslin strainer, wash with cold water, and dry the precipitate at a gentle heat. This mainly consists of chlorophyll, which readily dissolves in fats and oils, and in alcoholic liquids, imparting to them a fine green colour which is quite harmless, though not very fast in the sunshine.

PERFUMING PROGRAMMES AND ALMANACS.

1.—Print on absorbent paper and lay in sachet powder or sprinkle with spirit of lavender or other perfume.

2.—Steep chamois leather for six hours in a mixture of equal parts of sandal otto, oil of rose geranium, and saturated tincture of benzoin. Press thoroughly and allow the leather to dry for several weeks, in fact, till it gives no greasy stain when well rubbed with it. It may be rendered still more effective if it is further dressed with a paste of musk orris and tragacanth mucilage. Skins so prepared are practically inexhaustible.

3.—Sprinkle sheets of blotting paper with the perfume desired; then put them under a weight until they become dry. When dry, put programmes, note-paper, envelopés, &c., between the sheets, and place them under a weight for a few hours. The blotting-sheets may be utilised again, and can be made to retain their perfume for a long time by keeping them free from exposure to air.

SACHET POWDERS.

Heliotrops. Coarsely ground orris root, 200 parts; coumarin, 0.75 parts; vanillin, 0.5 parts; musk, 0.25 parts; essential oil of almonds, otto of roses, of each 1 drop. The coumarin and vanillin are dissolved in sufficient spirits of wine and the otto and essential oil of almonds added. The orris root is sprinkled with this mixture and the musk thoroughly incorporated with it.

Ess. Bouquet.—Orris root, powdered, 1 lb.; musk, 10 grains; otto of roses, 2 drs.; essence of lemon, 1 dr.; essence of bergamot, 4 drs. Mix well and pass through a sieve.

Violet.—Black currant leaves, 1 lb.; cassia buds, 1 lb.; rose leaves, 1 lb.; orris root powder, 2 lb.; essential oil of almonds, $\frac{1}{4}$ dr.; grain musk, 1 dr.; gum benzoin, in powder, $\frac{1}{2}$ lb. Mix well and pass through a sieve.

SKIN SOFTENERS.

Camphor Balls.—White wax, 4 ozs.; powdered camphor, 2 ozs.; spermaceti, 4 ozs.; kidney mutton suet, 4 ozs.; oil of cajeput, 2 drs. Melt the white wax, spermaceti, and suet in a water bath, then add the camphor, dissolve and add oil of cajeput, volatile essence, otto of roses, of each 4 drops; oil of rhodium, 3 drops; oil of cloves, $\frac{1}{2}$ dr.; oil of lavender, 2 drs.; oil of cinnamon, 4 drops; essence of bergamot, $\frac{1}{2}$ oz.; essence of ambergris, 2 drs.; rectified spirit of wine, 6 ozs. Mix.

Moulds for camphor ice, cosmetique, &c., are recommended by Mr. R. F. Fairthorne to be made as follows:—Cut off two or three pieces of glass tubing, each 12 inches and $\frac{3}{4}$ of an inch in diameter, and close one end of each piece with a cork. When used these moulds should be placed in ice water and the melted material poured into them. When solid the material can with slight pressure be pushed out of the tube, cut into convenient sized pieces, wrapped in wax paper or tin foil and covered with coloured paper. A tube twelve inches long will make four sticks of the ordinary size.

Camphor Cream.—White wax, 4 drs. ; spermaceti, 3 drs. ; camphor, 2 drs. ; oil of almonds, 3 ozs. Mix.

Substitute for Camphor Ice.—Pure bay rum, glycerin, of each 1 part ; quince seed jelly*, 2 parts. Mix. A few drops of otto of roses or any other perfume may be added to the bay rum before mixing. If diluted with rain water the above forms an excellent dressing for the hair.

Cold Cream.

1.—White wax, spermaceti, of each, $1\frac{1}{2}$ oz. ; oil of almonds (pale), 12 ozs. ; distilled water, 6 ozs. ; liquor potassa, 12 dops ; otto of roses, 30 drops. Mix.

2.—Oil of almonds (pale), 4 ozs. ; white wax, 1 ox. ; spermaceti, $\frac{1}{2}$ oz. ; otto of roses, 20 drops ; distilled water, 3 ozs. ; powdered borax, 20 grains. Mix.

3.—Nut oil, $\frac{1}{2}$ lb. avoirdupois ; spermaceti, 3 ozs. ; white wax, $1\frac{3}{4}$ ozs. ; rose water, $\frac{1}{2}$ oz. ; otto of roses, 18 drops. If a very white cold cream is desired, the addition of 25 grains of borax will produce it.

4.—*Vaseline Cold Cream*—White vaseline, 8 ozs. ; white wax, 1 oz. ; spermaceti, 2 drs. Melt with a gentle heat, and when nearly cold add borax, 40 grs. ; water, $4\frac{1}{2}$ ozs. ; otto of roses, 15 minims. The solution of borax should be lukewarm, and the whole gently stirred for a few seconds, but not thoroughly beaten, and poured into pots.—*W. H. Symons.*

5.—White vaseline, 40 parts ; white wax, 8 parts ; rose water 15 parts. Mix.

Solidified Glycerin or Glycerin Jelly.

1. French gelatin, 120 grains ; glycerin, $1\frac{1}{2}$ fl. ozs. ; water, $\frac{1}{2}$ fl. ozs. Cut up the gelatin in small pieces, and, having added it to the water in a wide mouthed vial, melt it by means of a water bath, then add the glycerin, which must be warmed ; shake the mixture, pour into moulds, and keep in a cool place until solid. It can then be taken out and wrapped in either tin foil or waxed paper. This makes a clear, elegant, ice-like preparation. For toilet purposes a drop of otto of roses may be added while the ingredients are still warm. The skin should be moistened with water before it is applied.

2. French gelatin, 100 grains ; starch, 60 grains ; glycerin, 12 fl. drs. ; water, 4 fl. drs. Add the gelatin to the water and proceed as in the above recipe. Rub up the starch with the glycerin, and having heated the mixture on a sand bath in a capsule, with constant stirring, until it becomes translucent through the starch dissolving, add the solution of gelatin to it and pour into moulds. It can be perfumed and moulded of a cylindrical form by pouring it into wide glass tubes closed at the bottom with corks. In order to remove it from them, take out the cork, and, having warmed the tube by pouring a little hot water over it blow through the tube, when the solidified glycerin will fall out. This is placed on a sheet of glass, and kept cool until the outside has become solid.

* Quince seed, 2 drs. ; distilled water, 2 pints. Boil down to one pint, filter while hot and allow to cool.

Glycerin Jelly.

1. Isinglass, 1 dr. ; boiling water, 4 ozs. Dissolve and add glycerin, 1 oz. ; otto of roses, 6 minims.
2. Gelatin, water, glycerin, of each 3 ozs. Dissolve the gelatin in the rose water by the aid of heat, then add the glycerin. Strain while warm, and then perfume with otto of roses.
3. English honey, 3 drs. ; soft soap, 1 dr. ; distilled water, 30 minims ; oil of sweet almonds, $2\frac{1}{2}$ ozs. ; olive oil, $2\frac{1}{2}$ ozs. ; pure glycerin, $\frac{1}{2}$ oz. ; otto of roses, sufficient. Mix.
4. Curd soap, $2\frac{1}{2}$ ozs. ; distilled water, 10 ozs. Dissolve by heat and add glycerin, 24 ozs. ; otto of roses, 6 drops. Strain and put into bottles.
5. Glycerin, 3 ozs. ; gelatin, 1 oz. ; rose water, 5 ozs. ; boiling water, 5 ozs. ; tincture of cochineal, sufficient ; otto of roses, 10 minims. Melt together by the aid of a water bath, add the otto and cochineal and bottle.
6. White soft soap, 4 ozs. ; pure glycerin, 6 ozs. ; almond oil (bleached), 3 lb. in summer. In winter 1 lb. more oil should be added. Oil of thyme, 1 dr. ; essence of bergamot, 2 drs. ; otto of roses, $\frac{1}{2}$ dr. Mix the soap and glycerin in a mortar, add the perfume to the oil, and rub it in gradually, taking care not to add the oil faster than it can be incorporated.
7. Transparent soap (Pears's), $\frac{1}{2}$ oz. ; distilled water, 4 ozs. ; glycerin, 24 ozs. All by weight. Dissolve the soap in the water by heat, adding a small quantity of glycerin ; when dissolved, and while still hot, add the remainder of the glycerin ; when nearly cold, add otto of roses, 6 drops ; stir well and put into jars.

A Fine Toi'et Salve (useful for chapped faces).—2 ozs. of oil of almonds, 1 dr. each of wax, spermaceti, and glycerin ; melt together and perfume with 2 ozs. of rose water and $\frac{1}{2}$ oz. of orange-flower water.

Honey Paste.

English honey, 2 ozs. ; glycerin, 2 ozs. ; white wax, $2\frac{1}{2}$ ozs. ; spermaceti, $3\frac{1}{2}$ ozs. ; oil of almonds, 5 ozs. ; otto of roses, 15 minims. Mix.

For Whitening the Hands.

1.—*Cosmetic Paste.*—Myrrh, 1 oz. ; honey, 4 oz. ; yellow wax, 2 ozs. ; rose water, 6 ozs. ; glycerin added according to thickness of paste, just enough to make it spread easily ; Melt the wax in a dish over boiling water, add the myrrh while hot ; beat up together, then add honey and rose water ; beat again, and lastly add glycerin from a teaspoonful up ; spread over the inside of the gloves ; then sew them up ; they are ready for use.

2.—Two teaspoonfuls of oil of sweet almonds ; 1 oz. of rose water, 36 drops tincture benzoin ; 1 teaspoonful glycerin ; yolks of two fresh eggs ; 1 teaspoonful of rice flour. Beat to a paste, and line gloves, or rub on hands, and wear close-fitting gloves over it at night.

3.—One teaspoonful of the best pine tar ; one pint pure olive oil. Melt in tin cup over boiling water. This can be kept on hand, and, if preferred, may be perfumed with rose water. To be spread on hands and worn with gloves. One application will not be sufficient.

4.—Ground barley, the white of an egg, 1 oz. of honey, and a teaspoonful of glycerin spread thickly inside gloves, to be worn at night.

5.—Pure soft soap, $\frac{1}{2}$ lb. ; salad oil, 1 gill ; mutton tallow, 1 oz ; boil together ; then add, when away from fire, spirits of wine, 1 gill ; ambergris or some other perfume, according to fancy ; benzoin would answer ; spread on gloves and wear at night.

6.—To keep the hands white where they are used in house work. Make good-sized mits of cloth, fill with wet bran or oatmeal, first washing the hands with vinegar and glycerin, or lemon juice and glycerin rubbed in afterwards ; then put the bran mittens on ; tie closely at wrist and wear them every night, or at regular intervals as needed.

7.—*To Make the Flesh Firm.* Alum added to white of egg and rose water ; a small quantity of glycerin may also be added.

For cosmetic gloves, take chamois or castor—the best quality is not necessary—three sizes larger than ordinarily worn, rip them open and spread them with the pastes described above.

For Removing Discolorations.—2 ozs. of fine almond soap dissolved in 2 ozs. of lemon juice, add 1 oz. of oil of almonds and a trifle of carbonate of potash and one teaspoonful of glycerin. Stir up until like soap. Must not be used where the skin is chapped or abraded. Bran in warm water and vinegar is useful for a wash ; make into lather with fine white soap, and rub the hands well with the bran. Indian meal and oatmeal are also good for a preparatory bath before trimming and polishing nails and using cosmetic preparations. The washing cosmetic with potash need only be used once or twice, and is useful after the bran bath or before ; the cosmetic gloves may follow for night use. Always use pure white soaps ; almond soap, and glycerin soap are to be recommended ; also the oatmeal and fine pumice soaps where the skin will bear the latter.

Fine pumice stone smoothed and rounded is exceedingly useful for smoothing the palms of the hands and the fingers.

Colour for Finger-tips.—Soak $\frac{1}{8}$ oz. of alkanet root chips in alcohol, diluted with water, for a week ; apply by dipping a bit of raw cotton in the mixture, and touching the finger-tips with it when a beautiful pink tint will be imparted.

Polish and Colour for the Nails.—As a first step in beautifying the nails, lather well with warm soap suds from a pure white soap ; dry, and while the nails are softened, trim carefully, push down the skin all round to show the shape of the nails and the little half moon at the base of the nails ; remove hangnails, and then polish and cover with powder described for the purpose. Treat the hands first, and then remove specks from nails and finally polish.

1. Rub the nails, which must first be carefully trimmed with sharp scissors, with equal parts of cinnabar and fine emery powder, and afterwards with scented oil of almonds.

2.—Pure oxide of tin perfumed with oil of lavender, and tinted with carmine. Apply either by rubbing on to the nail with the finger, or with a nail polisher covered with leather.

To Remove Spots.—Pitch and myrrh melted together and laid over the nails over night will soon cause white specks to disappear. Butter or cream will remove the pitch in the morning.

A New Complexion Cream.

1. To 4 ozs. of pure vaseline $\frac{1}{2}$ oz. of "vegetable" or "myrtle" wax,* add a $\frac{1}{4}$ oz. of cocoa-nut oil (oil of the *Cocos nucifera*), and 25 grains of white gum benzoin. Mix together at a gentle heat until perfectly homogeneous. The quantity of wax used may be varied within reasonable limits, as preferred, and the mixture when complete should be scented with a few drops of otto of roses, rhodium, or neroli oil.

2. Two ozs. of rose or orange-flower water (according to the perfume employed for No. 1) are next to be saturated with pure borax in the cold, and the clear solution decanted. A second 2 ozs. of the rose or other distilled water has next to be beaten up with the fresh yolk of an egg and 3 or 4 drs. of pure glycerin, after which both solutions may be mixed together. If required to be kept for any length of time, 15 or 16 grains of salicylic acid should also be dissolved in this fluid.

