

ABSTRACT OF DISCUSSION.

The author stated, in reply to a question, that powders of same degree of fineness had been used in the extractions, also the same drug and approximately the same amount of menstruum.

The discussion on the paper was somewhat concerned with the therapeutic value of the alkaloids that remained in the marc; J. P. Snyder suggested that these may be amorphous and have no therapeutic value. The assay of the U. S. P. might be misleading to that extent.

Hugo H. Schaefer stated that the final extractions of cinchona give a larger yield of chinoidin than the first, but the last extractions contain crystalline alkaloids; if they did not, these extractions would not be made. The determination of total alkaloids depends largely on the assay process employed; there may be a question as to whether the assay or the extraction process is faulty; nux vomica can be completely extracted of its alkaloids, to the extent of a marc without bitter taste.

Arno Viehoever stated that there was a portion of a cinchona alkaloid so absorbed in the plant cells that it cannot be extracted.

Lyman F. Kebler said that he had never been able to obtain 100% assay results with cinchona, but he had with ipecac.

THE ALKALOIDAL STANDARD OF FLUIDEXTRACT OF IPECAC, U. S. P.*

BY FRANTZ F. BERG.

The U. S. P. VIII standard for alkaloidal content of Ipecac was 1.75% total ether-soluble alkaloids for Rio Ipecac, and the standard alkaloidal content for Fluid Extract Ipecac U. S. P. VIII was 1.5 Gm. for each 100 Cc. thereof.

In the U. S. P. IX Cartagena ipecac has been included with the Rio variety. The Cartagena variety has been shown to assay higher in alkaloids than the Rio variety. Thus with both varieties official, it was decided not to change the standard of alkaloid content, permitting the use of either.

For some reason, unknown to the writer, the standard of fluidextract of Ipecac was changed from U. S. P. VIII requirement of 1.5 Gm. to 100 Cc. of product to requirement of 1.8 Gm. to 2.2 Gm. for each 100 Cc.

Possibly it was believed that through the admission of the Cartagena Ipecac this standard could be obtained.

It is also worthy of note that the menstruum for fluidextract of Ipecac was changed in the U. S. P. IX; whereas the former edition specified a menstruum of approximately 71% alcohol, the U. S. P. IX specifies a menstruum of about 37% alcohol, this change having been instituted in an attempt to render the fluidextract miscible with syrup in the preparation of syrup of Ipecac.

Numerous attempts have been made, using varying proportions of alcohol in the menstrea, for exhausting the drug, and while the product of a 37% alcohol permits of miscibility with syrup, it has been shown¹ that it is extremely difficult to effect exhaustion with alcohol of that strength. Ipecac appears to resist all efforts to obtain complete exhaustion by the use of any alcoholic menstruum. This problem of Ipecac extraction is one which confronts every maker of fluid-extracts, and, in an attempt to determine if the yield of fluidextract might be increased, some coöperative work² has been done—the result being a yield of 83% of fluidextract from the drug.

* Read before Scientific Section A. Ph. A., New Orleans meeting, 1921.

¹ JOURNAL OF AMERICAN PHARMACEUTICAL ASSOCIATION.

² Proceedings American Drug Manufacturers' Association, 1921.

The drug contains in addition to the alkaloids emetine and cephaline a great deal of pectinous matter and ipecacuanhic acid, the latter two of which precipitate in presence of 37% alcohol.

Believing that the alkaloids might be carried down with this precipitate, thus remaining occluded and not subject to solvent action of menstruum and be subsequently filtered out, an experiment was undertaken as follows:

Five hundred grammes of drug were moistened with 5 percent ammonia water, packed in percolator and exhausted with ether; the ether distilled off at temperature 60° C. and the residue taken up in 37 percent alcohol, filtered and the filter washed with sufficient 37 percent alcohol to make 500 Cc.

The product so obtained assayed 1.44% alkaloids of Ipecac, this experiment thus showing that the difficulty does not lie so much with the occlusion of alkaloids, as the inability of 37% alcohol to dissolve Ipecac alkaloids.

The writer is desirous of maintaining as high as standard as possible for pharmacopoeial preparations, but having found the yield of fluidextract to be somewhere in the neighborhood of 80%, over a period of three years and together with the above-mentioned experiment, the conclusion is reached that a requirement of an average of 2 Gm. of alkaloids per 100 Cc. is too high to maintain in the forthcoming Pharmacopoeia and, unless for some reason not obvious to the writer this standard should be maintained, it is recommended that we return to the requirements of the U. S. P. VIII, namely, 1.5 Gm. (with usual 10% variation) of ether-soluble alkaloids for each 100 Cc.

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NOTES ON ASH YIELD OF BUCHU.

BY E. L. NEWCOMB.

The following data relative to the amount of stems and ash in various commercial samples of Buchu are presented herewith.

The results indicate that the present purity rubric of 10 percent is satisfactory. The present ash standard of not to exceed 4 percent for Buchu seems to be too stringent. The comments by manufacturers bear this out, as well as the results presented herewith.

The ash tests have been carried out by C. H. Rogers and C. W. Folkstad. All of the data are presented in one table so as to facilitate comparison.

PURITY RUBRIC AND ASH TESTS—COMMERCIAL BUCHU SAMPLES.

Sample No.	Remarks.	Percent total ash.	Percent ash insol. in 10% HCl.
1a.	Whole Short Buchu, bought in 1920, garbled—5.5 percent stems, leaves free from stems powdered to No. 40.....	3.96	0.40
		3.85	0.62
1b.	Stems garbled from sample No. 1a, powdered to No. 40.....	3.38	0.64
		3.53	0.70
2a.	Whole Short Buchu, bought in 1920, garbled—7.7 percent stems, leaves freed from stems and powdered to No. 40.....	3.69	0.43
		3.69	0.61
2b.	Stems from sample No. 2a, powdered to No. 40.....	4.20	1.83
		4.55	2.11