THE ASH STANDARD.

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What shall be the ash standard of official drugs? One might naturally say it can be nothing else but the ash yielded by an absolutely clean specimen previously dried to constant weight at an appropriate temperature, taking into account the nature of the drug. Possibly the acid solubility of the ash should be considered. Experience demonstrates that a standard based upon a select sample is not practical in the present condition of the market. Aside from the variation in mechanical dirt, the proportion of inorganic salts in drugs varies materially. A few examples will explain the difficulty. All figures refer to ordinary air-dry drugs.

BELGIAN VALERIAN.

One thousand pounds select root run through rolls and passed over No. 80 sieve gave 227 pounds or 22.7% of drug assaying 68% ash. The remaining 773 pounds assayed 10% ash. A sample of the whole root washed, brushed and dried gave 5.2% ash. In this case after discarding 22.7% of drug the remainder assayed nearly twice as high as a specially prepared sample; yet it would hardly be practical to undertake any better cleaning of large quantities of root. Probably the extractive yield of the drug to menstrua has been based upon a drug not even cleaned as well.

CULVER'S ROOT.

One thousand pounds select root broken on rolls and sifted over No. 80 sieve gave 242 pounds of powder yielding 66% ash. The remaining 758 pounds of percolation powder gave 6.5% ash. A select cleaned sample gave 2.9% ash.

ALETRIS.

One thousand pounds select root broken on rolls and sifted over No. 80 sieve gave 274 pounds of powder assaying 59% ash. The 726 pounds of percolation powder assayed 15% ash. A select cleaned sample gave 5% ash.

MEXICAN SARSAPARILLA.

Cut on cutting machine and sifted over No. 40 sieve gave 48 pounds assaying 68% ash. Run through rolls and sifted over No. 40 sieve, gave 52 pounds assaying 60% ash. Nine hundred pounds percolation powder assayed 15% ash. A select cleaned sample gave 9.4%.

PIPSISSEWA.

Only the leaves are official. Call for samples of U. S. P. product from a dozen sources was met by sending the entire plant in every case. One thousand pounds of plant gave 713 pounds of leaf assaying 3.5% ash.

PINKROOT.

One thousand pounds put through rolls and sifted gave 172 pounds assaying 69% ash; 828 pounds of percolation powder gave 28.5% ash. A select cleaned sample gave 8.16% ash.

Such examples could be multiplied, but enough has been given to demonstrate the difficulties in the way of establishing a practical ash standard. Digitalis usually contains adhering sand that cannot be gotten rid of. Different lots of powder contain varying amounts of sand, yet one lot with high sand contents may

assay much higher than another with low sand contents. In the case of drugs having an alkaloidal standard it is doubtful if an ash standard should be established. The following table gives results obtained with certain drugs and the standards given by different authorities.

Percolation Powders	U. S. P.	Other Authorities	Other Pharmacopœias
Arnica flowers.....11.5%			
Asafœtida .....5 to 56%	10%		10 to 20%
Bellad. leaves.....14.4% (0.37% alk.)		15%	10 to 20%
Benzoin 1.2%	2%		1.5 to 2%
Burdock Root.....7%			
Calamus peeled.....3.5%			
Cascara Amarga.....3%			
Cascara Sagrada.....5%			6 to 10%
Cherry Bark.....4%		4.93%	
Clover Red.....8.6%			
Coca Trux.....13.5%			
Cubeb 7.6%			8 to 10%
Digitalis 8%	(Purified Digitoxin (0.027%)	7.52% to	10 to 12%
9.5%	(0.026%)	12.55%	
18.5%	(0.023%)		
Elm Bark.....12.4%			
Elecampane 7%			
Fennel Seed.....8.4%			
Gentian Root.....3%			5 to 7%
Kola Nut.....3.5%			
Larkspur Seed.....6% (alk. 1.62%)			
Lupulin .....9 to 16%	(Alc. Ext. 60 to 72.5%)	10%	10%
Nux Vomica.....3%			3 to 3.5%
Pinkroot .....28.5% (Select 8.16)		18.72% to 40.81%	
Quassia 4.4%			
Squill 3%			5 to 8%
Stavesacre 13%			
Valerian .....10% (Select 5.2%)		8.52% to 30.97%	10 to 15%

A FEW DRUGS AND PREPARATIONS SUBMITTED TO U. S. P. QUANTITAVE TESTS.

Result of a series of examinations recently made in the laboratories of the College of Pharmacy of the University of Minnesota.

FREDERICK J. WULLING.

The college has made annually for twenty years now an investigation into the quality of the materia medica of the Northwest and has reported its investigations regularly to the Minnesota State Pharmaceutical Association, in whose proceedings nearly all reports may be found. The reports may or may not merit wider