When the cream is to be prepared, No. 1 must be melted, and a sufficiency of No. 2 added to form a cream, the whole being kept constantly well stirred until quite cold. The essential oil added to No. 1 may, if desired, be that of *Eucalyptus globulus*, and the rose or orange-flower water in No. 2 replaced with elder-flower water, &c. If intended for application to a burnt or scalded surface, the essential oil may be omitted, and lime-water supersede the rose water. Any desired tint may be communicated to the cream by the employment of suitable pigments or colouring matter such as alkanet, cochineal, carmine-lake, safflower, violet-juice, spinach, and annatto. This preparation allays irritation and exercises a whitening influence upon the skin, and if applied regularly every night before retiring to rest, is said to alleviate erysipelas and cure eczema in a very short time. To be applied freely to the face, neck, &c., at night, immediately after washing, and allowed to remain untouched for fifteen or twenty minutes; then the excess may be carefully wiped off, but the whole should not be removed until the morning.

* Where this cannot be obtained, a like quantity of white paraffin or spermaceti wax may be substituted.

Extract of Elder Flowers.

Bitter almonds, 2 ozs.; white soap, 2 drs.; orange-flower water, 2 ozs.; elder-flower water, 21 ozs.; rectified spirit of wine, 4 ozs.; esprit de rose, 2 drs.; oil of sweet almonds, 2 drs.; white wax, spermaceti, of each 1 dr. Mix. Blanch the almonds, and beat with the soap finely scraped. Dissolve the white wax and spermaceti in the oil of almonds and make into a cream with sufficient of the elder flower water; then add to the mixture of soap and almonds. Beat all together and add gradually the remainder of the orange flower and elder-flower water. Strain through cloth, and add the rectified spirit and perfume.

Honey Water.

Oil of nutmegs, $\frac{1}{2}$ oz.; oil of English lavender, $\frac{1}{2}$ oz.; oil of rosemary, 3 drs.; essence of ambergris, $\frac{1}{2}$ oz.; essence of lemon, $\frac{1}{2}$ ozs.; rectified spirit of wine, 8 lb.; rose water, $\frac{1}{2}$ lb.; orange-flower water, $\frac{1}{2}$ lb.; saffron, sufficient. Mix.

Milk of Roses.

Valentia almonds, 1 lb. 2 ozs.; bitter almonds, 2 ozs. Blanch and beat well with white castile soap, finely scraped. Then make a cream of roses with oil of almonds, 2 ozs.; white wax, 2 drs.; spermaceti, $\frac{1}{2}$ oz. Dissolve and add rose water in sufficient quantity. Pour off the water and add to the mixture of almonds and soap. Beat all together and add gradually rose water, 5 quarts; strain through cloth and add rectified spirit, 1 quart; otto of roses, 1 dr. Mix.

Almond Meal.

Almond meal, in fine powder, prepared from blanched bitter almonds, after the oil has been extracted. 6 ozs.; orris root, in fine powder, 4 ozs.; wheat flour, 4 ozs.; white castile soap, in fine powder, 1 oz.; borax, in fine powder, 1 oz.; oil of bitter almonds, 10 drops; oil of bergamot, 2 dr.; tincture of musk, 1 dr. Mix thoroughly, and pass the mixture through a fine sieve.

Almond Bran (Mandelkleie).

Fine oatmeal, $3\frac{3}{4}$ lb.; coarse oatmeal, $\frac{1}{4}$ lb.; wheat flour, 1 lb. Mix continually with oil of sweet almonds, 3 ozs.; add powdered borax, 3 ozs.; powdered orris root, 5 ozs. Perfume with essential oil almonds, 20 minims; essence of lemon, $\frac{1}{2}$ ounce; otto of roses, 1 drop.

Violet Powder.

1.—Starch powder, 9 lb.; orris root, powdered, 4 ozs.; ess bouquet, 30 drops; essence of ambergris, 30 drops; otto of roses, 10 drops; oil of bergamot, 20 drops; oil of cloves, 5 drops; musk, 15 grains. Mix.

2.—Starch powder, 60 ozs.; flour, 16 ozs.; orris root, powdered, 3 ozs.; essence of ambergris, volatile essence, 2 drs. Mix.

3.—Orris root, powdered, and starch, of each equal parts, and perfume with 1 dr. of the following to each pound of powder:—Essence of bergamot and lemon, of each 20 parts; oil of cloves and neroli, of each 10 parts.

Toilet Powder for Infants.—Suggested as a substitute for violet powder by Dr. Klamann : Calcined magnesia, 50 parts ; Venetian talc, powdered, 250 parts ; salicylic acid, 1 part. Mix and scent slightly with orris root or any mild essential oil.

Preparations for Removing Tan or Freckles.

1.—Oil of almonds, expressed, 4 ozs. ; lard, 3 ozs. ; spermaceti, 1 oz. ; expressed juice of houseleek, 3 fl. ozs. Melt the spermaceti and lard together ; add the oil and then the juice, and stir the mixture until it solidifies on cooling. A few drops of perfume may be added.

2.—Bichloride of mercury, 6 grains ; dilute hydrochloric acid, 1 dr. ; water, 4 ozs. ; alcohol, rose water, of each 2 ozs. ; glycerin, 1 oz. Mix. Apply at night and wash from the skin with soap in the morning.

Lip Salve.

1.—Best olive oil, 2 ozs. ; white wax, 1 oz. ; spermaceti, 1 oz. ; otto of roses, 8 drops ; balsam of Peru, 17 drops ; alkanet root, sufficient to colour. Mix.

2.—Spermaceti, 18 parts ; yellow wax, 100 parts ; oil of almonds, or olive oil, 150 parts ; alkanet root, 12 parts ; essence of bergamot, 2 parts ; essence of lemon, 2 parts ; pomade jasmin, 4 parts ; salicylic acid, 3 parts. The substitution of yellow wax for white wax is said to prevent rancidity for nearly a year ; the addition of salicylic acid ensures the keeping properties of the salve for a much longer period. Instead of alkanet root $\frac{3}{4}$ or 1 part of alkannin may be used.

PHOSPHORESCENT POWDER AND PAINT.

Self-luminous or Calcium Sulphide Paint.—Boil for an hour $2\frac{1}{4}$ ozs. caustic lime, recently prepared by calcining clean white shells at a strong red heat, with 1 oz. of pure sulphur (floured) and a quart of soft water. Set aside in a covered vessel for a few days, then pour off the liquid, collect the clear orange coloured crystals which have deposited, and let them drain and dry on bibulous paper. Place the dried sulphide in a clean black lead crucible provided with a cover. Heat for half-an-hour at a temperature just short of redness, then quickly for about 15 minutes at a white heat. Remove cover, and pack in sand until perfectly cold. Add a small quantity of pure calcium fluoride to the sulphide before heating. It may be mixed with alcoholic copal varnish.

Phosphorescent Powder.—Mix together 100 parts of mixed carbonate and phosphate of lime, obtained by calcining oyster or cuttle fish shells with 100 parts of quicklime, 25 parts of dried common salt, 20 to 25 per cent. of dry caustic soda, and from 3 to 7 per cent. of sulphate of calcium or barium. Subject the whole to a white heat for two hours.

PLATE POWDER.

1.—Prepared chalk, 4 lb.; nitrate of silver, 2 drs.; solution of soda, sufficient to wash the precipitate. Dissolve the precipitate in solution of cyanide of potassium, 1 oz., and add rouge, 4 oz.

2.—Prepared chalk, 5 parts; levigated oxide of iron, 1 part. Mix, and use dry.

POLISHING PASTE.

Finest mottled soap, 1 lb.; rotten stone, 2 ozs.; crocus, $1\frac{1}{2}$ ozs.; putty powder, 2 ozs.; strong mercurial ointment, 1 oz.; water, $1\frac{1}{4}$ lb. First scrape the soap fine, and having added the water, simmer on a very slow fire till dissolved. Then add the mercurial ointment, putty powder and crocus, and stir in the rotten stone gradually with a stick.

PRESERVING FLUID FOR ANATOMICAL PREPARATIONS.

Dr. Hager recommends the following;—Salicylic acid, 4 drs.; boracic acid, 5 drs., potassium carbonate, 1 dr.; dissolved in hot water, $12\frac{1}{2}$ ozs.; glycerin, 5 ozs.; then add oil of cinnamon, oil of cloves, of each, 3 drs.; dissolved in alcohol, $2\frac{1}{2}$ ozs. This fluid is not only not poisonous, but it possesses the desirable property of acting as an antiseptic, and also as a preventive and exterminator of moths and vermin, and is possessed of a pleasant odour.

PRESERVATIVE FOR BOTANICAL SPECIMENS.

1.—For tissues, leaf sections, &c., equal parts by volume of glycerin, alcohol, water; or glycerin, 3 volumes; camphor water, 2 volumes. The solution to be kept in tightly stoppered bottles.

2.—*For Preserving Vegetable Organs and Formations.*—Distilled water, 100 parts; chloroform, 2 parts; to be shaken well together; or distilled water, 500 parts; sodic sulphocarbonate, 1 part. M. Stanislas Martin recommends dipping dried plants in glycerin, 25 ozs.; arseniate of soda, 1 oz. Boil and cool before using. Then drain and dry between botanical paper.

3.—*Glycerin Jelly for Botanical Preparations.*—Gelatin, 1 part troy weight; water, 6 parts, troy weight. Soak for two hours, then add glycerin, 7 parts; carbolic acid, 1 per cent. Warm until the flocks formed by the carbolic acid have disappeared, and filter while still warm through glass-wool or asbestos.

PRESTON SALTS.

Fill the smelling bottles with crystallised sulphate of potash and and pour into each bottle as much aromatic ammonia, made according to the following formula, as the bottle can retain without spilling:—Strong solution of ammonia, 15 ozs.; oil of lavender, $\frac{1}{2}$ dr.; oil of cloves, 5 drops; essence of lemon, 1 dr.

SOLUBLE PRUSSIAN BLUE.

Insoluble Prussian blue, 150 grs. ; pure ferrocyanide of potassium, 75 grs. ; Mix intimately in a mortar and add 12 ozs. more or less, of distilled water according to the depth of tint required. Leave for half-an-hour, shaking up from time to time, and separate the undissolved residue by filtration.

LIQUID BLUINGS FOR LAUNDRY USE.

1.—Dissolve indigo sulphate in cold water, and filter. 2.—Dissolve good cotton blue (aniline blue 6 B.) in cold water. 3.—Dissolve Prussian blue with one-eighth part of oxalic acid in water. Dissolve soluble blue in water, with 2 per cent. of oxalic acid.

RASPBERRY VINEGAR.

Raspberry juice, 5½ pints ; strong acetic acid, ½ pint ; white sugar, 5½ lb. Boil.

SEALING WAX.

1.—*Red Sealing-Wax*.—Fine pale shellac, 4 ozs. ; cautiously melt it in a bright copper pan over a clear charcoal fire, and, when fused, add of true Venice turpentine, 1¼ ozs. ; mix, and further add of vermilion, 3 ozs. ; remove the pan from the fire, cool a little, and cast in suitable moulds.

2.—*Sealing-Wax for Fruit Bottles*.—Yellow wax, 1 oz. ; common vermilion, 3 ozs. ; shellac, 5 ozs. ; resin, 16 ozs. Melt together and run into moulds.

3.—*Cheap Bottle-Wax*.—Common strained rosin, 6 lbs. ; yellow beeswax, ½ lb. ; lampblack, 1 lb. Melt the rosin and wax, and stir in the lampblack. If coloured wax is wanted, use the finest rosin and white beeswax in the same proportions, adding Venetian red or other pigment for colouring in place of the lampblack.

SMOKERS' ESSENCE.

1.—Digest 8 ozs. orris root in 64 ozs. spirit of wine. Set aside for eight days. Separately dissolve, in 10 ozs. spirit of wine, 70 drops of essence of lemon, 60 drops of otto of roses, 70 drops of oil of neroli, 2 drops raspberry ether, and add 4 grains of musk. Set aside for eight days. Mix the solutions, dissolve 2 lbs. finest gum benzoin, and filter.

2.—Oil of peppermint, 2 parts ; oil of nutmegs, 2 parts ; oil of origanum, 2 parts ; essence of lemon, 3 parts ; oil of melissæ, 3 parts ; oil of rosemary, 6 parts ; tincture of vanilla, 30 parts ; essence of rosemary, 50 parts ; essence of orange flower, 50 parts ; tincture of benzoin, 60 parts ; rectified spirit of wine (90 per cent), 400 parts.

3.—Oil of carraway, 4 parts ; oil of origanum, 4 parts ; benzoic acid, 15 parts ; essence of bergamot, 60 parts : rectified spirit of wine (90 per cent.), 500 parts.

SOAPS.

Alpine Plant Soap—Cocoa nut oil, 10 lb. ; fresh neutral tallow, 10 lb. ; soda lye, 38 deg. B, 11 lb. ; pure glycerin, 28 deg. B, 3 lb. ; best white sugar, 4lb. ; alcohol, 96 per cent., $7\frac{1}{2}$ lb. Melt together the cocoanut oil and the tallow over a water bath, and well incorporate the glycerin, sugar (dissolved in water, about 1 pint for each lb of sugar), spirit, and lye, until saponification is complete. Now raise the heat to 190 deg. F., and constantly stir the mixture until it is quite smooth. Remove from the water bath and allow to cool to about 145 deg. F. Mix in from 105 to 125 grains of nitrate of uranium previously dissolved in spirit or hot water, and scent with essence of bergamot, 6 drs. ; oil of peppermint, 6 drs. ; oil of aniseed, $2\frac{1}{2}$ drs. ; oil of lavender, $2\frac{1}{4}$ drs., and filter.

