

A test for heavy metals, particularly iron and copper, is easily carried out as follows:

Place 10 grammes (approximately) of the powdered acetyl salicylic acid in a 300 mil Erlenmeyer flask of Pyrex or Jena quality, moisten with sufficient water to thoroughly saturate the mass without an excess of water being apparent. Close flask loosely with ordinary cork or cover glass and allow to stand on a steam bath, temperature 90° to 100° C. for 2½ to 3 hours. The development of a reddish color on the lower surface of the contents in the bottom of the flask as viewed by examining same through the base of flask is indication of the presence of iron. The development of bluish or greenish globules or consolidated blue spots in the base upon bottom of flasks as viewed similarly is a fairly reliable indication of contamination by copper.

Acetyl salicylic acid when tested as above should not show more than faint traces of a pinkish color (trace of iron) and should be absolutely free from spots (copper).

ANALYTICAL AND RESEARCH DEPT.,  
UNITED DRUG COMPANY.

REVISING THE STANDARDS FOR HYDRASTIS.\*

BY E. L. NEWCOMB AND C. E. SMYTHE.

The following total and acid-insoluble ash figures have been obtained from a study of commercial samples of the drug Hydrastis and samples prepared from plants grown in the Medicinal Plant Garden, College of Pharmacy, University of Minnesota.

Sample No.	Source of sample.	Part of plant.	Total ash.	Acid insol. ash.	Sample No.	Source of sample.	Part of plant.	Total ash.	Acid insol. ash.
1 a	Com'l	U. S. P. powd.	6.28	...	h	U. of M.	" "	4.60	0.53
b	Com'l	U. S. P. powd.	6.49	...	i	U. of M.	" "	5.08	0.32
c	Com'l	U. S. P. powd.	6.8	3.02	7 a	U. of M.	Rhizomes only,	4.66	...
d	Com'l	U. S. P. powd.	6.74	3.58	b	U. of M.	well cleaned	4.67	...
2 a	Com'l	Whole U. S. P.	7.2	...	c	U. of M.	" "	4.90	1.6
b	Com'l	drug, rhizome	6.85	...	d	U. of M.	" "	4.91	1.62
c	Com'l	and roots	7.38	3.34	8 a	U. of M.	Rhizomes and	5.05	...
d	Com'l	" "	7.39	3.42	b	U. of M.	roots, well	5.15	...
3 a	Com'l	Whole U. S. P.	6.99	...	c	U. of M.	cleaned	5.36	1.13
b	Com'l	drug, rhizome	6.97	...	d	U. of M.	" "	5.24	1.07
c	Com'l	and roots	7.2	2.93	9 a	U. of M.	Lamina and	11.82	...
d	Com'l	" "	7.17	3.00	b	U. of M.	petioles	11.74	...
4 a	Com'l	Whole U. S. P.	3.51	...	c	U. of M.	" "	12.94	1.75
b	Com'l	drug, rhizome	3.79	...	d	U. of M.	" "	13.02	1.31
c	Com'l	and roots	3.79	0.22	10 a	U. of M.	Petioles only	7.89	Ash al-
d	Com'l	" "	3.82	0.35	b	U. of M.	Petioles only	7.42	most
5 a	Com'l	Roots, only the	3.46	0.023	c	U. of M.	Petioles only	8.58	com-
b	Com'l	larger roots,	3.55	0.084	d	U. of M.	Petioles only	8.70	pletely
c	Com'l	very clean	3.5	0.071					sol. in
d	Com'l	" "	3.47	0.07					5% NCl
6 a	U. of M.	Roots only,	4.67	...	11 a	U. of M.	Lamina only	13.1	2.8
b	U. of M.	large and	4.17	...	b	U. of M.	Lamina only	12.0	1.34
c	U. of M.	small, well	4.20	...	c	U. of M.	Lamina only	14.06	2.4
d	U. of M.	cleaned	4.73	...	d	U. of M.	Lamina only	15.08	2.6
e	U. of M.	" "	4.46	...	e	U. of M.	Lamina only	14.19	1.6
f	U. of M.	" "	4.68	...	f	U. of M.	Lamina only	14.13	1.56
g	U. of M.	" "	4.75	0.29	g	U. of M.	Lamina only	14.16	1.7

\* *Northwestern Druggist*, February 1921, p. 35.

All of the commercial samples were of excellent general appearance. Sample No. 4 was especially bright, bold and clean. Sample No. 5, consisting of roots, was separated from No. 4. The results on the study of the commercial samples indicate that the normal ash of the drug is usually between 3.5 and 4.5 percent.

The University of Minnesota samples were prepared from material collected during the latter part of August and the first of September. All parts were fairly well cleaned before being dried, the underground portions being rinsed with water. Some adhering soil, however, was not removed, as we found upon separating roots from rhizomes. This shows up in the ash of the rhizome and roots No. 8.

The results on the study of the Minnesota drug indicate that the normal ash is between 3.5 and 4.5 percent. From our results it appears that there is very little difference between the normal ash of the roots and the rhizomes. This is indicated in the study of the U. of M. and the commercial samples.

The limit of 6 percent for total ash, set by some foreign pharmacopoeias as pointed out by Viehovever,<sup>1</sup> is undoubtedly too stringent. A limit of 8 percent for total ash would no doubt be satisfactory.

Relative to the acid-insoluble ash we are inclined to believe after a careful study of Viehovever's data, as well as our own, that this had better be set at 3.5 percent for a maximum. The difficulty in cleaning the drug and the relatively high normal ash of the overground portions of the plant as presented herewith, indicate that a rather liberal allowance should be made.

In any event, it is highly important that the amount of dirt permitted in vegetable drugs be limited. We should have clean drugs as well as drugs high in medicinal value. Some of our recent studies indicate that even small amounts of so-called dirt may possess therapeutic qualities, quite different from the drug from which the dirt was separated. Who knows what the therapeutic action of the dirt in our crude drugs is?

DEPARTMENT OF PHARMACOGNOSY,  
UNIVERSITY OF MINNESOTA.

---

## BACTERIA IN (SO-CALLED) SOFT DRINKS.\*

BY LOUIS GERSHENFELD.

Scientific investigation has given ample proof that there is a close connection between the spread of diseases and the water that is used in the same community. A pure water supply is of first importance in the prevention of disease and in the conservation of public health.

In the past, and from time to time, there has been considerable discussion over the superiority of the chemical or bacteriological examination of water. This has been quite useless, for though a bacteriological analysis may be shown to be of greater importance, a chemical examination will detect the presence of certain chemical substances, from the relative amounts of which an inference may be drawn as to the existence of pollution with human or animal excreta or, in some instances, with poisonous or injurious compounds. It is, therefore, apparent that both examinations should be carried out.

---

<sup>1</sup> "Commercial Hydrastis," A. Viehovever, *JOUR. A. PH. A.*, 9, 779 (1920).

\* From an article presented by the author before Pennsylvania Pharmaceutical Association, 1920 meeting.