

## Dispensing Adjuncts.

### British and Colonial Druggist.

A great many precepts have been laid down for the guidance of the dispenser since the time when the importance of the art of compounding medicines first began to make itself felt, and probably none of these are more prominent or have had more stress laid upon them than those which enjoin "accuracy" and "rapidity." Of course the possession of these two qualities alone does not constitute a good dispenser, but without them a man cannot hope to become one. True, the other attributes of a good dispenser are very numerous, but though many of these are considered essential, without accuracy they are valueless, and without despatch their worth is very materially lessened.

It is a well-known fact that no amount of theoretical teaching or mere reading from books will imbue a man with that practical acquaintance with the art which is a *sine quo non* of success in it. But at the same time the practical man may pick up a great many additional hints from papers, which when specially applied by himself may prove of great assistance to him in the various details of his work. The simple aids to dispensing mentioned in the following pages will be fresh to the majority of our readers, and to them we point out that the skill of the experienced dispenser is greatly aided by such conveniences, his work being made more rapid, less complicated, and consequently, more likely to be accurate. The precise nature of the dispensing aids that will be found useful in each pharmacy will depend to a certain extent upon the district and upon the nature of the prescriptions that find their way there, but those that are mentioned here will be found suitable to the majority of cases, and by a little adaptation suitable to all.

It need scarcely perhaps be mentioned that the shelves, &c., round the dispensing counter should be fitted with small bottles, containing all the fluids and powders in frequent use, so that the dispenser shall not have to go round to the larger shop bottle, for, say, a few drachms of tincture of rhubarb or ginger. Places should also be found among these for the various dispensing conveniences that are used, and a very simple arrangement of the various official preparations, &c., as long as it is on a definite system, will be found to have a very noticeable effect upon the rapidity and ease with which the dispenser carries out his work.

Reference should first be made to the advantages of keeping

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of the various alkaline and other salts that occur so frequently in mixtures. One that has been in the habit of weighing each quantity of sodium or potassium bicarbonate or bromide will, perhaps, not realize the great saving of time experienced by keeping such salts in solution until he has tried it, and he will then never return to his old practice of weighing each

quantity of common salts, but will dispense that ingredient by the more expeditious and probably more accurate method of measuring it in solution.

Again, in the preparation of effervescing mixtures, when a large quantity of either bicarbonate of potassium or of sodium is required in almost saturated solution, a good deal of time is wasted in getting the salt to dissolve, and the solution generally then requires straining to get it bright and clear. It must be very evident to all that the employment of a solution of the salt ready prepared is a great saving of time and labor, and is as accurate as dissolving a weighed quantity of the salt each time it is required.

It has been said that the salts should be weighed for effervescing mixtures in preference to using a solution, on account of the extreme accuracy required, in order that the acid may be exactly neutralized by the alkali when the two portions of the mixture are brought together. This is simply a reflection on the accuracy of the solution, for if the correct proportions be originally used in making it, and the solution itself be perfect, the amount of salt in each measured quantity is as precise as if the amount of salt itself were weighed. Moreover, the operation of measuring is quicker than that of weighing, so that while attaining absolute accuracy time is saved in all directions.

In making these solutions, the point upon which most stress must be laid is that of the great care necessary in weighing the quantity of salt, and in making the solution up to exactly the right bulk. The easiest way to attain this latter object is to put a measured quantity of water into the stoppered bottle employed, and then to mark it with a file at the exact surface of the liquid, so that it serves as well as a graduated measure. The solution may then be very easily made by putting in the right amount of salt, nearly filling up with water, then shaking frequently until dissolved, and making up to exactly the right volume: the same bottle serves thus for preparation and storage.

Another point, which is of great importance, is that of using distilled water, and not "aqua font." in preparing these solutions: it will be found that they are then much more permanent and much less likely to form any sediment than if ordinary tap water is used. Cold water should be used for all, for though the solution is made more rapidly with hot, it is much more likely to form a sediment, and thus make the solution inaccurate: the only exception that may be made to this rule is *sulphate of magnesia*, which is not at all affected by the hot water treatment, and dissolves much more readily.

The following list of salts, &c., includes those that are most frequently required at the dispensing counter, all of which may be kept in aqueous solution, the figures given at the side representing the strength that has been found most suitable and convenient for each:—

Ammonium bromide.....	1 in 4
" carbonate.....	1 " "

Ammonium chloride.....	1 in 4
Carbolic acid (internal) .....	1 " 10
" (external) .....	1 " 10
Chloral hydrat .....	1 " 2
Cocaine hydrochlorate.....	1 " 5 or 10
Ferri ammon. citrate .....	1 " 4
Magnesium sulphate.....	1 " 2
Potassium acetate.....	1 " 2
" bicarbonate .....	1 " 8
" bromide.....	1 " 4
" chlorate.....	1 " 24
" citrate .....	1 " 2
" iodide .....	1 " 2
" nitrate .....	1 " 2
Saccharin.....	1 " 10
Sodium bicarbonate .....	1 " 12
" salicylate .....	1 " 4

Of course, the quantities of each that it is expedient to make must be regulated by the experience of the pharmacist as to what is most frequently required in his particular dispensary; it is better to err on the side of making too little rather than too much, when it would be likely to last for some months perhaps. A small quantity of a ten or twenty per cent. solution of cocaine hydrochlorate often proves useful, especially when an odd quantity is needed for such a purpose as "eye-drops"; for instance,

Gutt. cocain. hydrochlor. 1 per cent. .2 drs  
may be prescribed—for this quantity 1½ grains of the alkaloid are evidently required, practically an unweighable amount, whereas 12 minims of a 1 in 10 solution gives the right proportion of cocaine, and this is just made up to 5 ii. with distilled water. The solution of saccharin is often useful for sweetening purposes; the compound is rendered just soluble with a few grains of bicarbonate of sodium.

It might be pointed out that in preparing solutions the quantity of the salt required must be worked out at the rate of 480 grains to the ounce, and not 437.5 (avoirdupois). Thus, for instance, 8 ounces of bicarbonate of potassium solution should contain 1 ounce (480 grains) of the salt, so that if 1 drim. of the salt were ordered that would be contained in 8 × 1 drim = 1 ounce of the solution. It would be evidently incorrect to use the avoirdupois ounce weight as then 1 ounce of the solution would not contain 60 grains but only 54½ grains.

Besides these aqueous solutions, there are a few bodies that are preferably kept in alcoholic solution, either on account of their sparing solubility in water or the increased stability of the solution in spirit. Among these might be mentioned codeine (1 in 10), very useful for extemporizing a syrup of codeine for use in cough tinctures; salicylic acid (1 in 10), used as a remedial application, or as a preservative of other solutions; camphor (1 in 5), for quickly preparing camphor water or for adding to dentifrices, to give them a trace of camphor, when it would often be inconvenient to rub down a small lump of gum.

Olive oil is used as a solvent of carbolic acid, forming a carbolized oil, two strengths, 1 in 5 and 1 in 10 being most convenient; this is in great demand in some neighborhoods as a dressing and as an application. Carbolic acid in glycerine should also be kept, a 1 in 10 solution proving often more useful than the official 1 in 5.