

The leaves are unusually large, being 2.5 to 4 cm. in length and the product was practically free from broken leaves and stems. Alexandria senna from the Sudan always contains many broken leaves and stems. Careful examination, however, proved beyond a doubt that the product consisted of the leaves of *Cassia acutifolia*, commonly called Alexandria Senna. The shape, color, odor, taste, texture and character of hairs agree with the description of Alexandria senna, as set forth in the U. S. Pharmacopoeia.

Since these importations came from London, through which port most of the Alexandria and Tinnevely senna received at the port of New York are sent, the country of origin was not known at first. Eventually it was ascertained that the leaves in question had been grown by a New York drug importer on his plantation in India. This importer undertook the cultivation of Alexandria senna in India some time ago, when that grown in the Sudan, giving way to the cultivation of cotton and foodstuffs, became scarce and expensive. Several tons of the pods of *Cassia acutifolia* were shipped from the Sudan to the plantation in India, where the seeds were removed and planted. The crop was a success, and, as a consequence, both of the species of senna given in the U. S. Pharmacopoeia are now coming into this country from India.¹

The superiority of the Alexandria senna cultivated in India over that grown in the Sudan, in so far as size and purity are concerned, parallels exactly the improvement in quality which occurred in Tinnevely senna when its cultivation was introduced in India from Arabia some one hundred and twenty-five years ago. In taste and odor these Indian leaves are equal, if not superior, to the Sudan leaves. The leaves, which are hand picked, have the advantage over the Sudan leaves in being unbroken and practically free from stems and dirt.

Alexandria senna from the Sudan has been adulterated with the leaves of *Cassia obovata*, or dog senna, as well as with Arabian or Mecca senna. This form of adulteration is difficult to detect in the grades known as "broken," "half leaf," or "siftings;" in fact, it is difficult to detect the presence of any foreign leaf in these grades if the adulterant is broken. Any form of adulteration is readily noticed, however, in the cultivated, hand-picked Alexandria senna from India, because it consists almost entirely of whole leaves.

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A GOOD PRACTICAL TEST FOR HEAVY METALS IN ACETYL SALICYLIC ACID (ASPIRIN).

BY EDWARD C. MERRILL.

The presence of heavy metals in acetyl salicylic acid (aspirin), even in minute amounts, is one of the most important considerations to be taken into account in connection with the stability and keeping qualities of the finished product. Their catalytic properties are well recognized. The causes of such contamination, developing no doubt from conditions of manufacture, such as type and condition of containers, nature of water supply and other factors, have necessitated the development of certain practical and rapid tests for the presence of these minute but very disturbing elements of contamination.

¹ This information was obtained from Mr. Alfred Joensson.

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.