1.—*Arsenical Soap*—Camphor, $\frac{5}{8}$ oz. ; powdered arsenic, $\frac{1}{4}$ lb. ; white soap, $\frac{1}{4}$ lb. ; salt of tartar, $1\frac{1}{2}$ lb. ; powdered chalk, $\frac{1}{2}$ lb. Cut the soap into very thin slices and put them into a pot over a very gentle fire with very little water, stirring with a wooden spoon. When dissolved, add the salts of tartar and chalk ; then remove it from the fire and add the arsenic and stir the whole gently. Pound the camphor in a mortar with a little spirits of wine and mix.

2.—Rose soap, 1 oz. ; salt of tartar, 3 drs. ; lime, 1 dr. ; arsenic, 1 oz. ; camphor, $1\frac{1}{2}$ drs. Mix.

Eau de Cologne Soap.—White soap (castile), 2000 parts ; oil of lemon, 8 parts ; oil of neroli, 4 parts ; oil of sweet orange, 6 parts ; oil of rosemary, 1 part ; oil of thyme, 1 part ; oil of petit grain, 2 parts. Essence of civet (370 grains of civet to the pint of alcohol), 4 parts.

Family Soap.—Cocoanut oil, 55 lb. ; soda lye, 30 deg. B, 44 lb. It is perfumed with oil of bergamot, 10 drs. ; oil of cassia, 10 drs. ; sassafras, 5 drs. ; lemon, 5 drs.

Gall Soap.—To 55 lb. of cocoa-nut oil add 1 lb. of fresh ox gall, incorporating the two thoroughly. Then saponify with $22\frac{1}{2}$ lb. of soda lye, 38 deg. B. The soap is coloured with 11 ozs. of green ultramarine, and perfume with 2 ozs. each of oil of lavender and oil of carraway.

Glycerin (Transparent) Soap.—20 lb. of fresh tallow and 10 lb. of best cocoanut oil are heated to 167 deg. F. Then 15 lb. of solution of caustic soda of 40 deg. B., or spec. gr. 1.384, 12 lb. of 96 per cent. alcohol, 15 lb. of glycerin, 6 lb. of brown sugar, and 2 lb. of water are mixed and likewise heated to 167 deg. F., and the mixture gradually mixed with the former, under brisk stirring. Saponification takes place, without the necessity of boiling. The soap may now be covered, and, after it has become a little cooler, scented ; finally transfer to moulds, which must be so placed that the soap can congeal quickly.

1.—*Musk Soap*.—Best white tallow soap, 10 lb. ; tincture of benzoin, 3 ozs ; tincture of ambergris, 2 ozs. ; tincture of civet, 1 oz. ; grain musk, $\frac{1}{4}$ oz. ; essential oil of sandalwood, $\frac{1}{4}$ oz. ; otto of roses, $\frac{1}{2}$ oz. ; caramel, sufficient to colour. Grind the soap to a paste, which put in a marble mortar; then add the required colour and musk (previously dissolved in a little water), and pound the whole until it has become a perfectly homogeneous mass ; then work into cakes of the required size. Colour with caramel.

2.—Curd soap, 5 avoirdupois pounds ; grain musk (in fine paste), 2 drs. ; essence of bergamot 1 fl. oz. Cut the soap into very thin shavings, and if dry, add a sufficient quantity of water to make the mass work easily ; let stand for ten or twelve hours. Then add the perfume and colouring matter and beat in a mortar till of uniform consistency and thoroughly mixed ; afterwards cut into required shape and size for finishing by pressure in moulds.

Rose Soap.—Curd soap, 5 avoirdupois pounds ; rose otto, 1 fl. oz. ; oil of sandalwood, 2 fl. drs. ; oil of rose geranium, 2 fl. dr. ; musk tincture, 2 fl. ozs. Compound tincture of cochineal, sufficient to colour. Incorporate as musk soap No. 2.

Sea Water Soap.—Lye at 30 deg. B, 303 parts ; oil of copra, 100 parts ; palm oil, 100 parts ; ground nut, or olive oil, 10 parts ; silicate of soda, 16 parts.

Transparent Soap.—Reduce perfectly dry curd soap to shavings, and mix with twice its weight of 95 per cent. alcohol. Introduce the whole into water-bath of a still, provided with a stirrer, and when the soap has dissolved, apply heat. Most of the alcohol is distilled off and kept for future use. When but little spirit comes over, add the perfume or glycerin, withdraw the heat and allow the contents of the water-bath to cool somewhat, then pour into moulds, which should be larger than the cakes are intended to be, as the material shrinks a great deal on drying.

Violet Soap.—Cocoa-nut oil, 110 lb. ; soda lye, 38 deg. B, 52 lb. ; potash lye, 38 deg. B, 2 lb. It is perfumed with 2 lb. of orris root in coarse powder, and 1 lb. of liquid storax, which must be stirred up in the cocoa-nut oil before saponification takes place, after which the following mixture of essences is incorporated with the soap :— Oil of cassia, oil of sassafras, bergamot, of each 6 drs. ; oil of lavender, 7 drs. ; balsam of peru, $\frac{1}{2}$ drs. ; oil of neroli, $1\frac{1}{2}$ drs. ; oil of nutmeg, 9 drs. Colour with $2\frac{1}{4}$ ozs. of brilliant brown, dissolved in a sufficient quantity of water.

STAIN REMOVERS.

Acids—Vinegar, Orange Juice, Must, Sour Fruits.—White goods, simple washing, followed up by warm chlorine water if a fruit colour accompanies the acid. Coloured cottons, woollens, and silks. Carefully moisten with dilute ammonia, with the finger end. In case of delicate colours, make prepared chalk into a thin paste, with water, and apply to the spots.



Alizarine Inks.—White goods, tartaric acid, the older the spots the more concentrated the solution. On coloured cottons and woollens, and on silks, dilute tartaric acid applied cautiously.

Blood and Albuminoid Matters.—Steep in lukewarm water, or soften the spots with lukewarm water, and apply pepsin or the juice of *Carica Papaya*.

Chrysophanic Acid.—For removal of stains from the skin, use benzol. From cotton goods, bleach with chloride of lime.

Coffee and Milk Stains in Silk, Woollen Fabrics, &c.—Paint over with glycerin and then wash with a linen rag dipped in lukewarm rain water. Afterwards press on the wrong side with a moderately warm iron.

Grease.—White goods, wash with soap or weak alkaline lyes. Coloured cottons, wash with lukewarm soap lyes. Coloured woollens, soap lyes, or ammonia. Silks, absorb with French chalk or fuller's earth, and dissolve away with benzine or ether.

Gum, Sugar, Jelly, &c.—Wash with water at a hand heat.

India-rubber Beds, &c.—Rub first with a sponge and cold water, and afterwards use a little soap with a soft tooth-brush. A little fine pumice stone may be added.

Lime and Alkalies.—White goods, simple washing. Coloured cottons, woollens, and silks, moisten and apply very dilute citric acid with the finger end.

Marking-Ink Stains.—"Indelible" ink stains, a solution of corrosive sublimate. For marking-ink containing silver, moisten stains with tincture of iodine, and then with a solution of cyanide of potassium rinse thoroughly with water. Sodium hyposulphite may be rubbed on the marks in place of the cyanide.

Marble.—1. Put equal quantities of ether and lemon juice in a bottle and shake up well; wet the spots with the mixture, and in a few minutes rub with a soft linen cloth. 2.—Common soda, 2 parts; pumice stone, 1 part; finely powdered chalk, 1 part. Mix, sift through a fine sieve, and then mix with water; rub it well over the marble, and wash over with soap and water.

Matter Adhering Mechanically.—Beating, brushing, and currents of water either on the upper or under side.

Nutgall Ink, Rust, Iron-mould.—White goods, hot solution of oxalic acid, dilute muriatic acid, followed by granulated tin. Salts of tin are said to remove iron-mould on linen much more effectually than oxalic acid. Fast dyed cottons and woollens, repeated and cautious washings with a solution of citric acid. Pyrophosphate of sodium is also recommended for the removal of ink stains. First apply tallow to the ink spot; then wash in a solution of pyrophosphate until both tallow and ink have disappeared. To remove stains of red aniline, moisten the spot with strong alcohol acidulated with nitric acid.

Oil Colours, Varnish, and Resins.—On white or coloured linens, cottons, or woollens, use rectified oil of turpentine, alcohol lye, and their soap. On silks, benzine, ether, and mild soap, very cautiously.

Scarlet Cloth. The War Office order the coat first to be well beaten and brushed, then to apply with a clean hard brush a solution of 1 oz. of salts of sorrel, binocalate of potassium, in a pint and a-half of water. Then to apply another solution of 1 oz. of cream of tartar in a pint and a-half of cold water. After cleaning, the coats should be hung in the sun or in a dry place, but not near fire or stoves. An acid solution of muriate of tin is also said to take stains out of scarlet cloth.

Scorching.—White goods, rub well with linen rags dipped in chlorine water. Coloured cottons, re-dye if possible, or in woollens raise a fresh surface. Silk, no remedy.

Stearine, Sperm Candles. Strong, pure alcohol.

Tanning from Chestnuts, Green Walnuts, etc., or Leather. White goods, javelle water (liq. sodæ chlor.), hot chlorine water, and concentrated solution of tartaric acid. Coloured cottons, woollens, and silks, apply dilute chlorine water cautiously to the spot, washing away and re-applying several times.

Tar, Axle Grease, Mixtures of Fat, Rosin, Carbon, and Acetic Acid. On white goods, soap and oil of turpentine, alternating with streams of water. Coloured cottons and woollens, rub in with lard, let stand, soap, let stand again, and treat alternately with oil of turpentine and water. Silks the same, more carefully, using benzine instead of oil of turpentine, and dropping the water from a certain height on the under side of the stain.

Vegetable Colours, Fruit, Red Wine, and Red Ink. On white goods, sulphur fumes or warm chlorine water. Coloured cottons and woollens, wash with lukewarm soap lye or ammonia. Silk, the same, but more cautiously.

STARCH GLAZE.

1.—Spermaceti, 1 oz.; gum arabic, 1 oz.; borax, 1 oz.; glycerin, $2\frac{1}{2}$ oz.; distilled water, $14\frac{1}{2}$ ozs.; perfume, sufficient. The starch is set on the fire to boil, and while ebullition is going on two or three teaspoonfuls of the above is added to each $\frac{1}{4}$ lb. of the starch, or it may be used without boiling the starch.

2.—Shake together two parts of a saturated solution of borax and one part of pulverised shellac, applying no heat. Solution will be effected in two or three days. In three parts of borax solution the shellac is more easily soluble. Bleached shellac must be preserved under water, and must be dissolved immediately after being powdered. If in preparing the varnish, a higher temperature than from 112 deg. F to 130 deg. F. is employed the liquid is apt to become a faint reddish colour. The above may also be used for varnishing pictures, maps, prints, &c.

PURE WHITE GUTTA-PERCHA FOR STOPPING TEETH.

1.—Dissolve gutta-percha in boiling benzine and add sufficient fine plaster of Paris to throw down all the impurities. Decant the supernatant solution and precipitate the gutta-percha with twice its volume of alcohol of 90 deg. The precipitate of gutta-percha is well drained and dried slowly in the air.

2.—Oxide of zinc (recently made by burning), 200 parts; powdered silica, 8 parts; powdered borate of soda, 4 parts; powdered glass, 5 parts. Mix and pass through a very fine sieve. To be kept in a well stoppered bottle. A little of the powder is quickly mixed with a concentrated solution of chloride of zinc, so as to make a thick paste, which is pressed into the cavity of the tooth, and will harden in less than ten minutes. It forms a hard white cement.

TINCTURES.

Tincture of Ambergris and Musk—Ambergris, 1 part; grain musk, 1 part; alcohol, 150 parts. Macerate and filter.

Aromatic Tincture.—1.—Cinnamon, 4 ozs.; cloves, 1 oz.; cardamoms, 1 oz.; galangal root, 1 oz.; ginger, 1 oz.; all in coarse powder. Macerate 8 days in proof spirit, 3 lb. 2 oz (by weight), and then strain.

2.—Cinnamon, bruised, 1 oz.; cardamoms, bruised without the shells, $\frac{1}{2}$ oz.; long pepper and ginger, of each $2\frac{1}{2}$ drs.; proof spirit, 1 quart. Digest for 7 days or percolate.

3.—Cinnamon, 2 oz.; cardamoms, 1 oz.; ginger, $\frac{1}{2}$ oz.; proof spirit, 1 quart. Macerate for 14 days.

Tincture of Civet—Civet, 30 grs.; orris root, 1 dr.; Cologne spirit, 8 ozs. Triturate the civet with the orris root (powdered), then add alcohol, macerate for thirty days with occasional agitation, and filter.

Tincture of Cochineal.—Cochineal in fine powder, 2 ozs.; alcohol, 10 fl. ozs. Macerate for 14 days, express, and filter.

Tincture of Cudbear.—Cudbear, 2 to 4 ozs.; diluted alcohol, 1 pint. Exhaust by maceration or percolation.

Tincture of Musk.—To one ounce of grain musk (after being thoroughly pulverised in a porcelain mortar) add slowly, part at a time, one quart of lukewarm water. Well triturate with the musk and after a while the liquid should be drawn off and put in a bottle, and water enough added to the deposit in the mortar to go through the same operation again until the whole quart is used; the dissolved parts of the musk are then triturated in the same way with one quart of the best deodorised 90 per cent. Cologne spirits and added to the aqueous solution of musk in the bottle. About 23 grs. of carbonate of potash should be dissolved before trituration in the alcohol. The remainder of the musk in the mortar can be added to that in the bottle. Let the whole infuse for a couple of weeks, frequently shaking.

Tincture of Saffron.—Saffron, 6 ozs. ; alcohol 1 pint. Macerate and filter.

