

## REPORT OF THE COMMITTEE ON DRUG MARKET.

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EDGAR L. PATCH, CHAIRMAN.

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Examination of the records available would indicate the general improvement in conditions that should be expected from continued working of pure food and drug legislation.

The most interesting development of the past year has been the finding of many tablets and tablet triturates different from their labeled strength. In the case of non-volatile ingredients this would seem to indicate carelessness on the part of the tablet workman; in other cases it may be due to change in the tablet since it was made and bottled. In some instances it may be due to faulty sampling. If pills or tablets are purchased of a retail pharmacist in small lots, it might chance that variable results would be obtained. If an original package of 100 is purchased, the entire 100 weighed and the assay made on an aliquot part, such assay should be considered to fairly represent the lot bottled. Many substances are called for in tablet formulas that are subject to change in quantity by oxidation or evaporation.

Phosphorus can be kept unchanged in a coated soft pill mass, but soon oxidizes in a tablet mass, so that with the full quantity carefully put into the tablet no test for free phosphorous can be obtained soon after being made.

In some formulas Creosote and Carbolic Acid can be so combined as to be fairly permanent. In others it is impossible to prevent their volatilizing.

The Essential Oils and Menthol gradually disappear. While such substances as Paraldehyde and Chloroform can be emulsified and placed in a cut lozenge in noticeable proportions, they cannot be retained in compressed tablets or lozenges and formulas calling for 5 minims of Paraldehyde cannot be expected to contain the product even if put into the original powder before compression.

Criticism has been made of the use of Talc as a lubricator in tablet work, but either small percentages of Talc, of Boric Acid or of Paraffin must be employed to run the tablets. The Talc is insoluble and inert and in the small proportion used should not be considered objectionable. The Boric Acid used where tablets are designed for clear solution, is in such small proportion as to have little therapeutic action.

With the present custom of giving tablespoonful doses of paraffin oils three times daily as a mild laxative it is hard to conceive of any harm to come from the small quantity used in tablet lubrication. With the most elaborate system of checking formulas and tablet weights it may happen that the individual machine man may be inattentive to his duties without the knowledge of his foreman or employer, but there should not be an extreme variation of more than 10 percent above or below the labeled strength from any other cause.

The following table gives machine record and average weight and assay of a few tablets taken at random from stock:

	Should weigh	Average of 100	Assay
Ammon. Chloride 5 grains.....	0.325 G.	0.334	5.08 grains.
Bismuth Subnitrate 5 grains.....	0.397 G.	0.387	4.60 "
Salol 5 grains.....	0.435 G.	0.400	4.61 "
Strychnine Sulphate 1-30 gr.....	0.093 G.	0.0926	1-30 "
		(30 gave 1.027 grains)	
Codeine Sulphate 1-4 gr.....	0.098 G.	0.0994	1-4 "
		(each 0.253 grains)	
Sodium Bromide 5 grains.....	0.325 G.	0.3349	5.08 "
Terpin Hydrate 2 1-2 grains			
Heroin 1-24 grain.....	0.178 G.	0.1763	1-28 "
			(no correction for process)
Quinine Sulphate 2 gr.....	0.152 G.	0.1524	1.952 grains.
			(7 H <sub>2</sub> O)
			1.992 (8 H <sub>2</sub> O)
Soda Mints (3.87 grains Sod. Bic.).....	0.286 G.	0.283	3.9 Sod. Bic.
Sodium Bicarb. 5 grains.....	0.357 G.	0.360	5.005 grains.
Iron, Arsen. and Strych. No. 1.....	0.137 G.	0.138	1-60 "
(Strych. 1-60 gr.)			(60 gave 0.988 grains)
Migraine No. 2.....	0.250 G.	0.255	2.71 grs. Acetan.
			"Citric Ac.
			Caffeine and Camph. Mon. 0.25
			Should give 2.75 grains and 0.25 grains.
Nitroglycerin H. T. 1-50 gr.....	0.027 G.	0.027	99.73%
			(Lot 6 years old 75.3%)

Since the standard has been lowered on Ipecac Root the quality has been lowered and the price remains at the same relative level. Ten years ago lots assayed from 2.66 percent to 2.9 percent. The proportion of stem has gradually increased, lowering the assay. Average assay in 1911, 2.2 percent; 1913, 1.96 percent.

