Practical Hints on Dispensing for Students.

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MIXTURES—CONTINUED.

THE tincture of perchloride of iron is frequently prescribed in combination with quinine, and which forms an admirable solvent when it is desired to exhibit these remedies together. When ordered in a mixture with solution of acetate of ammonia, care should be taken to test the latter before mixing, in order to make sure it is perfectly neutral, as if otherwise the result will be thick and turbid in appearance, instead of forming a clear dark-red mixture. The incompatibility of tincture of iron and mucilage of acacia is well known, yet the two are not infrequently met with in prescriptions. If the tincture and mucilage are mixed together directly an unmanageable jelly is produced, which it is impossible to form into a presentable mixture, but this result is obviated if the tincture is first well diluted with water, the mucilage being added to the mixture last, and by this precaution the difficulty is overcome. A favorite combination with some medical men is that of the solutions of dialyzed iron and arsenic, made up with glycerine or water. In preparing mixtures of this description, care must be taken not to add the solution of arsenic until the iron has been well diluted, leaving it until the last, or otherwise a light precipitate will be thrown down. The scale preparations of iron are easily soluble in water in agitation, with the exceptions of the potassio tartrate, and pyrophosphate, both of which it is necessary to rub down in a mortar, and hot water will be found of value to aid their solubility. The inconvenient froth caused on shaking up the citrate of iron and quinine with water, will rapidly subside on a few drops of rectified spirit being allowed to run down the side of the bottle.

A form of mixture sometimes met with, and which often gives a most unsatisfactory result to the dispenser is :—

℞ Ferri et ammon cit ..... 1 dr.
Acid nit. mur. dil ..... 1 dr.
Spts. ether chlor..... .....2 dr.
Infus. quass.... .... ad. 6 oz.
Misce.

The best method is to dissolve the citrate in about four ounces of the infusion, and dilute the acid before mixing them together, dispensing the mixture with directions to shake the bottle. Care must be taken when a mixture is to be repeated that it should not be prepared again in the same bottle without it first being thoroughly cleansed and washed. The neglect of this precaution is often the cause of mixtures, especially those composed of vegetable infusions, becoming thick and turning sour in a very short time. In cases where the tinctures of Indian hemp, guaiacum, and other resinous preparations are ordered in any quantity to be mixed with water, it is customary to triturate the tincture first with a small quantity of mucilage of tragacanth or acacia, as otherwise, on standing, the resin will be thrown out of solution and adhere to the sides of the bottle. If a small quantity only of resinous tincture is prescribed, the addition of the mucilage is unnecessary. When such heavy and insoluble salts as the subnitrate of bismuth, oxalate of cerium, or heavy carbonate of magnesia, etc., are ingredients in a mixture, the addition of mucilage is necessary to aid their suspension. As a rule, the prescriber looks after this, and will order either the mucilagious medium or an equivalent quantity of powdered gum, as in the following instance :—

℞ Bismuth. trisnit.... ....1 dr
Sodæ bicarb ... . 1½ drs.
Pulv. tragacanth .... ½ drs.
Tr. card. co.... .... 4 drs.
Syr. zingib.....1 oz.
Aquæ..... . ....8 oz.
Misce.

In this case advantage should be taken of the alcohol present in the form of tincture of cardamoms, to mix it first with the powdered gum tragacanth direct, thoroughly incorporate, and then add the water gradually with vigorous agitation until a mucilage is formed, in the same manner as the mucil. tragacanth. of the B. P. is prepared. Should no alcoholic preparation be included in the mixture, the best method of forming a satisfactory mucilage is to place the powdered gum in a dry mortar, then add at once about two ounces of water, at the same time triturating the whole very quickly, continuing it until the mucilage is formed, and it may be thinned down. Gum tragacanth is employed in preference to gum acacia to suspend bismuth, as, when the latter gum is used a hard mass is formed, which often cakes at the bottom of the bottle. The sulphate of quinine is a favorite drug with medical men, and one very frequently met with in prescriptions. Its solubility in water is only 1 in 1,000, and 1 in 200 of rectified spirit; but it is readily soluble in acids, the usual proportions being about one grain to the minim of the dilute acids of the pharmacopœia. It is incompatable with all alkalies and their carbonates, iodides, and infusions containg tannin, which throw down a precipitate of tannate of quinine, which sulphuric acid instead of dissolving aids in precipitating. Like other alkaloids, it is precipitated by iodide of potassium and tannic acid. When ordered without any solvent, it should be rubbed down in a mortar as fine as possible, gradually mixed with the liquid menstruum, and dispensed with a shake the bottle label. It is usually prescribed in combination with a dilute acid, and in dissolving the quinine should be shaken up with a small quantity of water first, and then the acid added, as otherwise it may form into a hard cakey mass that will cause trouble. The sulphate of quinine is readily soluble in tincture of perchloride of iron. When ordered with iodide of potassium in a mixture, unless great care is used, a most unsightly compound is formed.

℞ Quin. Sulph..... .....18 grs.
Potass. iodid ....40 "
Acid. hydrobromic dil..... 1 dr.
Syr. aurant.... ..... 6 drs.
Aquæ .... 6 ozs.
Misce.

The best method of compounding a prescription of this kind is to dissolve the quinine sulphate in the acid, and dilute with three ounces of the water and the syrup, then dissolve the iodide of potassium in the remainder of the water, and finally mix the solutions gradually. The following mixture is one that is by no means uncommon :—

℞ Quininæ sulph..... 1 scruple.
Acid sulph. dil.....40 m.
Potass. acet..... 2 drs.
Syrup. limonis ..... 1 oz.
Aq. .... 8 ozs.
Misce.

In dispensing this combination it is impossible to prevent a heavy precipitate of of acetate of quinine being thrown down, it should therefore be labelled with directions to shake the bottle. Another mixture in which a precipitate occurs is

℞ Quin. sulph.....12 grs.
Acid sulph. dil..... ½ dr.
Syrup simpl..... ½ oz.
Infus. rosæ..... 6 ozs.
Misce.

In this case, however, it may be prepared, a turbid and unpleasant-looking mixture is the result, owing to the tannate of quinine thrown down. An unsatisfactory combination is that of sulphate of quinine, aromatic spirits of ammonia and water. The quinine may be dissolved in the spirit, but in the addition of the water a flocculent precipitate takes place. When the tincture of quinine is prescribed with alkaline carbonates, it should always be diluted as much as possible before mixing. The following mixture may also be taken as an instance where the dilution of the ingredients is most desirable :—

℞ Ferri. et quin. cit .... 1½ drs.
Potass. citrat..... 1½ drs.
Tr. nux. vomic.....40 m.
Syr. simpl..... 1 oz.
Aquæ .....10 oz.
Misce.

If care is not taken a flocculent precipitate is inevitable. The citrate of iron and quinine should be dissolved in about half the quantity of water, the syrup and tincture being then added. When solution is complete, the citrate of potash having been dissolved in the remainder of the water may be added, and the mixture will remain bright for some time. Mixtures containing the preparations of cinchona bark, in combination with carbonate of ammonia, should be dispensed with a shake the bottle label. Butyl-chlorol hydrate is soluble only about 1 in 50 in cold water, and when dispensed it is well to rub it down with a little hot water, which adds to the appearance of the mixture. It is more soluble in alcohol, and when ordered in combination with tinctures advantage should be taken of their presence to aid solubility.

℞ Croton chloral hydrat..... .... ½ dr.
Tr. gelsemin..... ....1½ drs.
Spts. chlorof.....1½ drs.
Aq..... .1½ oz.
Misce.

In this case if the chloral is rubbed