Tincture of Tonka Beans—Tonka beans, bruised or sliced, 4 ozs. ; diluted alcohol, 1 pint. Macerate for seven days in a warm place, strain with pressure, and filter.

Tincture of Turmeric.—Turmeric, 4 ozs. ; alcohol, 10 ozs. ; water, 6 ozs. Macerate and filter.

VARNISHES.

Amber Varnish. Amber, 30 parts ; Venice turpentine, 5 parts ; oil of turpentine, 100 parts. Mix

India-rubber Varnish.—Inclose 30 parts of finely cut caoutchouc in a capacious linen bag, which suspend, by means of a thread held fast by the stopper, within a flask containing a 1000 parts of benzine, so that the bag remains near the surface of the liquid. In the course of six or eight days, the soluble portion of the caoutchouc, about 40 to 60 per cent., will pass into the benzine, while the contents of the bag will expand enormously. The clear solution, which is quite viscous and contains 1·2 to 1·5 per cent. of caoutchouc, is then carefully separated. The swelled contents of the bag retain one-fourth to one-third of the benzine used, and may be utilised for the preparation of an inferior kind of varnish. A solution of india-rubber in benzine, kept in half-full bottles, is decomposed on exposure to light, which may be seen by the change in the solution from a viscous to a thin-fluid condition. Even in the dark this change goes on, but it requires about three times as much time.

Varnish for Cloth.—Soften $\frac{1}{4}$ lb. crude India-rubber, cut into small pieces, in $\frac{1}{2}$ lb. oil of turpentine ; then add 2 lbs. of boiled linseed oil, and boil for two hours over a slow fire. When the mixture has completely dissolved add 6 lbs. of boiled linseed oil, 1 lb. of litharge, and boil until a smooth liquid is obtained. Any pigment, black or green, may be incorporated with the varnish when finished. The varnish should be applied warm.

Varnish for Drawings, Maps, &c.—Cover clear dammar resin in a flask, with four and a-half to six times its quantity of acetone, and allow to stand for fourteen days at a moderate temperature, after which poured off the clear solution. Mix three parts of this solution with four parts of thick collodion, and allow the mixture to become clear by standing. Apply with a soft camel's or beaver's hair-brush in vertical strokes. At first, the coating looks like a thin white film ; but, on complete drying, it becomes transparent and shining. It should be laid on two or three times. It retains its elasticity under all circumstances, and remains glossy in every kind of weather.

Aqueous Shellac Varnish.—A varnish for covering maps, photographic prints, &c., can be readily prepared by merely shaking together two parts of a saturated solution of borax and one part of pulverised shellac, applying no heat. Solution will be effected in two or three days. In three parts, however, the shellac is easily soluble. Bleached shellac must be preserved under water, and must be dissolved immediately after being powdered. If in pre-

paring the varnish a higher temperature than 50 deg or 60 deg. C. is employed, the liquid is apt to assume a faint reddish colour ; the finished varnish, however, bears heat very well. 2.—The following makes a good varnish for water colours, inks, &c., and when dry is waterproof :—Pale shellac, 5 ozs. ; borax, 1 oz. ; water, 1 pint. Digest at nearly the boiling point until dissolved, and then strain.

Almost every kind of varnish will strike through paper, unless it is protected with a good coat of flour paste, size or glue dissolved in water, and dried before the varnish is applied.

Vermin Killers.

1.—Strychnia, 2 drs. ; powdered nux vomica, 3 ozs. ; ultramarine blue, sufficient to colour. Well mix the strychnine with the ultramarine blue, moistened with a little water, and then gradually add the nux vomica and carefully mix.

2.—*Phosphorus Paste.* Flour, 80 parts ; water, 80 parts ; syrup, 60 parts ; phosphorus, 4 parts ; oil of aniseed, sufficient. Mix the flour and water to an even paste, then add all the other ingredients except the phosphorus. Melt the phosphorus in warm water and pour into the mixture and stir until perfectly divided.

WASHING LIQUORS.

1.—*Ammonia Washing Liquor.*—Water, 6 gals. ; white soap, 1 lb. ; pearl-ash, 2 ozs. Dissolve by boiling, and when cooled to the temperature of new milk, add solution of ammonia, sp. gr. 960.

2.—Yellow soap, 3 ozs. ; water, 2 gals. ; strong solution of ammonia, 8 ozs. Boil the water with the soap till dissolved, and when cool add the ammonia.

3.—Strong solution of ammonia 1 oz. ; water, 1 pint.

4.—For removing spots and stains : Oxgall, 10 parts ; potash, 5 parts ; water, 100 parts ; with a little spirit.

Bleaching Liquid.—Take equal parts of the rough hypochlorites of sodium, potassium and magnesium, with a thousandth part of permanganate of potassium. The solution has a sp. gr. of 25 deg. to 30 deg. B. For use, dilute with 50 parts of water.

Washing Powder.—Washing soda, 40 parts ; caustic soda, 20 parts ; sodium silicate, 15 parts ; palm or other oil, 2 parts ; water, 23 parts. Mix, evaporate and reduce to coarse powder.

WOOD STAINS.

Yellow Stain. Wash over with a hot concentrated solution of picric acid, and when dry, polish the wood.

Black. First sponge the wood with a solution of chlorhydrate of aniline in water, to which a small quantity of copper chloride is added. Allow it to dry, and go over it with a solution of bichromate of potassium. Repeat the process twice or thrice, and the wood will take a fine black colour, unaffected by light or chemicals.

Ebony Black.—Wash with a concentrated aqueous solution of extract of logwood several times; then with a solution of acetate of iron of 140 deg. Baumé, which is repeated until a deep black is produced.

Gray.—Dissolve one part of nitrate of silver in 50 parts of distilled water; wash over twice; then with hydrochloric acid, and afterwards with water of ammonia. The wood is allowed to dry in the dark, and then finished in oil and polished.

Light Walnut.—Dissolve 1 part of permanganate of potassium in 30 parts of pure water, and apply twice in succession, and after an interval of 5 minutes wash with clean water, and when dry, oil and polish.

Dark Walnut.—Same as for light walnut, but after the washing with water, the darker veins are made more prominent with a solution of acetate of iron.

Mahogany.—Barbadoes aloes, carbonate of potash, of each, 1 oz.; water, 2 ozs. Dissolve at a gentle heat.

Dark Mahogany. Introduce into a bottle 15 grs. alkanet root, 30 grs. aloes, 30 grs. powdered dragon's blood, and 500 grs. 95 per cent. alcohol, closing the mouth of the bottle with a piece of bladder, keeping it in a warm place for 3 or 4 days, with occasional shaking; then filtering the liquid. The wood is first mordanted with nitric acid, and when dry washed with the stain once or oftener, according to the desired shade; the wood then being dried, oiled, and polished.

Light Mahogany.—Same as dark mahogany, but the stain only to be applied once. The veins of true mahogany may be imitated by the use of acetate of iron skilfully applied.

Fireproofing for Wood.—Take alum, 3 parts; green vitriol, 1 part. Make a strong, hot solution with water; make another weak solution with green vitriol in which pipe-clay has been mixed to the consistence of a paint. Apply two coats of the first, dry, and then finish with one coat of the last.





REMEDIAL RECIPES.

ANTISEPTICS.

Antiseptic Catgut.

Soak for 24 hours in oil of juniper, and 24 hours in glycerin. Then soak in alcohol (95 per cent.), dry, and wind on a reel. Silken thread may be prepared in a similar manner.—(*Kocher*).

Antiseptic Gauze.

Eucalyptus oil, 1 part, gum dammar, 3 parts; paraffin wax, 3 parts.—(*Lister*).

Antiseptic Powder for Wounds.

Powdered resin, 60 parts; stearic acid, 15 parts. Melt at a gentle heat and add when nearly cool 25 parts of crystallised carbolic acid, thoroughly incorporating the ingredients. When quite cold powder, and mix with 700 parts of precipitated chalk. Sprinkle on wounds from a box with a perforated cap.

Carbolic Acid, Perfumed.

Pure carbolic acid, 1 part; essence of lemon, 3 parts; alcohol (36 deg.), 100 parts. Mix.

Carbolised Iodine.

Carbolic acid, 45 parts; camphor, 10 parts; acetic acid, 8 parts; alcohol, 10 parts; iodine, 2 parts; water, 25 parts.

Carbolised Tablets.

Talc, 2 parts; plaster of Paris, 50 parts; carbolic acid crystals, 10 parts. Mix with water to a thick cream and pour into paper capsules. When dry, unwrap and cover with tinfoil and paper. For use, unwrap and stand on a plate for several days, according to the temperature.

Liquor Carbonis Detergens.

Quillaya bark, bruised, 4 lb.; alcohol, of 65 deg, 2 gallons. Heat to boiling. Macerate several days and filter. Then take of the tincture, 76 ozs.; coal tar naphtha, 32 ozs. Digest eight days on a water bath or sand bath at a moderate temperature, occasionally stirring the mixture, and filter.

Carbolised Vapour.

Pure carbolic acid, 10 parts; spirits of turpentine, or eucalyptus oil, 5 parts; spirit of wine, 25 parts; liquor ammoniæ, 12 parts. To be inhaled from any properly-constructed inhaler. Known in Germany as anti-diphtheric vapour.

Glycerole of Carbolic Acid.

Crystallised carbolic acid, 50; thymic acid, 1, glycerin, 50, water 1000. If the water is doubled the weak solution is produced. The thymic acid masks in part the odour of the carbolic acid for those who dislike its smell.

Condy's Disinfecting Fluid.

Potassium permanganate, 2 parts; distilled water, 100 parts. Dissolve.

Resorcin Spray.

Resorcin, 18 grs.; distilled water, 8 ozs. Mix.

Solution of Salicylic Acid for Dental Use.

Salicylic acid, 640 grs.; potassic citrate, 960 grs.; glycerin, 8 ozs.; simple elixir, 1 pint. Dissolve the potassic citrate in the glycerin by means of gentle heat. Next dissolve the salicylic acid in the elixir and mix the two solutions.

Salicylated Starch.

Solution of salicylic acid in alcohol, 2 or 3 per cent., Add by degrees sufficient starch to occupy the space of about three-quarters of the height of the solution. Allow the whole of the starch to deposit. Pour off the clear stratum and squeeze the starch in a piece of muslin and dry. Pulverise and dry again at 176 deg. F.

Sulphurous Acid as a Disinfectant.

Cold alcohol will absorb three hundred volumes of sulphurous acid gas, and a few drops of this liquid placed in the bottom of a trunk, &c., will suffice to destroy any deleterious germs adhering to clothes.

Thymic Acid Dressing.

Thymic acid, 2 parts; alcohol, 100 parts; water, 900 parts. Mix.

Thymol and Glycerin.—Thymol, 1 part; glycerin, 20 parts; water, 100 parts.

Glycerole of Thymol, with Starch.—Thymol, 1 part; starch glycerole, 100 parts.

Thymol Lotion.—Thymol, 1 part; alcohol, 4 parts.

Thymol Salve.—Thymol, 1 to 4 parts; lard, 100 parts.

Solution of Hypochlorite of Zinc.

Chlorinated lime, 12 troy oz.: sulphate of zinc, 24 troy ozs.; water, 12 pints. Dissolve the sulphate of zinc in three parts of water. Triturate the chlorinated lime, a little at a time, with portions of the water added slowly, and mix thoroughly with the remainder of the water. Allow the lime to subside and decant. Transfer the sediment to a muslin strainer, and drain until sufficient liquid has passed to measure eight pints with the decanted portion of the solution. Mix this with the solution of sulphate of zinc, set

aside for 12 hours, pour off the clear portion of the liquid, and place the remaining portion on a piece of muslin to drain. Mix these liquids, and pour more water on the precipitate, if necessary, so as to make $11\frac{1}{2}$ pints. The disinfecting and bleaching properties of hypochlorous acid are thus combined with the astringent and antiseptic virtues of the zinc compounds. It forms a good substitute for liquor sodæ chlorinatæ for many purposes, and can be also employed as a gargle, injection, or lotion less diluted with water. It is a valuable bleaching liquid for textile fabrics, on account of its freedom from caustic properties.

BORACIC ACID OINTMENT.

1.—(*Lister*).—Boracic acid in very fine powder, 1 part; white wax, 1 part; paraffin wax, 2 parts; sweet almond oil, 2 parts. Spread in a very thin layer upon muslin or upon fine linen. Used in dressing many kinds of wounds and burns in our English and foreign hospitals. 2.—(*Champonnière*)—Boracic acid, 6 grs.; vaseline, 30 grs. Mix. The acid to be very finely powdered and directly incorporated with the vaseline. May be scented with eight drops of balsam of Peru. Antiseptic and non-irritating. Used for excoriations, superficial wounds, eczema, and especially the erythema of the buttocks of infants, and in fetid perspiration of the feet.

CASTOR OIL EMULSION.

Castor oil, 4 troy ozs.; powdered gum arabic, 1 troy oz.; distilled water, $1\frac{1}{2}$ troy ozs.; syrup, cinnamon water, of each 3 fl. ozs.; spirit of cinnamon, 12 minims. Emulsify the oil with the gum and distilled water, then add the other ingredients successively with constant trituration. This emulsion contains thirty-three per cent. of castor oil. 2.—Castor oil, 1 oz.; compound tincture of cardamom, 4 drs.; oil of wintergreen, 4 drops; gum arabic and powdered white sugar, of each 2 drs.; cinnamon water, sufficient to make 4 ozs. Mix. For children, make the confection into a paste, with three parts of coarsely granulated sugar or two parts of compound liquorice powder; and flavour with powdered cinnamon or grated lemon peel. 3.—(*Perschne*).—Castor oil, $\frac{1}{2}$ oz.; one yolk of egg; water, $1\frac{1}{2}$ ozs.; beat up and add 3 drs. of brandy or sherry according to age and strength. To be taken with lemonade.

CATARRH SNUFF.

