NOTE ON HYPOPHOSPHOROUS ACID AS A SOLVENT OF STRYCHNINE AND MORPHINE.

By H. W. Jones, F.C.S.

In searching for readily soluble salts of strychnine and morphine for hypodermic medication, I was struck with the extreme solubility of both these alkaloids in dilute hypophosphorous acid; and the ease with which they dissolve to form neutral, or practically neutral, solutions when hypophosphorous acid is employed, points to a possibly advantageous use of such compounds for hypodermic injections.

In the case of hypophosphite of strychnine it appears to be a very stable salt in solution, and hypophosphorous acid might, I think, be usefully employed, not only to form a hypodermic injection, but also in place of the hydrochloric acid ordered for making liq. strychninæ P.B., as the official preparation sometimes gives trouble in cold weather from the separation of crystalline matter.

The morphine combination also appears to keep better in solution than the acetate, and would more easily afford a stronger solution than the official inject. morphinæ hypoderm. in cases where such was required. A solution 1 in 6 is sometimes wanted, and the ready solubility of hypophosphite of morphine allows of this being easily made, or even of a very much stronger solution. Thus for a concentrated injection intended for veterinary use, I have found no difficulty in preparing a solution four times the strength of the official injection.

The solutions so produced with hypophosphorous acid, and using a slight excess of morphine of strychnine, are neutral or only very faintly acid. In the case of morphia I have found it advantageous to make a decidedly strong solution to estimate the morphine, and dilute to the required strength; and a similar method may obviously be followed with regard to strychnine. Morphine hypophosphite is so readily soluble that crystals only separate from a thick syrupy mother liquor after keeping for some time.

Strychnine hypophosphite can be more easily obtained, as although exceedingly soluble, the highly concentrated solution solidifies on cooling to a crystalline mass from which the salt can be separated.

The salts of both alkaloids would well repay an extended examination both as to composition and solubility.—[British and Colonial Druggist.

CONCENTRATED INFUSIONS BY COLD PERCOLATION.

(From Mr. Chas. E. Dodsley, Middlesbrough.)

Amidst the multitude of new remedies which are continually being introduced from one source or another, and with which pharmacists must become and keep acquainted if they would be equal with the times, there is a fear of improvements in the manufacture of some older preparations being overlooked or neglected. Despite this influx of new remedies amongst older preparations, infusions still maintain a place. Some remarks on "Concentrated Infusions" will therefore not be behind the times, and may prove useful to those readers of the B. & C. D. who have a constant demand for such. My intention is not to set forth the advantages or otherwise of concentrated infusions, but to give a few hints based upon practical experience, which may be helpful to any who, either through want of details in mode of procedure or disheartened by failure in previous experiments, do not make such preparations.

What is required in a concentrated infusion is: first, that it should when diluted, yield a product as near like the fresh infusion in taste, colour and smell, as is possible; secondly, that it should not be liable to decompose or deposit on keeping.

Two things must be borne in mind during peparation, that the drug to be treated be in the most suitable state of subdivision, to allow the free extraction of soluble matter, and, that the menstruum employed be the best adapted for that purpose.

Concentrated infusion of calumba is one of the most unsatisfactory for keeping. If prepared as follows a satisfactory article will result.—Take picked calumba root, 2 lbs., reduce to a uniform very coarse powder in a drug mill. Macerate the powder in a mixture of 12 ounces of rectified spirit and 48 ounces of distilled water. After 48 hours percolate slowly until no supernatant liquid remains; then add distilled water in small successive portions until 89 ounces is collected. If the calumba root be too finely powdered a semi-fluid gelatinous mass will result upon maceration, rendering percolation almost impossible.

Infusion of gentian is perhaps in more constant demand than any other. Take gentian root, bruised, 8 ounces; dried orange peel, bruised, 8 ounces; fresh lemon peel, 16 ounces. Dry the lemon peel with a gentle heat and cut small. Macerate together with 50 ounces of distilled water and 12 ounces of rectified spirit for 24 hours. Pack in percolator and continue percolation with distilled water until 68 ounces have passed through. Reserve this, and continue adding more water until the marc is exhausted. If more than 12 ounces is required to effect this, evaporate the second percolate down to 12 fl. ounces, and when cold, mix with the reserved portion. Stand aside for 12 hours to allow any deposit that may form from the mixture of two solutions to settle, and then, if necessary, filter.

The quantity of menstruum required to effect exhaustion is resultant upon three things: That the drug should be thoroughly permeated by the liquid during maceration; the manner in which it is packed into the percolator; and that care be used in pouring successive portions of liquid over the marc, so as to avoid causing too rapid percolation, and still not allow air bubbles by the liquid falling below the top of marc. This applies equally to percolation at all times.

Acid infusion of roses is a favourite vehicle with some prescribers. The following method of procedure will yield a preparation in all respect superior to a fresh infusion:—Take 1 lb. dried red rose petals, and break small by rubbing through a coarse wire sieve. Macerate the broken petals with 70 ounces of distilled water, shaking frequently. After four days transfer to a percolator and exhaust as follows: Collect one pint of liquid and with this repercolate. Repeat this with the second and third pints which pass through. Displace by adding water in successive portions until the percolate measures 80 ounces. Add to this ʒv. m. 20 pure sulphuric acid, and shake well together.

Most readers will remember at one time or another having had to use a "concentrated infusion of senega" with an unsightly looking deposit at the bottom of the bottle, representing sometimes one-third of the whole bulk. Such a state of things may be obviated by making your own preparation, as follows:—Take senega root 2 lbs., reduce to a coarse powder, and macerate for 48 hours in 64 ounces of distilled water. Then allow to slowly percolate, and with the first portion which passes through repercolate, finally adding more water until the collected percolate measures 64 ounces. To this add 16 ounces of rectified spirit. Set aside for three days, filter and make up to 80 ounces with distilled water.—[British and Colonial Druggist.

LOOFAHS.

The loofah or towel gourd (Luffa Ægyptica) is indigenous to Egypt and Arabia, but is grown extensively in Western Africa, the West Indies and the Southern States. The plant, a cucurbitaceous one, is a climbing vine which frequently attains a length of thirty feet. It is chiefly remarkable for its ovate fleshy fruit, of which it seldom bears more than a dozen, varying in length from six inches to two feet. This fruit in the fresh state is elliptical ovate, and has a green epidermis marked longitudinally with black lines. It is the close vascular network of this fruit, freed from the epidermis, pulp and seeds, which forms the loofah, so familiar to chemists for a dozen years or more. The natives of the countries in which the towel gourds grows have long used them as scrubbing brushes and strainers. To prepare them for these purposes the epidermis is removed, and the peeled fruit then thoroughly washed in water and beaten so as to remove the mucilaginous pulp and the seeds. Although loofahs have long been used by natives for washing purposes, we have heard it said that their introduction into this country was a mere accident. The gourd is also used for making fancy toilet