

some time on a filter with ammonia of sp. gr. 0.96; then dried and well washed with ether and dried again.

Except as otherwise stated the solvents were applied at their boiling points for five minutes, when they were turned upon the filter. To dissolve in the "nascent condition," a sulphuric acid solution was warmed in a large test-tube, mixed with the solvent, and the mixture warmed to the boiling point of the solvent, then made *slightly* alkaline with ammonia and shaken, and kept warm for five minutes, then turned upon the filter. The filtered solutions were received in a tarred specific gravity bottle; the bottle being stoppered as soon as possible, and the weight of bottle and contents taken. The solution was then turned into a thin tared beaker, and the bottle well rinsed with portions of the solvent into the beaker, and the liquid evaporated on the water-bath, at a suitable temperature, and the weight of the residue taken. The weight of residue, deducted from off the solution, gives the weight of the solvent. From 5 to 10 grammes of the solvent were used. For solubilities of morphia, two or more trials were made for each determination, the mean being given. For solubilities of cinchonia, but one trial was made in each determination.

*Morphia*: number parts of water-washed solvent required for one part of alkaloid:

	Ether.	Chloro- form.	Amylic Alcohol.	Benzole.
Crystallized .....	6,148	4,379	91	8,930
Amorphous.....	2,112	1,977	—	—
Nascent .....	1,062	861	91	1,997

*Cinchonia*: number parts of water-washed solvent required for one part:

	Ether.	Chloro- form.	Amylic Alcohol.	Benzole.
Crystallized .....	719	828	—	—
Amorphous .....	563	—	40	531
Nascent .....	526	178	22	376

Crystallized morphia treated 15 minutes with washed chloroform at 25° C., required 9,770 parts of the solvent; treated with boiling chloroform and allowed to deposit for twelve hours and then filtered, held 6,209 parts of the solvent.\*

Nearly all the solutions deposited alkaloid on standing a short time, though most of the filtrates remained clear for five or ten minutes.

When the acid solution of morphia was made alkaline with a large excess of potassa (a ready solvent of the alkaloid), it required 5,656 parts of chloroform instead of 861. The writer has from time to time observed that alkalies which re-dissolve the alkaloids,

\* Wormley gives 6,550 as ratio of chloroform (not washed) to morphia in saturated solution. Hagar, an authority generally exact, gives morphia as soluble in about 90 parts of chloroform.