1.—Canella, powdered, 4 drs.; bayberry, powdered, 6 drs.; bloodroot, powdered, 2 drs.; valerian, powdered, 2 drs.; golden seal, powdered, 2 drs.; oil of lavender, 3 drops; essence of lemon, 10 drops. Mix. 2.—Powdered white hellebore, 2 drs.; powdered orris root, 1 dr.; rice powder, 12 drs.; oil of lavender, cassia, and lemon, of each 1 drop. 3.—*Anti-errhine or Anti-sternutatory Powder*.—Hydrochlorate of morphia, 2 grs.; powdered gum arabic, 2 drs.; trisnitrate of bismuth, 6 drs. From one quarter to one half to be taken as snuff in the course of 24 hours.—*Ferrier*.

CHILBLAIN REMEDIES.

1.—*Unbroken Chilblains*.—The following formula for the relief of itching and irritation is recommended by Dr. Hildreth in *Medical Brief*:—Sulphurous acid, 1 oz.; glycerin, 1 oz.; distilled water, 2 ozs. Apply at night and morning.

2.—Another formula is given by Kilner:—White wax, 2 drs.; spermaceti, 2 drs.; balsam Peru, 1 dr.; olive oil, 3 ozs.; muriatic acid, 2 drs.; water, 6 drs. Make a plaster, and apply.

3.—Dr. R. E. Burges has found the ordinary tincture of iodine very useful as an application to chilblains. He believes that the best preventive for chilblains is to dry the hands thoroughly with a dry towel each time of washing, and to wear warm gloves when out in cold weather.

4.—Herring's saturated solution of sulphurous acid in alcohol added to an equal bulk of glycerin. Rub in at bedtime on the approach of cold weather.

5.—(*Rawle*) Hydrocyanic acid, B. P. 4 drs.; acetate of lead, 15 grs.; rectified spirit, 1 oz.; rose water, 7½ ozs. Mix.

6.—Soak the feet in very hot salt and water for half-an-hour before a fire.

7.—Rub with made mustard for half-an-hour every night and morning before a good fire, or at least until the toe begins to tingle.

8.—Aconite liniment, 2 drs.; belladonna liniment, 2 drs.; dilute hydrocyanic acid, 30 minims; collodion to 2 ozs. Apply night and morning with a brush or feather, and let it dry thoroughly before putting on the stocking or exposure to cold.

9.—Camphorated spirit, 40 parts; hydrochloric acid, 2 parts; Rousseau's laudanum, 2 parts. Mix. Shake before use. Apply night and morning.

10.—(*Dr. Eldridge*) Arnica root, in coarse powder, 20 ozs.; camphor, 1 oz.; rectified spirit, a sufficiency.

11.—Sulphurous acid, 1 oz.; glycerin, 1 oz.; water, 4 ozs.; tincture of arnica, 1½ ozs. Colour with burnt sugar.

12.—One ounce of tannic acid is to be dissolved in about 1 pint of water, and 4 scruples of iodine in a sufficiency of strong alcohol. The two solutions are then mixed together, and enough water added to make up 2 pints of fluid. The best time for using the remedy is at bed-time. The solution is placed on a slow fire in an earthen vessel. The chilblain is then introduced into the fluid, and it is to be kept there until the liquid becomes too hot to be borne. The part is then to be withdrawn, and dried by being kept near the fire.

13.—Liquor of diacetate of lead, 2 drs.; tincture of camphor, B.P., 4 drs.; Mix. Apply with a feather or camel's hair brush and rub in well night and morning.

14.—Spirit of rosemary, 5 drs.; rectified spirit, 1 dr. In mild cases.

15.—Camphorated spirits of wine, 1 oz.; liquor of diacetate of lead, 1½ ozs. Apply three or four times a day.

16.—Hydrochlorate of ammonia, 2 ozs.; strong acetic acid, 16 ozs.; solution of diacetate of lead, 2 ozs.; dilute acetic acid, 16 ozs. Mix.

Broken Chilblains.—1. (*Rouchardat*) Locatelli's balsam, 4 drs.; citrine ointment, 1 dr.; balsam of Peru, 10 drops. Spread on cotton, wool, or lint, and apply night and morning. 2.—Baume tranquille, 30 parts; Rousseau's laudanum, 2 parts; extract of stramonium, $\frac{1}{2}$ part. Rub in gently night and morning. Rousseau's laudanum is twice as strong as that of the B. P. 3.—Tincture of arnica, 20 minims; rectified spirit, 1 oz. To be applied at the distance of two inches from the chilblains if broken, but directly if not. 4.—Messrs. Skey and Squire recommend opium internally in the form of nepenthe with Epsom salts and syrup of ginger night and morning. The dose of nepenthe for an adult is 14 minims.

Chilblain Liniments.—1. Soap liniment, 1 oz.; tr. cantharides, $\frac{1}{4}$ oz.; tr. arnica, $\frac{1}{4}$ oz.; oil cajuput, $\frac{1}{2}$ oz. Mix. 2.—Sal ammoniac, $\frac{1}{2}$ oz.; vinegar, 5 ozs.; spirit of rosemary, $\frac{1}{2}$ oz.; spirit of camphor, $\frac{1}{2}$ oz. Mix. 3.—Spirit of turpentine, 1 oz., camphor, $\frac{1}{4}$ oz.; Goulard's extract, $\frac{1}{4}$ oz.; tincture of opium, $\frac{1}{2}$ oz.

PREPARATIONS OF COD-LIVER OIL.

Administration of Cod-Liver Oil.—1. Mr. Fairthorne recommends the addition to each ounce of cod liver oil of 2 drs. of tomato or walnut ketchup. 2.—Liebig's extract, $\frac{1}{2}$ oz.; extract of celery seeds, $\frac{1}{2}$ fl. oz.; vinegar, 1 oz.; water, 2 fl. ozs.; cod liver oil, 5 fl. ozs. Dissolve the extract of beef in water, add the vinegar and oil, shake well together with the extract of celery.

Cod Liver Oil Emulsions.

1.—*Concentrated Emulsions*.—Fresh cod-liver oil 8, powdered gum arabic 2, and distilled water 3 ozs. troy. Weigh the gum into a wedgewood or porcelain mortar, then the oil, and triturate until the gum is well mixed with the oil. Then weigh into the mixture the distilled water, and triturate the whole briskly until the mixture thickens and acquires a pasty consistence and milky whiteness. Scrape down the portions adhering to the sides of the mortar and to the pestle, and continue the trituration for a short time, after which add such other ingredients as may be desirable, or transfer the concentrated emulsion to a wide-mouthed bottle for future use. Only a week's supply should be made.

2.—*Simple Emulsion*.—Concentrated emulsion, 13 fl. ozs. troy; oil of wintergreen, 26 drops; syrup and water, 3 fl. ozs. Weigh the concentrated emulsion into a mortar, add the oil of wintergreen, and triturate thoroughly. Then gradually add first the water and then the syrup. This emulsion is of the consistence of very thick cream, but mixes readily with water or other liquids. It contains exactly 50 per cent. by volume of oil. The oil of wintergreen disguises the taste, and also acts as a preservative.

3.—Cod-liver oil, 4 ozs.; powdered gum acacia, 1 oz.; essential oil of almonds, 4 minims; syrup, 1 oz.; water, 8 oz. Mix the gum with the oil, then pour on the mixture 2 ozs. of water, and stir until the emulsion is formed; then add the remaining water, essence, and syrup.

Emulsion of Cod-Liver Oil with Calcic and Sodid Hypophosphites.—1. Rub tragacanth, 45 grs., with glycerin 6 drs., and hot water 2 ozs., and let stand until cold. 2.—Dissolve calcium hypophosphite, 36 grs. ; sodium hypophosphite, 18 grs. ; and granulated sugar, $1\frac{1}{2}$ ozs., in sufficient hot water, and filter to make, 5 fl. ozs. Add to No. 1 bitter oil of almonds, 25 minims, or oil of wintergreen 40 minims ; then alternately and gradually cod-liver oil, 6 fl. oz., and No. 2, and stir thoroughly for two or three minutes with an egg-beater.

Emulsion of Cod-Liver Oil with Calcic Phosphate.—Well washed phosphate of calcium, dry and in fine powder, 160 grs. ; pure muriatic acid, a sufficient quantity, about $2\frac{1}{2}$ drs. ; best cod-liver oil, 8 ozs. ; pure glycerin, 1 oz. ; gum arabic, in powder, 1 oz. ; oil of nutmeg, 5 minims ; essence of lemon, 10 minims ; oil of gaultheria, 5 minims ; water, sufficient to make 16 ozs. Dissolve the phosphate in the muriatic acid and dilute with ten volumes of water, until it ceases to produce a white precipitate. Throw on a filter, and wash as long as the washings render a solution of nitrate of silver turbid. To this precipitate, contained in a capsule, add the glycerin, and apply a gentle heat, until the mass is well diffused, and the mixture is nearly clear ; then remove, and mix it with the mucilage, and make the emulsion in the usual way. Preparations are sometimes sold under the names of cod-liver oil, lime, and iron and cod-liver oil and wild cherry. The former can be made by adding two grains of pyrophosphate of iron to each spoonful of the above emulsion ; the latter by shaking two ozs. of the fluid extract of wild cherry bark with 14 ozs. of simple emulsion of cod-liver oil.

Emulsion of Cod-Liver Oil with Glycerin.—Cod-liver oil, 8 ozs. ; glycerin, 2 ozs. ; bitter almond water and cinnamon water, of each 3 ozs. Mix by agitation and form an emulsion.

Emulsion of Cod-Liver Oil with Pancreatin.—Emulsion of cod-liver oil, 14 ozs. ; pancreatin, 2 drs. ; water, 2 ozs. ; bicarbonate of soda, 60 grs. Let the pancreatin swell in the water for a few days ; then triturate the solution with the bicarbonate of soda ; lastly, mix the solution with the emulsion.

Ferrated Cod-Liver Oil—1. Benzoate of iron, 1 part ; cod-liver oil, 100 parts. Dissolve the benzoate of iron, with the aid of a gentle heat, and by frequent agitation in the oil. Benzoate of iron is made as follows :—Benzoic acid, 10 parts ; liquor ammoniæ, about 14 parts ; solution of chloride of iron (ferric) spec. grav. 1.480, 11 parts ; distilled water, q. s. Rub the benzoic acid with three parts of distilled water, and add sufficient water of ammonia, or as much of it as is required to produce a neutral solution. Dilute with 7 parts of warm distilled water and filter. Precipitate by means of the solution of chloride of iron, previously diluted with 20 parts of warm distilled water. Collect the precipitate on a strainer, and wash with distilled water until the washings are no longer rendered cloudy by nitrate of silver, and dry at a temperature of about 86 deg. F.

2.—Dissolve 5 drs. of good oil soap in 25½ ozs. of hot distilled water. When fully dissolved, add a 15 per cent. solution of ferric chloride as long as a cloud is formed, or until 20 drs. of the ferric chloride solution have been added. After the supernatant liquid, which should barely turn blue on the addition of a drop of a solution of potassic ferrocyanide, has been poured off wash the gelatinous precipitate left behind repeatedly and thoroughly with warm distilled water until the precipitate no longer gives a cloud with a solution of silver nitrate. Then dry on a water bath, the operation being assisted by breaking up the clots with a glass rod or spatula. When dry the iron soda thus formed should weigh 277 grains, which is added to 1300 grs. of cod-liver oil, and gently warmed until solution has taken place. The resulting solution is perfectly clear, of a ruddy tint, and devoid of all unpleasant smell and taste,

Cod-Liver Oil with Iodide of Iron.—1.—Iodine, in powder, 5 parts; iron, in powder, 10 parts. Fill a dry flask with cod-liver oil, close it well, and dissolve in it the iodine, frequently shaking. After the solution has stood at rest for some time, and has acquired a specific gravity of 0.932 to 0.937, add the iron and shake until it has assumed a purple violet colour, and no longer imparts a blue tint to a dilute solution of iodide of potassium with gelatinised starch. Agitate the mixture occasionally, during twenty-four hours, then repeat the reaction for free iodine, and if this appears to be absent, let the oil become clear by standing, and transfer it to small amber-coloured vials, which must be completely filled and well stoppered. The product has a purple-violet colour, a specific gravity of 0.937 to 0.940, and contains about 1.23 per cent. of iodine and 0.27 per cent. of iron. 2.—Cod-liver oil, 3½ ozs.; syrup of iodide of iron, ½ oz. Mix. Dose, 2 to 4 drs.

Cod-Liver Oil Jelly.—Cod-liver oil, 5 fl. ozs.; best isinglass, 2 drs., sugar (white) powdered, 1½ ozs.; oil of bitter almonds, 4 drops; oil of allspice, 4 drops; oil of Ceylon cinnamon, 2 drops; water, 1 fl. oz. Place the cod-liver oil, isinglass and water over a water-bath, apply sufficient heat to melt the isinglass, then add the sugar, the essential oils having been mixed with it by trituration, and remove from the fire, stirring the mixture as it cools until it thickens. When cold, a firm jelly will result, which will keep without spoiling for any length of time if put up in corked bottles. It may be taken in water, milk or wine without tasting the oil.

Phosphorated Cod-Liver Oil.—Phosphorus, 1 part, dissolve in olive oil, 200 parts; add cod-liver oil, 9300 parts.

Cod-Liver Oil and Phosphorus and Extract of Malt.—Phosphorus, 1½ grains; cod-liver oil, 12 fl. ozs.; extract of malt (maltine), 12 fl. ozs. Cut the phosphorus into very small shreds under water and dissolve in two ozs. of the oil over the water bath. When solution is complete, mix the oil while still warm with the malt extract and the rest of the oil. The daily dose is one drachm, which contains one-hundredth of a grain of phosphorus.

SUBSTITUTES FOR COD-LIVER OIL.

