

where he could actually sell his own article. Perhaps the spirit of substitution is breathing under this. If so, let me say that that is not what is meant. In many instances customers would prefer the preparation made by the druggist himself, whose composition is exactly known to him, than an advertised article of which he can know only what the manufacturer cares to tell him. Indeed, it would appear as if our information concerning the much advertised brands of chlorodyne has been incorrect. We now have it on the statement of two of the leading manufacturers that there is no prussic acid in their specialty. Of course, the suggestion naturally arises, has the composition been altered since the difficulty arose about the sale of chlorodyne and the poisons' regulations? If this supposition be correct it only confirms the helplessness of druggists in the matter of these proprietary preparations and should determine each to have something suitable for cases in which these articles are usefully employed. Then, it must be admitted that druggists rarely utilise their windows in the effective manner to command business that characterizes the dry goods store. Too often they ignore the influence of seasons upon their trade and local affairs are not utilized to their advantage. In my next letter I propose to give a few hints on general and particular forms of judicious advertising for the druggist, which have proved successful in this country. Our cousins in the States are too ready to sneer at the methods adopted by the pharmacists in England for building up trade, but, after all, some useful lessons may be learned from a country that has produced a Beecham, a Pears, and a Mellin.

Copying Inks.

The essential quality of copying ink is that it shall enable one or two copies of the written matter to be taken by applying dry or damp paper to its surface and applying a light or heavy pressure. A good kind of copying ink is obtained by mixing alum and logwood extract or decoction with the addition of some sugar, salts or glycerine, to enable it to be transferred in part to all copying paper. Inks of this kind have a violet tint, give a purple toned writing, and gradually become dark on the paper. The copies obtained are pale at first, but slowly darken.

RECIPES FOR COPYING INKS.

1. Ingredients :
2½ lbs. extract of logwood.
10 ounces alum.
2½ ounces sulphate of copper.
2½ ounces sulphate of iron (ferrous sulphate).
5 ounces of brown sugar.
1 pint of water.

Boil all the above ingredients in the water until dissolved then filter it through a felt filter bag, and mix it with a solution of 2½ ounces yellow chromate of potash dissolved in one pint of water, and mix this compound with a solution of 10 ounces sulphindigotic acid in 10 fluid ounces of

glycerine. The result is not a cheap ink, but a capital one.

2. The following ink is very fluid, which readily flows from the pen, and does not need a press to yield copies in black ink. Into one quart of distilled water put 5 ounces coarsely pounded extract of logwood and 1½ ounces crystallized carbonate of soda, and heat the mixture in a porcelain evaporating dish, until all the extract is dissolved and the fluid becomes of a deep red color, then remove the vessel from the source of heat and stir into the mixture 5 ounces of glycerine of specific gravity 1.25, also 75 grains yellow chromate of potash (dissolved in a little water), and 1½ ounces of gum arabic, reduced to powder, and dissolved in just sufficient water to form it into a thick mucilage. The ink is now ready for use.

3. Ingredients :

- 2 lbs. Aleppo galls, bruised.
- 2 gallons of water.
- 10 ounces sulphate of iron (ferrous sulphate).
- 5 ounces gum arabic.
- Potassic permanganate solution.
- Extract of logwood q.s.
- Sugar q.s.

Boil the galls in one gallon of water for an hour, using a copper vessel, and replace the water loss by evaporation, strain the fluid, and again boil the galls with the second gallon of water for an hour, and strain, then mix the two quantities of strained fluid, and immediately put in the iron sulphate and the gum, and shake or stir the mixture until these solids are dissolved, then add a few drops of the solution of potassium permanganate, and strain the whole through a horse-hair sieve, then put in the sugar in the proportion of half an ounce to the gallon of fluid and a little extract of logwood, to give the ink a blacker color when written with.

4. One authority prepares a copying ink thus :

A concentrated solution of logwood is treated first with one per cent. of alum and then with one per cent. of lime water, until a permanent precipitation is formed. A few drops of a weak solution of chloride of calcium are added, until a blueish black color is obtained, then hydrochloric acid is added, drop by drop, until the liquids turn red. A little gum and about one per cent. of glycerine are then added, and the ink is ready for use.

In No. 1, the sulphindigotic acid is obtained by dissolving 2½ ounces of indigo in 50 ounces of fuming sulphuric acid, and diluted with 200 ounces of water.

No. 2 can be made into a writing ink by leaving out the gum and glycerine and adding one ounce of logwood extract, dissolved in one pint of water, and adding 15 grains or more of sulphate of copper to increase the blackness of the compound.

5. The following is the formula of a blueish black copying ink :

- 4½ ounces Aleppo galls, free from insolubles.
- 1 drachm cloves, pounded or pulverised.
- 40 ounces cold water.
- 1½ ounces purified sulphate of iron.
- 35 grains purified sulphuric acid.

4 ounce of sulphindigotic acid, in the form of a thin paste, and either entirely neutral or nearly so.

This ink is prepared by putting the galls and cloves into a vessel capable of holding about four gallons. Pour the water on them, allow to digest for a few days, with frequent stirring, then filter off the fluid into a second vessel of the same size and add the iron salt, and when this has entirely dissolved the acid is added, and the whole quickly shaken. Finally the indigo is put in and mixed by shaking, and then the whole filtered for copying ink ; 5½ ounces of galls are used.

6. A French formula for a copying ink consists of :

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| 165 parts, by weight, of beer. | |
| 9½ " | gall nuts. |
| 3 " | gum arabic. |
| 4 " | calcined sulphate of iron. |
| 2 " | tormentil root (portentillatormentilla.) |
| 1 " | lampblack. |
| 1 " | rock candy. |
| 6 " | white sugar. |
| ½ " | honey. |

All of the solids are dissolved in the beer, and when the whole is of a homogeneous consistency it is ready for use.

7. Ingredients :

- 3½ ounces of gall nuts in coarse powder.
- 3½ ounces extract of logwood.
- 50 ounces tormentil root, bruised.
- 50 ounces vinegar.
- 50 ounces water.
- 18 ounces sulphate of iron.
- 3½ ounces alum.
- 25 ounces water.
- 6 grains indigo carmine.
- One-tenth ounce gum arabic.
- 100 grains white sugar.

Boil the logwood extract and the gall nuts and the tormentil root in the 50 ounces of vinegar and 50 ounces of water mixed for one hour, then strain the fluid, separately dissolve the iron salt and the alum in the 25 parts of water, and mix this with the strained logwood extract, and in the mixture dissolve the indigo carmine, the gum and white sugar.

8. A simpler formula consists in boiling 4 ounces of extract of logwood in a mixture of one gallon of water and one gallon of vinegar, with 3 ounces of sulphate of iron, 2 ounces of alum, 2 ounces of gum arabic, and 4 ounces of sugar.

9. Ingredients :

- 8 ounces Turkish gall nuts in powder.
- 4 ounces sulphate of iron.
- 2 ounces gum arabic.
- 1 ounce alum.
- 1 ounce indigo.
- 12 ounces vinegar.
- 60 ounces beer.

Put all the solids into a stoneware or glass vessel, and pour the vinegar over them, and let the whole digest for twenty-four hours in a moderately warm place; then add the beer, and let the whole rest undisturbed for a few days or a week; then strain off for use. The vessel should be left uncovered, so that the air can get access to the contents, as it is the oxidizing effect of the air on the iron salt that increases its intensity of color.—*American Stationer.*