

being taken by more spirit, to be in its turn saturated and deposited. By this means exhaustion is attained with considerable rapidity and saving more than half the time.

*Preparation by percolation.*—This method is comparatively a recent one, and was introduced some years ago and strongly recommended by our friend Mr. Deane. When properly conducted, there is no doubt that percolation is of all methods the most perfect, and accompanied by the least waste. The resulting tincture is ready for use, quite bright, and independent of the press and filtering paper.

Probably why percolation is not more generally in use is on account of the difficulty attendant on "packing." A satisfactory percolation can only be performed by an absolutely perfect and uniform arrangement of the ingredients, and which is often an impossibility. It is imperative that the spirits should pass through equally and horizontally, or else one portion would permeate much faster than another. Each layer of the solvent as it passes downward should be *displaced* by a fresh one, but a *mixture* of the two should not be allowed, which would entirely alter the *modus operandi* of the whole process.

Tincture making is generally placed in the hands of the apprentice or junior assistant, and of course a want of experience only makes matters still worse. The consequence is that the proprietor of the establishment is startled at the thin bodied laudanum, the watery tincture of gentian, or the tasteless Vin. Ipecac.

It is surprising how constantly the meaning of the word percolation is misunderstood. It is so in the Pharmacopœia itself; for instance, in the directions for making Tinct. Chiratae, Capsici, Colchici, Conii, Gentianae, etc., what is there by inference termed percolation is not percolation but simply washing, and a large waste of spirit unnecessarily entailed. To obviate this waste is the object of our experiments, and of the process which we now recommend, the adoption of which an experience of twenty years will fully justify. There are two essentials for success in the operation, namely, the *proper form of percolator*; and secondly (strange as it may seem), *no direct packing*.

*The form of percolator.*—These are sold of every possible variety, according to the fancy of the manufacturer, but all are referable to two kinds, cylindrical and conical. Repeated trials have proved that the perfect cylinder is the only one on which dependence can be placed. A little reflection will at once point out the error of recommending the conical form. The well-known laws of hydrodynamics show that the pressure of a column of fluid on the bottom of a containing vessel is invariably equal to the weight pressing on the area of the base. It will, therefore, be evident that a percolator having the form of an inverted cone, must have an unequal pressure from the contained fluid, and, as a consequence, the materials being exposed to an unequal pressure, must be unequally exhausted. The