Tonic Glycerin.—1. Tincture of iodine, 30 drops ; iodide of potassium, 5 grs. ; glycerin, $9\frac{1}{2}$ ozs., by weight. Dose, one tablespoonful before each meal. For children or delicate people replace 1-6th part of glycerin with syrup of raspberries. 2.—Pure glycerin, 620 grains ; rum or cognac, 155 grains. ; oil of peppermint, 1 drop. One third to be taken three times a day.

Glyconine.—Pure glycerin, 10 ozs. ; yolk of eggs, 8 ozs. Mix well together.

Trousseau's Bromo-Iodised Butter.—Fresh butter, 5 ozs. ; iodide of potassium, 1 grain ; bromide of potassium, 4 grains ; kitchen salt, 30 grains. Sufficient for 24 hours. To be eaten, spread on bread like ordinary butter.

CORN DESTROYERS OR SOLVENTS.

1.—Extract of cannabis indica, 5 parts ; salicylic acid, 30 parts ; collodion, 240 parts. Mix and di-solve. Apply with a camel's hair brush, so as to form a thick coating, night and morning, for four consecutive days. After a hot bath on the fifth day, the corn will come out, adhering to the artificial skin of collodion on the toe.

2.—Carbolic acid, 1 part ; distilled water, glycerin, soap liniment, of each 10 parts. Mix. Apply to the corn nightly on gutta percha tissue.

3.—Solution of potash, 1 dr. ; tincture of iodine, 1 dr. ; glycerin, 4 drs. ; water, sufficient to make 1 oz.

4.—Papaine, 2 drs. ; salicylic acid, 10 grs. ; subcarbonate of potash, 1 dr. ; borax, 24 grs. ; glycerin, sufficient. Well incorporate the solid ingredients in a mortar, then gradually add the glycerin and mix the whole together until a viscous paste of suitable consistence is produced. Spread carefully over corns previously rasped. Wash off and re-apply daily. If skin is tender paint round with vaseline.

5.—Nitrate of silver, 1 dr. ; nitro-muriatic acid, 1 fl. oz. Apply with a fine brush.

DENTAL REMEDIES.

Diamond Tooth Cement.

Rub together equal parts by weight of freshly-burnt powdered quick-lime, and of anhydrous phosphoric acid. The mixture must be made rapidly, and the cavity in the tooth immediately filled with it, before it becomes too moist. The anhydrous phosphoric acid may be prepared at a moment's notice by igniting a small piece of dried phosphorus and letting it burn in a confined space of air, say, on a plate covered with a bell-glass or large beaker. Only about 15 grains of each powder are required at a time.

Iodoform Paste for Den'ists.

Dr. Julius Schieff recommends the following paste for killing exposed and painful nerves in cases of hopelessly decayed teeth in place of the dangerous and often inefficient arsenical paste at present in use. Pure iodoform, 620 grains; well washed kaolin, 620 grains; crystallised carbolic acid, 8 grains; oil of peppermint, 10 minims. This paste is used in the same way as the arsenic paste.

Tooth Ache Tincture, &c.

1.—Camphor, 4 ozs.; oil of cloves, 2 drs.; oil of rosemary, 2 drs.; opium, cut into small pieces, 2 ozs.; pellitory root, 4 ozs.; rectified spirit, 4 pint. Macerate. 2.—Cotton wool saturated with a mixture of equal parts of chloral and carbolic acid and allowed to dry, makes a good pledget for toothache. 3.—Tincture of iodine, 10 drops; carbolic acid, diluted, $\frac{1}{2}$ dr.; chloroform, $\frac{1}{2}$ dr. Mix, and apply.

EFFERVESCING SALINE POWDERS.

Effervescing Citrate of Magnesium.

Carbonate of magnesium, 25 parts; bicarbonate of sodium, 91 parts; citric acid, in fine powder, 117 parts; sugar, in fine powder, 21 parts; distilled water, 1 part; strong alcohol, sufficient. Rub the carbonate of magnesium and 75 parts of citric acid with the distilled water and dry the mixture at 122 deg. to 140 deg. F. until it is converted into a dry powder. Then add to it the bicarbonate of sodium, sugar, and the rest (42 parts) of the citric acid, previously mixed together. Damp the mass with stronger alcohol (sp. gr. 0.981 or 94.64 per cent. by volume), pass the damp powder through a sieve having meshes of 1-16th inch in diameter. Dry the product at a gentle heat, and preserve it in well-closed vials.

Effervescing Powder of Rochelle and Epsom Salts.

Tartrate of potassium and sodium, 5 lb. 10 ozs.; bicarbonate of soda, 2 lb. 14 ozs.; tartaric acid, 2 lb. 8 $\frac{1}{2}$ ozs.; sulphate of magnesium, 1 lb. 9 ozs. Each ingredient should be spread on a shallow tray and left in a drying closet for about two or three days at a temperature between 90 deg. and 120 deg. F., then, when perfectly free from moisture, they should be triturated separately in a mortar and passed through a sieve (No. 40) and then thoroughly mixed. The mixture should be put up in well-stoppered bottles; it will be found to bear a close resemblance to a popular proprietary article both in taste and effect. The taste of the Epsom salts is not perceptible.—*R. F. Fairthorne.*

Improved Seidlitz Powder.

Sodium and potassium citrate, 2 drs.; sodium bicarbonate, 40 grs. Dissolve in a half tumbler of water and add tartaric acid, 35 grs.; ammonium chloride, 5 grs. Also dissolve in some water. This draught is especially beneficial in common colds, where a laxative is indicated, being preferable to the ordinary seidlitz powder.

Salines which may be Substituted for Fruit Salt.

1.—Bicarbonate of soda, bitartrate of potash, of each 4 ozs. ; tartaric acid, Epsom salts, of each, 3 ozs. ; white sugar, 4 ozs. Dry, and powder each salt separately, then mix in a dry mortar and put into bottles.

2.—Bicarbonate of soda, tartaric acid, and cream of tartar, all powdered and dried, of each 1 oz. ; white sugar, powdered and dried, 3 ozs. ; Epsom salts, powdered and dried, 4 drs. ; essence of lemon, sufficient. Mix.

3.—Tartrate of soda, cream of tartar, tartaric acid, bicarbonate of soda, all powdered and dried, of each 1 oz. ; white sugar, powdered and dried, 2 ozs. Mix. Keep in air-tight bottles.

Laxative Fruit Preparations.

Lozenges.—1. Wash 1 lb. of dried prunes, place in a saucepan over a sand-bath, with sufficient water to cover them ; when they are quite soft, and the greater part of the water has been evaporated, rub in a large mortar, so as to crush the fruit, but not the kernels. Transfer to a coarse straining cloth, and squeeze the pulp through it. This should be about the consistence of honey in the winter. If not, it can be made so by evaporating it over a water-bath. This makes the excipient to form the mass with compound liquorice powder, which is made into a pilular consistence with a prune taste, and divided into lozenges weighing about half a drachm each, which act as a laxative in doses of one or two.

2.—A purgative lozenge can be made from the following :—Senna leaves, 4 ozs. ; sugar, 4 ozs. ; jalap, $\frac{1}{2}$ oz. ; gum arabic, 6 drs. ; aromatic powder, 6 drs. Prune paste, sufficient quantity to make a mass and divide into large troches.—*Fairthorne.*

3.—Aqueous extract of senna (first deprived of its resin), 40 parts ; pulp of purging cassia, 20 parts ; pulp of tamarinds, 5 parts ; Spanish extract of liquorice, 4 parts ; resin of scammony, 4 parts ; sugar and tartaric acid, 49 parts. Make into large oval lozenges of 82 grains each, which are dipped in melted chocolate and afterwards covered with a crystalline coat of pure cane sugar.

Tropic Fruit Laxative.

Jalap tubers, powdered, 5 parts ; senna leaves, 5 parts ; sugar, 5 parts ; pulp of E. I. tamarinds ; 30 parts. Make lozenges to weigh 45 grains each, coat with chocolate and sugar, and wrap in tin foil. It is essential that the E. I. tamarinds be used and the pulp be of the consistency of a stiff extract in order to obtain the suitable consistence. The mass is to be rolled out with a rolling pin to $\frac{1}{4}$ inch thickness, and then with a tin mould of the dimensions above mentioned cut into lozenges. The chocolate coating should be done by a confectioner. This preparation should be made and used while perfectly fresh, as it is liable to become worm-eaten if kept too long.

PATENT OR PROPRIETARY MEDICINES AND PREPARATIONS.

The following selections of recipes are given as imitations of the respective preparations, but of course they cannot be guaranteed to be identical in composition. They are arranged, as a rule, under the name of the preparation:—

Asthma Cure (Himrod).

This remedy, which came into popular notice during the illness of Lord Beaconsfield, is said by a writer in Stearns's "New Idea" to be imitated by a coarsely-ground mixture of stramonium leaves and lavender flowers, with a little benzoin. The whole sprinkled with sufficient saturated solution of potassium nitrate and chlorate to make the powder burn well; the patient to inhale the fumes.

Blood Mixture (Clarke's).

Iodide of potassium, 64 grs.; chloric ether, 4 drs.; liquor potassæ, 30 minims; water, 7½ ozs.; burnt sugar sufficient to colour. The chloric ether is made by dissolving one part by volume of chloroform in nineteen parts by volume of alcohol. The liquor potassæ is a solution of caustic potassa of sp. gr. 1.058.

Bronchial Troches (Brown's).

The following is said to be the formula of the above:—Extract of liquorice, 16 ozs.; sugar, 24 ozs.; cubebs, 4 ozs.; gum arabic, 4 ozs., all in fine powder; extract of conium, 1 oz. Mix, and with sufficient water make troches of the proper size.

Chlorodyne.

Several analyses of Dr. Collis Browne's chlorodyne have been published. The following formula, devised by Dr. J. H. Gilman is said to be equal from a medical point of view, if not superior to Browne's:—Chloroform, 2 fl. ozs.; ether, ½ fl. oz.; alcohol (95 per cent.), 7 ozs.; essence of peppermint, 6 drs.; tincture of capsicum, 6 drs.; compound tincture of cardamoms, 2 ozs.; fluid extract of liquorice, 2 ozs.; dilute hydrocyanic acid, 1 oz.; glycerin, 16 ozs.; sulphate of morphia, 40 grs. Put the ingredients, in the order given, into a quart bottle and shake till solution is effected. Dose: The same as Browne's chlorodyne, for an adult from ten to thirty drops.

Daffy's iŵir.

Jalap, 1 oz.; senna, 2½ ozs.; coriander seed, 2½ drs.; aniseed, 2 drs.; alcohol, sufficient; liquorice root, 2 drs.; elecampane root, 2 drs., simple elixir, 1 pint. Digest with the alcohol for one week and transfer to a percolator. Percolate 6 ozs. and add the simple elixir, which is made from orange flower water, 8 ozs.; bitter almond water, 2 ozs.; simple syrup, 2 ozs.; glycerin, 2 ozs.; alcohol, 2 ozs. Mix.

Dalby's Carminative.

Carbonate of magnesia, 6 ozs.; carbonate of potash, 2 drs.; sugar, 1 lb.; laudanum, 3 ozs.; oil of carraway, fennel, and peppermint, of each 10 drops; brandy, 4 ozs.; prepared chalk, 2 ozs. Mix. Shake before dispensing. Strength, 1 grain of opium to the ounce.

Diarrhœa Mixture (Dr. Squibb's).

Tincture of opium, spirits of camphor, and tincture of capsicum, of each 1 fl. oz.; chloroform, 3 drs.; stronger alcohol, to 5 fl. ozs. Adults, 1 teaspoonful; children proportionally less, down to from 1 to 10 drops for an infant.

Extract of Soap (Hudson's).

Skalweit gives the following receipt for this well-known cleansing material:—Dry soap, 15 parts; dry carbonate of soda, 30 parts; water, 55 parts.

Fever Drops (Nicolaiieff).

These drops are largely used with great benefit by the fever-stricken inhabitants of the banks of the lower Volga:—Sulphate of quinine, 1 dr.; quinoidine, 2 dr.; dilute sulphuric acid, 1 fl. dr.; alcohol, 80 per cent., 1 fl. oz. Dissolve and take 20 drops every two hours.

Glacialine.

Boracic acid, 18 parts; borax, 9 parts; sugar, 9 parts, glycerin, 6 parts. Rub up to a dry powder.

Godfrey's Cordial.

Tincture of opium, 6 ozs.; treacle, 4 pints; alcohol, 8 ozs.; water, 6½ pints; potassium carbonate, 5 drs.; oil of sassafras, 1 dr. Dissolve the carbonate in the water and add the treacle. Heat over a gentle fire till it simmers; skim and add the other ingredients, dissolving the oil of sassafras in the alcohol. Mix thoroughly. The strength is a little more than one grain of opium to the ounce.

Hair Restorers.

Hanvy de Bwler's Plant Hair Balsam.—The bottle contains 100 cubic centimetres of liquid, consisting of sugar of lead, 12 parts; precipitated sulphur, 6 parts; water to 100 parts, with a small quantity of glycerin, pyrogallic acid and Eau de cologne.

Allen's—1. Sulphur, 5·6 parts; lead acetate, 8 parts; glycerin, 100 parts; water, slightly perfumed, 200 parts. 2.—Precipitated sulphur, 26 grs.; powdered cassia, 3 grs.; glycerin, 1½ oz. by weight; acetate of lead, crystallised, 1 gr.; distilled water, 2¼ oz. Aromatised with a perfume containing nitrobenzol. The sugar of lead and the sulphur are first rubbed together, then the cassia and the water and glycerin added.

Hall's.—Milk of sulphur, 1 dr.; sugar of lead, 1 dr.; salt (common), 2 drs., glycerin, 8 fl. ozs.; bay rum, 2 fl. ozs.; Jamaica rum, 4 fl. ozs.; water, 16 fl. ozs. Mix. Shake before using.

