

Practical Hints on Dispensing for Students.

BY C. J. S. THOMPSON.

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PILLS.

UNDOUBTEDLY the most popular method of administering drugs in a solid form is that of the pill, it being easily taken, handy, and an excellent means of exhibiting otherwise nauseous medicines. Pills are compounded of various sizes, ranging from one to five grains each in weight, but rarely exceeding that, as it would render them too bulky and difficult to swallow. The drugs prescribed in this form are very numerous, the pill being an easy method of administering substances that cannot readily be given in solution. The ingredients usually consist of alkaloids or other active principles, vegetable extracts, resin or resinous substances and essential oils, &c., either alone or in combination. It may be well to briefly describe the general process of making and dispensing pills according to prescription. The first essential point is to properly combine the ingredients ordered into a solid and plastic mass of suitable consistency, for rolling and forming into the shape of pills. The art of making a good pill mass is one in which manipulative skill and dexterity largely enters, and may be included among the more difficult operations it is necessary the student of pharmacy should master.

The ordinary methods of beating or working into a pill mass must be learnt by practical illustration and experience, but there is also a large class of drugs the student may meet with in dispensing which, owing to their constitution presents certain difficulties to the formation of a good mass. In such cases the difficulty is soon solved if the right excipient or combining medium is used, a practical hint to which being the key to the whole subject. With regard to the implements used, the wedgewood mortar should not be too deep, and the pestle being almost straight the whole length, but rounded at the end. Pill machines for dispensing purposes may be had to cut from one to four dozen pills, of from one to five grains in size. They should be kept in good condition, the dispenser taking care to see the one he is about to use is perfectly clean. In proceeding to compound a prescription for pills, it should be noted all substances of a hard and crystalline nature must first be reduced to a fine powder, and the more active ingredients should be placed in the mortar first. When soft extracts are to be mixed with dry powders, care must be exercised to see the former are well incorporated with the other ingredients. Essential oils when ordered should be added last. When a minute quantity of any poisonous chemical or alkaloid is prescribed, it should be weighed first, placed in the mortar and triturated with a little sugar of milk or other inert powder in order to render its distribution throughout the

mass, and with the other ingredients more easy. The whole ingredients having been placed in the mortar and intimately mixed, the next step is to form them into a mass of plastic consistency. As the student gains experience he will be able to judge from the composition and nature of the ingredients the proper excipient (if one is necessary) to use at once, and so avoid failure. Should they include an admixture of soft extracts the whole may be beaten into a suitable mass. They may also consist of powdered substances which only need the action of something of a solvent nature to enable the particles to combine, or they may be composed of dry powders, which necessitates the use of a solid excipient to act as a medium in binding the whole into an adhesive mass. The method of procedure must depend therefore on the nature of the ingredients employed. When the prescriber distinctly orders a certain excipient in his prescription, it should always be used, unless the dispenser finds, as is not infrequently the case, it is absolutely necessary to use another. In these cases, where no special excipient is mentioned, the dispenser should select one that will least increase the pill in size. With the help of the excipient the ingredients are next worked up into a plastic mass of a consistency just soft enough to enable it to be rolled out without crumbling, and sufficiently adhesive to form a good firm pill that will retain its shape. The best method of using the pestle in working up a small mass is with a lever-like motion, and so thoroughly incorporating the ingredients that the whole when finished should present a perfectly homogeneous appearance throughout. Care should be taken in choosing a liquid excipient that it is not one that will act as a complete solvent to the ingredients, and so cause the pills, after they have been finished, and stood awhile to fall into a soft and sticky condition. Rectified spirit will act in this way with some drugs; it should therefore be driven off after it has been used as an excipient, before rolling the mass. Much trouble is caused at times through making the mass too soft, which necessitates the addition of powdered gum before it can be rolled, and so increasing the bulk of the pills. This habit of adding powdered tragacanth or other gum to a pill mass should be avoided. An excipient, especially a liquid one, should be used cautiously, and is best added a very little at a time, so that the smallest quantity possible may be used. Excipients must always be avoided that will be incompatible with any of the ingredients, and that would by any possibility interfere with their action. It is desirable that pills should always be made up as small as possible, and it frequently occurs when a very small quantity of drugs are ordered that the prescriber leaves the size of the pill to be made to the discretion of the dispenser. In such cases when the weight of the pill would not amount to a grain, it is usual to make it up with some inert powder, such as althea or sugar of milk,

and dispense as a two-grain pill. The same rule may be followed when a minute quantity of a powerful drug is ordered. It is generally made up with sugar of milk and glycerine of tragacanth, and dispensed in one or two-grain pills. The dispenser should always note the size dispensed in the prescription book for the guidance of others. After being cut and rounded, the pills should be made quite globular in shape by placing them under the pill-finisher and giving them a few rapid turns on a smooth surface. A good pill when finished should be firm, yet not too hard, quite round in form and have a perfectly smooth surface. They may be completed either by dusting over with finely powdered French chalk or lycopodium, &c., varnished or coated with silver leaf, French chalk, or gelatine, &c.

EXCIPIENTS.

The following general excipients will be found useful, and are usually kept ready on most dispensing counters:—Glycerine and rectified spirit (2 to 1) forms an admirable liquid excipient when carefully used with most vegetable powders.

Simple syrup is a good excipient for such powders as rhubarb, ipecacuanha, jalap, &c.

Mucilage, tragacanth and acacia are often used for dry powders when much moisture is necessary. Decoction of aloes forms an excellent excipient for all combinations containing aloes and resinous gums.

Glycerine of tragacanth, a most useful general excipient, prepared as follows:—

Powdered tragacanth	1 drs.
Glycerine	4 ozs.
Water	14 drs.

Mix and heat in a water bath for ten minutes, and allow to cool.

Glycerine should not be used alone as an excipient. Mixed with treacle it forms a good medium, also

Powdered tragacanth	1 drs.
Rub with S. V. R.	2 drs.
And add treacle	2 oz.

Allow to stand.

Soap is useful in making pil. opii., and in powder forms a good excipient for creosote. Bread-crumbs, often used to make up calomel, balsam of Peru, carbonic acid, &c.

Calcium phosphate, an admirable medium for making ung. hydrag. or other fatty matters into pills. Confection of roses will be found useful when a solid sticky excipient is required. It should be avoided when sulphate of iron, tannic acid, or vegetable astringents are among the ingredients.

Kaolin ointment forms an excellent excipient for permanganate of potassium and nitrate of silver. It may be prepared by taking of

Vaseline	1 oz.
Paraffin wax	1 oz.
Melt and add	

Kaolin	1 oz.
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Stir well until cooled.

The student should avoid using more