

few grains of citric acid and one-eighth the volume of alcohol, the solution was effectually protected, as also by the addition of 12 or 15 per cent. of alcohol without citric acid. It was also stated that a solution of one part of citrate to two of water, kept very well. Mr. Brown took as his guide Mr. Umney's statement that the pharmacopœial product is about four and a half ounces, and on this regulated the strength of his solution. In preparing the citrate he found it better that the precipitated quinine should not be suffered to dry after washing, nor should it be added to the solution of iron until the latter has cooled. The ammonia is best added by diluting it to about the same bulk as the citrate solution, and mixing both liquids, with brisk shaking, in a large bottle. In testing the product by the P. B. process he had failed in getting the required quantity—16 per cent.—of quinine, but this was probably owing to inexperienced manipulation. Professor Redwood explained that by the pharmacopœial test it was intended that the precipitated quinine should be dried and weighed before being washed. Though the process might not give the exact amount of quinine present it would show the comparative value of the salt and in this way was of great practical value.

ACTIVE PRINCIPLES OF GELSEMIUM SEMPERVIRENS.—Some years ago this plant was examined by Dr. Wormley (see this journal April, 1876), and found to contain gelsemin, and an acid substance to which the name of gelseminic acid was given. Professor Sonnenschien has lately been making experiments in the same direction, and, in a paper read before the Berlin Chemical Society, (*Berichte d. Deutschen Chem. Gesellschaft in Pharm. Jour. & Trans.* Sept. 1876,) gives the results. He finds the so-called gelseminic acid to be identical with æsculin, obtained from the bark of the horse chestnut. The two substances agree in external characters; in the blue fluorescence of an aqueous solution; the dichroism of an alkaline solution, and the reaction with nitric acid and ammonia, and, finally, in chemical composition, as shown by analysis. The alkaloidal substance named gelsemine (not in any way to be confounded with the complex substance termed gelsemine by the Eclectics) was also isolated and its properties examined. It is sparingly soluble in water, more readily in alcohol, and very freely in ether and chloroform. Its reaction is strongly alkaline, and it completely neutralizes acids, but its salts do not appear to be crystallizable. If to a solution in strong sulphuric acid ceroso-ceric oxide be added, there is produced a bright cherry color, especially at the points of contact. This is considered by the author a characteristic test of the presence of the alkaloid. Ultimate analysis gave to this substance the formula $C_{11}H_{19}NO_2$.