Holloway's Pills.

1.—Aloes, 36 grs.; jalap, 18 grs.; ginger, 18 grs.; myrrh, 18 grs.; all in fine powder. Mix and make into pills.

2.—(*Kilner*) Aloes, 2 drs.; rhubarb, 1 dr.; capsicum, 20 grs.; saffron, 5 grs.; sulphate of soda, 5 grs. For 100 pills. Dose, 1 to 3.

Hop Bitters.

Tincture of hops, ½ oz.; tincture of buchu, 3 drs.; tincture of senega, 3 drs.; tincture of podophyllin, ½ oz. (4 grs. podophyllin to 1 oz. rectified spirit of wine); tincture of cochineal, 20 drops; distilled water to 20 ozs. Mix.

Hydroleine (Dr. Bartlett's).

One dose, *i.e.*, two teaspoonfuls, has the following composition:—Pure cod-liver oil, 30 minims; distilled water, 30 minims; soluble pancreatin, 6 grs.; sodic carbonate, $\frac{3}{4}$ gr.; boric acid, $\frac{1}{4}$ gr.; hyocholic acid, 1-20th gr. Two teaspoonfuls to be taken three times a-day, either alone, or with double the quantity of water at meal time.

Injection Brou.

Distilled water, 100·0 parts; sulphate of zinc, 0·5 parts; sugar of lead, 200·0 parts; tincture of catechu, 200·0 parts; Sydenham's laudanum, 200·0 parts. Mix.

Tamar Indien.

Tamarind pulp, 450 parts; powdered cane sugar, 40 parts; powdered milk sugar, 60 parts; pure glycerin, 50 parts. Mix with constant stirring at a gentle heat, and evaporate down to the consistency of a syrup. Then incorporate with finely powdered senna leaves, 50 parts; aniseed, finely powdered, 10 parts; oleo-saccharate of lemon, 3 parts; tartaric acid, 3 parts. Make the ingredients into a plastic mass with the fingers, and form the whole into oblong tablets of an inch and a half long, by nine-tenths of an inch broad, and half an inch thick, and sprinkle with the following powder:—pure cream of tartar, 5 parts; white sugar, 35 parts; sugar of milk, 35 parts; gum tracaganth, 3 parts; tartaric acid, 2 parts; red sanders wood, 25 parts, all in fine powder. Mix. Allow the tablets to dry in a warm place for an hour, and wrap them in tinfoil.

Mother Seigel's Syrup.

Concentrated decoction of aloes, B.P., (1 to 4) 2 ozs.; borax, 20 grs.; powdered capsicum, 2 grs.; powdered gentian, 30 grs.; oil of sassafras, 5 minims; oil of wintergreen, 2 minims; rectified spirit, 2 drs.; liquor of taraxacum, 2 drs.; treacle to 4 ozs. Dissolve the oils in the spirit, and rub the capsicum to a fine powder in a mortar, and mix all the ingredients. Shake the bottle so as to mix the sediment. For tonic or alterative effect, take 15 to 30 drops three times a day, instantly after eating, in half a wine-glass of cold water. The dose should be large enough to secure a free movement of the bowels daily. For cathartic effect, take one to two teaspoonfuls at bedtime. If this is too little to move the bowels freely, increase the dose; if too much, diminish.

Pain Killer (Perry Davis's).

1.—The following imitation has been published:—Spirit of camphor, 2 ozs.; tincture of capsicum, 1 oz.; tincture of guaiacum, $\frac{1}{2}$ oz.; tincture of myrrh, $\frac{1}{2}$ oz.; alcohol, 4 ozs. For external application.

2.—Spirit of camphor, about 2 ozs.; tincture of camphor, about 1 oz.; tincture of guaiacum, about $1\frac{1}{2}$ ozs.; tincture of myrrh, about $\frac{1}{2}$ oz.; and alcohol colour, about 3 ozs.

Pectoral Drops (Bateman's).

Tincture of opium, 1·5 parts ; benzoated tincture of opium, 20·0 parts ; tincture of Canadian castoreum, 5·0 parts ; powdered cochineal, 1·0 parts, Mix, shake for an hour, and filter through glass wool. Dose 20 to 30 drops morning and evening.—(*Hager*).

Pectoral Lozenges (Southworth's).

Ammonium chloride, 2 ozs. ; extract of liquorice, 1 oz. ; extract Indian hemp, $\frac{1}{4}$ oz. ; fluid extract of ipecacuanha, 1-8th oz. ; fluid extract of senega, 3-8th oz. ; gum tragacanth, 2 ozs. ; sugar, 18 ozs. Make into 480 lozenges. Some flavouring material may be added, as, for instance, essence of vanilla. Dose, 1 to 3 lozenges occasionally.

Pulmonic Wafers (Locock's).

Lump sugar, 2 lb. ; starch, 2 lb. ; powdered gum arabic, 1 lb. Make into a lozenge mass, with vinegar of squills, oxymel of squills, and wine of ipecac., equal parts, gently evaporated to one-sixth of their weight, with the addition of from four to five ounces of lactucarium. Divide the mass into half-inch squares, weighing about seven grains and a half each when dry.

(*Anon.*).—Hydrochlorate of morphia, $1\frac{1}{2}$ drs. ; benzoic acid, 1 dr. ; tartarised antimony, 10 grs. ; powder of squills, $1\frac{1}{2}$ ozs. ; powder of ipecacuanha, 2 drs. ; black currant paste, to 2 lb. Divide into lozenges of 15 grs.

Rowland's Macassar Oil.

According to the *Pharm. Rundschau*, the original formula of this preparation is the following:—Cassia buds ground, 100 parts ; alkanet, 100 parts ; olive oil, 2600 parts ; digest for three days, filter and add oil of Ceylon cinnamon, 86 parts ; oil of bitter almonds, 28 parts ; otto of roses, 36 parts ; essence of bergamot, 16 parts.

Sarsaparilla (Ayers's).

Fluid extract of sarsaparilla, 3 ozs. ; fluid extract stillingia, 3 ozs. ; fluid extract of yellow dock, 2 ozs. ; fluid extract of podophyllin, 2 ozs. ; sugar, 1 oz. ; iodide of potassium, 90 grs. ; iodide of iron, 10 grs. Mix.

Sedative Water (Raspail's).

	No. 1.	No. 2.	No. 3.
Water of ammomia - - -	12	16	20
Spirit of camphor - - -	1	1	1
Chloride of sodium - - -	6	6	6
Distilled water - - -	94	92	90

Mix the first two ingredients, then add the water, and dissolve the chloride of sodium in the liquid.

Soothing Syrup (Mrs. Winslow's).

Syrup of morphia, 1 oz. ; essence of aniseed, $\frac{1}{2}$ oz. ; syrup of balsam tolu, $7\frac{1}{2}$ ozs. Mix.

Steer's Opodeldoc.

White castile soap, 1 lb. ; camphor, $2\frac{1}{2}$ ozs. ; oil of rosemary, $\frac{1}{2}$ oz. ; oil of origanum, 1 oz. ; alcohol, 4 pints. Dissolve over a water bath, strain, and add liquor ammoniæ, 5 ozs., and pour into a wide mouthed bottle.

PHOSPHATIC PREPARATIONS.

Ferric Hypophosphite.

Dissolve 150 grs. of the hypophosphite of calcium in 4 fl. ozs. of distilled water, if necessary, by the aid of gentle heat, and filter the solution. To the cold solution carefully add solution of ferric chloride in small portions at a time, and stir constantly, so long as a precipitate is produced. Towards the last a small portion of the clear supernatant liquid is removed after each addition and tested with dilute ferric chloride solution, allowing it to stand for several minutes if no immediate turbidity occurs. If the liquid remain clear after several minutes' standing, the precipitation may be regarded as complete. Collect the precipitate upon a close muslin cloth, drain well, and express firmly ; then pour upon the magma one fluid ounce of distilled water, and express again. The magma may then at once be dissolved by the aid of citrate of potassium. The product is equal to 128 grs. of dry ferric hypophosphite.

Improved Syrup of the Hypophosphites with Iron.

Take of hypophosphite of calcium 256 grs. ; hypophosphite of sodium, 192 grs. ; hypophosphite of potassium, 128 grs. ; ferric hypophosphite. 66 grs. ; citrate of potassium, 96 grs. ; white sugar, 13 troy ozs. ; orange-flower water, 1 fl. oz. ; distilled water, a sufficiency. Dissolve the calcium, sodium, and potassium hypophosphites in seven fluid ounces of the water, if necessary by the aid of a gentle heat, and filter the solution. Triturate the magma of the ferric hypophosphite with the citrate of potassium, add the solution of the other hypophosphites, and when complete solution is effected, the orange-flower water and sufficient distilled water are added to make the whole measure 9 fl. ozs. In this dissolve the white sugar, without heat, and filter the resulting syrup through paper. A fl. dr. of this syrup contains 2 grs. of the calcium, $1\frac{1}{2}$ grs. of the sodium, 1 gr. of the potassium, and $\frac{3}{4}$ gr. of the ferric hypophosphites.

Syrup of Hypophosphite of Iron.

Dissolve 128 grs. of ferric hypophosphite by the aid of 128 grs. of citrate of potassium, in 1 fl. oz. of orange-flower water, and sufficient distilled water to make the solution measure 9 fl. ozs. In this dissolve 13 troy ozs. of white sugar, and filter the resulting syrup. One fl. dr. of this syrup contains 1 gr. of the ferric hypophosphite.—(C. Lewis Diehl).

Compound Syrup of Hypophosphites (Churchill).

Calcium hypophosphite, 256 grs.; sodium hypophosphite, 192 grs.; potassium hypophosphite, 128 grs.; iron hypophosphite, moist, 69 grs.; hypophosphorous acid, 240 grs.; syrup of vanilla, 8 fl. ozs.; boiling water, sufficient. Rub the hypophosphites in a capacious mortar, with 4 fl. oz. of hot water and the hypophosphorous acid. Allow the mixture to deposit during a few minutes, decant the clear solution, and triturate the residue with more hot water until the salts are dissolved. Filter the solution and bring it to the volume of 8 fl. ozs. by passing more water through the filter if necessary. Add the syrup of vanilla, and, if any cloudiness should appear, remove this by the addition of a further small quantity of hypophosphorous acid.

The American Pharmaceutical Association has adopted the following formula:—Calcium hypophosphite, 256 grs.; sodium hypophosphite, 192 grs.; potassium hypophosphite, 128 grs.; iron sulphate (green), 185 grs.; hypophosphorous acid, spec. grav., 1.036, 9 fl. drs.; sugar, 12 troy ozs.; water, sufficient. Dissolve 96 grs. of the calcium salt in 4 fl. ozs. of water with the aid of heat, and acidulate the solution with a small proportion of the acid. Dissolve the sulphate of iron in 2 fl. ozs. of water; mix the two solutions, allow the mixture to stand a short time, and pour it on a paper filter, wash the precipitate on the filter with a small quantity of water acidulated as before, and preserve the filtrate. Dissolve the remainder of the calcium salt with the other hypophosphites in 4 fl. ozs. of water with the aid of heat, adding the remainder of the hypophosphorous acid. Mix the solution and the reserved filtrate, adding enough water to complete 10 fl. ozs., and pour the liquid into a bottle containing the sugar. Agitate the mixture occasionally, until the solution is complete, and filter through paper, if necessary.

Parrish's Syrup.

Calcium hypophosphite, $1\frac{1}{2}$ ozs.; sodium hypophosphite, $1\frac{1}{2}$ ozs.; potassium hypophosphite, $\frac{1}{2}$ oz.; sugar, 1 lb. 12 ozs.; hot water, 20 ozs.; orange flower water, 1 oz. Make a solution of the mixed salts in the hot water, and filter through paper; dissolve the sugar in the solution by the aid of heat; strain and add the orange flower water. Dose, one teaspoonful, containing nearly 5 grs. of the mixed salts.

Syrup of the Hypophosphites of Iron, Manganese, Calcium, Quinine, and Strychnine.

Ferric hypophosphite, 128 grs.; manganic hypophosphite, 48 grs.; calcium hypophosphite, 128 grs.; sodium hypophosphite, 96 grs.; quinine hypophosphite, 64 grs.; strychnine hypophosphite, 2 grs.; solution of hypophosphorous acid, sufficient to dissolve; syrup, enough to complete 1 pint. A teaspoonful three times a day before meals has proved a very efficient tonic

PICK-ME-UP.

Spirit of chloroform, compound tincture of cardamoms, aromatic spirit of ammonia, simple syrup, of each 4 ozs. Mix. Dose, 2 drs. in two tablespoonfuls of water.

MILD TONIC BITTERS.

Gentian root, 1 oz. ; cardamon seed, $\frac{1}{4}$ oz. ; tincture of fresh orange peel, 2 to 1 drs. ; alcohol, $2\frac{1}{2}$ ozs. ; simple syrup, 2 ozs. ; water, sufficient to complete 1 pint. Mix together the tincture, the alcohol, and five ozs. of water, and with the mixture moisten the gentian and the cardamom, previously reduced to a coarse powder. After 24 hours' contact, pack the drugs in a percolator, and exhaust them first with the alcoholic menstruum and then with enough water to complete fourteen ounces of percolate. Add to this the syrup and filter through paper.

MEDICATED SOAPS.

Guaiacum Soap.—Guaiacum, 2 parts ; potash, 1 part ; water, sufficient. Rub together and add enough water, in drops, to produce a mass of pilular consistence. It should not be kept in stock.

Iodine Soap.—Cocoa-nut oil, 10 lb. ; soda lye, 38 deg. B., 5 lb. ; when fully saponified add iodide of potassium, 8 ozs. dissolved in water, 4 ozs.

Naphthalene Soap.—Cut up ordinary soap of good quality into shavings and dissolve two parts in three of water, by the aid of heat. When solution is complete, withdraw the fire, and stir in three parts of sublimed naphthalene till the whole forms a homogeneous mass. Heat the mixture, stirring all the time until boiling point is reached, and pour into moulds. The soap thus obtained dries in from ten to twelve days. The addition of naphthalene to soap increases its deterative qualities.

Sulphur Soap (Camphorated).—Camphor, $\frac{1}{2}$ oz. ; dissolve $26\frac{1}{2}$ lb. of melted cocoa-nut oil. Saponify with $3\frac{1}{2}$ lb. of soda lye, 38 deg. B., and add $2\frac{1}{4}$ lb. of sodium sulphide, dissolved in half its weight of water, working all well together.

Tannin Soap.—Cocoa-nut oil, 20 lb. ; soda lye, 38 deg. B., 10 lb. ; saponify and add 9 ozs. of tannin, previously dissolved in sufficient rectified spirit and work well together. Perfume with balsam of peru, 1 oz. , oil of cassia, 160 grs. ; oil of cloves, 160 grs.

Tar Soap.—Cocoa-nut oil, 35 lb. ; soda lye, 40 deg. B., 18 lb. ; Stockholm tar, 3 lb. Melt the fat, stir in the tar, and then saponify.

VASELINE PREPARATIONS.

Carbolised Vaseline.—Vaseline, 20 ozs. ; carbolic acid crystals, 1 oz. Melt each separately and mix.

Blistering Vaseline.—Powdered cantharides, 60 parts; yellow vaseline, containing 10 per cent. of wax, 960 parts. The cantharides and the vaseline are melted together in a water bath and allowed to digest for twenty-four hours, stirring from time to time; press, pass through a cloth or paper filter, and stir the filtrate till quite cool.

Iodised Vaseline.—Pure iodine, 10 parts; potassic iodide, 5 parts; vaseline, with 10 per cent. of wax, 40 parts; water, sufficient. Dissolve the salt and iodine in the water, melt the vaseline over a water-bath and mix.





VETERINARY REMEDIES.

Astringent Powder for Calves.

Compound powder of ipecacuanha, 2 scruples; compound powder of cinnamon, 2 drs.; precipitated chalk, 2 drs. Mix.

Black Oils.

1.—Olive oil, 1 lb.; oil of turpentine, 2 ozs. Mix, and add carefully sulphuric acid, 6 drs.

2.—Linseed oil, 2½ lb.; oil of turpentine, 1 lb.; sulphuric acid, 12 ozs., by weight. Add the sulphuric acid gradually and stir continually; when cold, add oil of turpentine, ½ lb.; oil of amber, 1 oz.

Blistering Liniment.

1.—Olive oil, 4 ozs.; oil of turpentine, ½ oz.; oil of origanum, ½ oz.; powder of cantharides, 1 oz. Mix.

2.—Rectified spirit, 2 ozs.; liquor ammoniæ, 2 ozs.; oil of turpentine, 1 oz.; oil of origanum or oil of rosemary, 1 oz.; powder of cantharides, 6 drs. to 1 oz. Mix.

3.—Powder of cantharides, 1 oz.; boiling water, 6 to 8 ozs. Macerate for 24 hours, and add rectified spirit, 4 ozs.; and solution of corrosive sublimate in hydrochloric acid, 1 dr. The latter to be added when the mixture is used. Keep well corked for two or three weeks. Strain through blotting-paper and use the transparent liniment, or employ it as it is, shaking up well before applying.

Blistering Ointment.

Tallow, 2 ozs.; Venice turpentine, 1 oz.; oil of turpentine, ½ oz.; powdered cantharides, ½ oz.; cantharides plaster, 2 ozs. Melt.

Cleansing Drink.

1.—Myrrh, 6½ drs.; gentian, 7 drs.; turmeric, 7 drs.; powdered ginger, ¼ oz.; oil of carraway, 20 drops. Mix and administer in warm beer.

2.—Turmeric, aniseed, liquorice root, cummin seed, spermaceti, grains of paradise, all in fine powder, and castile soap, of each ½ oz. Mix and give in a quart of warm ale. Repeat next morning if necessary.

Condition Powder.

Elecampane root, fœnugreek seed, flax seed, juniper berries, poplar bark, rosin, mustard bran, of each 4 parts; liquorice root, ginger root, sulphate of soda, chloride of sodium, sulphur, sulphate of iron, of each 3 parts; carbonate of soda, gentian root, of each 2 parts; black sulphuret antimony, nitrate of potash, coriander seed, valerian root, of each 1 part; blood root, lobelia, mandrake root, and exsiccated alum, of each $\frac{1}{2}$ part.

Condition Powder for Lambs.

Sublimed sulphur, 1 lb.; nitre, 1 lb.; anise and cummin seeds, in fine powder, $\frac{1}{2}$ lb. each; powdered fœnugreek, 1 lb.; diapente, 2 lb. (equal parts of gentian, turmeric, bay berries, and mustard). Mix. A small tablespoonful every day.

Cordial or Condition Balls.

1.—Diuretic ball (see below), 24 ozs.; powdered fœnugreek, 8 ozs.; sublimed sulphur, 8 ozs.; powdered carraway seeds, 4 ozs.; powdered aniseed, 4 ozs.; treacle enough to make a mass. Each ball should weigh $1\frac{1}{2}$ ozs.

2.—Carraway seed, ginger, aniseed, turmeric, flowers of sulphur, of each 2 ozs., sugar and liquorice root, of each 4 ozs., all in fine powder; oil of aniseed, 2 drs. Make into a mass with treacle, and divide into balls of $1\frac{1}{4}$ ozs.

Cordial Drink.

Ginger, turmeric, elecampane and diapente, all in fine powder, of each 6 drs.; oil of carraway, $\frac{1}{2}$ dr. Mix. For garget drink, add one oz. of Venice treacle and omit the oil of carraway.

Cordial Powder.

Fœnugreek seed, 8 ozs.; aniseed, 4 ozs.; carraway seed, 4 ozs.; turmeric, 4 ozs.; coriander seed, 4 ozs., all in fine powder. Mix.

Cough Balls.

1.—Powdered squills, 3 ozs.; gum ammoniac, 1 oz.; tartar emetic, 6 drs.; cordial mass (see above), 12 ozs. Make into a mass and divide into 12 balls.

2.—Camphor, squills, in fine powder, of each 1 dr.; gum ammoniac, 2 drs.; opium, 10 grains; cordial mass, $\frac{1}{2}$ oz. Mix and make into one ball.

Diuretic Balls.

Juniper berries, $\frac{1}{2}$ lb.; soft soap, $\frac{1}{4}$ lb.; resin, nitre, of each, $\frac{1}{2}$ lb.; Barbadoes ginger, 2 ozs.; camphor, 2 drs.; liquorice root, 6 ozs.; crocus of antimony, $\frac{1}{4}$ lb.; treacle, $\frac{1}{2}$ lb.; carbonate of potash, 1 oz.; oil of juniper, 2 drs.; oil of turpentine, $\frac{1}{2}$ oz. The solid ingredients all to be in fine powder. Mix and make into balls of $1\frac{1}{2}$ ozs. each.

Dressing for Lambs.

White arsenic, $2\frac{1}{2}$ lb.; soft soap, 2 lb.; spirit of turpentine, 5 pints; water, 25 gallons. Mix. This is sufficient for 100 lambs, allowing two pints for each.

Drink for Black or Red Water.

Turmeric, gentian, diapente and elecampane, all in fine powder, of each 1 oz. ; oil of carraway, 20 drops. To be given in mild beer.

Drying Drink.

Alum, 3 ozs. ; carbonate of potash and armenian bole, of each 2 ozs., all in fine powder. Dissolve in a pint and a half of small beer or water.

Fever Balls.

Camphor, 1½ ozs. ; tartar emetic, 6 drs. ; nitre, 3 ozs. ; elecampane, 6 ozs., all in fine powder. Make into a mass with treacle and divide into 12 balls.

Fever Drink.

Glauber salt, ½ lb. ; nitre and carraway seed, of each 1 oz. ; tartar emetic, 1 dr. ; turmeric, 1 oz., all in fine powder. Mix and give in gruel.

Foot Rot Lotion.

1.—Chloride of antimony, 1 part ; hydrochloric acid, sufficient ; water, 10 parts. Triturate the chloride of antimony with the hydrochloric acid in a mortar, enough being added to prevent a white precipitate being formed when the water is added. When smooth add the water little by little.

2.—Sulphate of copper and sugar of lead, of each 4 ozs. ; acetate of copper, 8 ozs., all in powder. Mix and simmer in 4 pints of good vinegar for quarter of an hour, and add spirits of turpentine 2 pints. Shake well before using.

Foot Ointment.

1.—Yellow wax, lard, Venice turpentine, oil, treacle, of each equal parts. Melt the lard over a slow fire, and add the wax cut up in small pieces, then add the Venice turpentine and the oil. When thoroughly mixed take off the fire, add the treacle, and stir till cold.

2.—Soot, solution of gutta-percha, of each 1 part ; solution of asphaltum, 2 parts ; heavy paraffin oil and coal tar naphtha, of each 10 parts. The solution of gutta-percha is made by dissolving one part of the gum cut into small shavings in 19 parts of coal tar naphtha and the asphaltum solution by treating one part of asphaltum, which must be first melted over the fire, with two parts of oil of turpentine. The soot is rubbed up with the coal tar naphtha, after which the solution of the asphaltum, then the gutta-percha solution, and lastly the paraffin, are incorporated together by the aid of a gentle heat

Gripe Drink for Horses.

Laudanum, 1 oz. ; spirits of turpentine, 2 ozs. ; olive oil, 8 ozs. Mix and give the whole or a part as required.

Preparation for Lameness in Horses.

Cantharides, 8 ozs. ; camphor, 2 ozs. ; euphorbium, 8 ozs. ; oil of origanum, 1 oz. ; castile soap, 3 ozs. ; methylated spirit, 6 pints. Macerate for 14 days and filter. (Similar to Leeming's Essence).

Oil for Mange.

Sulphur vivum and spirit of tar, of each 4 ozs. ; train oil, 1 lb. Mix.

Pig Powder.

Madder, sublimed sulphur, resin, and turmeric, all in fine powder, of each $\frac{1}{2}$ lb. ; nitre, black antimony, and gentian, all in fine powder, of each 4 ozs. Mix.

Ringworm in Dogs.

Having well washed and dried the dog, apply diligently for ten minutes or more one of the following ointments, on and around the affected parts of the skin :—Biniiodide of mercury, 10 grs. ; lard or vaseline, 1 oz. Mix well. This should be repeated at the end of a week, after washing as before. 2. Iodine, 20 grs. ; iodide of potassium, 15 grs. ; spirits of wine, 1 dr. ; lard, 1 oz. Mix. The iodine and iodide to be first rubbed down with the spirit, then incorporated with the lard. Use every other day. Be careful to remove the dog to a fresh place.—*Leeney.*

Scab Ointment.

1.—Dry liver of sulphur, 10 parts ; carbonate of potash, 2 parts ; lard, 300 parts. Mix.—(*Trasbot.*)

2.—Benzoline, 300 parts ; oil of tar, 100 parts ; coal tar, 100 parts ; soft soap, 100 parts ; spirits of turpentine, 100 parts'. Mix the soft soap in a mortar with the coal tar until the mixture is perfectly smooth, and add the benzoline and the spirits of turpentine.

For Scours in Calves.

1.—Chalk mixture, $1\frac{1}{2}$ lb. ; powdered tracaganth, 4 drs. ; cassia, 3 drs. ; opium, 1 dr. ; turmeric, 3 drs. ; ginger, 3 drs., all in fine powder ; oil of cassia, 15 drops. Mix and give $\frac{1}{4}$ pint every four hours.

2.—Prepared chalk, $\frac{1}{2}$ oz. ; tincture of opium, 40 drops ; tincture of catechu and kino, of each, 1 dr. ; water, to 6 ozs.

For Scours in Lambs.

1.—Carbonate of soda, 1 dr. ; ginger, finely powdered, 2 drs. ; compound tincture of cardamoms, 3 drs. ; prepared chalk, 6 drs. ; tincture of opium, 2 drs. ; compound chalk mixture, to 12 ozs. Mix. A tablespoonful twice a day.

2.—Prepared chalk, 4 ozs. ; powdered gum acacia, 3 ozs. ; carbonate of soda, 1 oz. ; tinctures of kino and opium, of each 2 ozs. ; oil of cassia, 40 drops ; water to 45 ozs. Mix. One tablespoonful twice a day.

Drink for Strangles.

Gentian and nitre, of each 4 ozs. ; ginger, 1 oz., all in fine powder ; oil of carraway, 30 drops. Mix, divide into 4 doses and give one in a quart of warm mild beer every two days.

Embrocation for Strangles.

Soap liniment, 1 oz. ; rape seed oil and spirit of hartshorn, of each $1\frac{1}{2}$ ozs. Mix.

Surfeit Balls.

Nitre and sublimed sulphur, of each 3 drs. ; sulphide of antimony, 2 drs. ; linseed meal and honey, enough to make two balls.

Vesicant Powder for Dogs.

Tartar emetic and bichromate of potash, in fine powder, of each 5 parts ; lard or vaseline, 250 parts. Mix.

COCHINEAL COLOUR.

Erratum.—Substitute the following for recipe for cochineal colour on page 7 : Cochineal, 1 oz. ; carbonate of potassium, $\frac{1}{2}$ oz. ; powdered alum, $\frac{1}{2}$ oz. ; cream of tartar, 1 oz. ; water, 8 fl. ozs. ; glycerin, 8 fl. ozs. Reduce the cochineal to fine powder, add the carbonate of potassium, triturate with 2 fl. ozs. of water, and boil till the froth ceases ; allow the mixture to stand one hour ; add the alum and cream of tartar successively, and, when effervescence has ceased, the remaining water ; filter, and add the glycerin.



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