Aspirin tablets have had considerable attention. It has been stated by some authorities that nearly half of those sold are made from Acetyl Salicylic Acid other than the legal Aspirin. With 5 grain tablets offered in a large way from Acetyl Salicylic Acid at a cost of 65 cents per M., while from Aspirin the cost must be five or six times as great, there is a strong incentive to substitute. W. C. Alpers found tablets weighing between 5 and 6 grains to contain but 2 grains or less of Aspirin.

In this connection it is well to call attention to the unreliable character of some testimony as to the activity of preparations. A single bottle of tablets from a lot of several hundred thousand may be complained of, while assay shows the contents of the bottle to be true to label.

Dr. Rusby reports "All things considered, the year has shown a further improvement in the quality of drugs. Belladonna root and leaf, scopolia, gentian, dandelion, sumbul, convallaria, colchicum root and seed, barberry bark of root and stem, quebracho, both varieties of chamomile, pulsatilla, scoparius, artemisia, absinthium, coca, cola, stramonium, nux vomica, guaiac and guarana, beside some others to be mentioned later, have been almost unexceptionally good so far as my experience has gone and so far as relates to importations. Brokers' samples of inferior goods offered in the hope of finding a buyer, are not here considered.

On the other hand there is much to be desired as to the genuineness and quality

of Russian ergot and Russian anise, cut althaea, inula, pareira brava, cramp bark, cascarrilla, santonica, cannabis, marjoram, horehound, matico and buchu."

*Acacia.* Used for many technical purposes, as by lithographers, bookbinders, textile manufacturers, in mucilage, etc., as well as in medicine, many grades are imported. Six grades under the designation of "Gum Arabic"—firsts, seconds, thirds, fourths, sorts white, sorts amber, one as "crude gum," one as "Gum Acacia" and the ninth as "Insoluble Gum." All but the higher grades must be marked "Not U. S. P. for Technical Purposes Only." Only the highest grades are suitable for making emulsions. Acacia may have some food value, but the chief purpose in its use for the manufacturer of confections is its adhesive properties and as a filler.—L. F. KEBLER.

*Acid Tartaric.* Imported product liable to contain lead.—DRUG LAB.

Very dirty—unfit for use.—E. L. PATCH.

*Aconite Root.* A wide range of alkaloidal contents is found. Six lots assayed from 0.31 to 0.40. One lot wormy, decayed and spongy, gave by assay of carefully garbled samples only 0.068 and 0.088 percent. Eighteen bales were Japanese Aconite not recognized in the Pharmacopoeia. One lot of spurious gave 0.51 alkaloid. One lot, not *A. napellus*, gave 0.27 percent alkaloid, 3.75 percent ash. Thirty-three lots, some of which consisted of sixty bales, gave alkaloidal contents of 0.41 percent to 0.99 percent. Those examined for ash gave 3.8 percent to 5.25 percent. The lot assaying 0.99 percent was very small root, contained 30 percent of stem and 10.4 percent of sand and foreign material. It did not answer U. S. P. description for dimensions or percent of stem, but assayed the highest of any of the samples reported. Another sample containing an excess of stem assayed 0.67 percent. In many cases the course pursued was to admit the goods on guarantee that correct assay would be attached to bales.—L. F. KEBLER.

0.37 percent, 0.45 percent, 0.486 percent.—E. L. PATCH.

*Agaric White.* Was of good quality—1.5 percent ash.—L. F. KEBLER.

*Cape Aloes.* Four lots were of good quality.—L. F. KEBLER.

*Aloes.* The practice of importing Moka or Stinking Aloes under the name of Socotrine, so common last year, has been discontinued.—H. H. RUSBY. One lot (aloes in bulk) contained 16.4 percent moisture, 0.1 percent ash and was almost completely soluble in water. It contained an excessive amount of gummy matter, did not comply with U. S. P. and was rejected.

	Moisture	Water insol.	Ash
Zanzibar in skins.....	7.47%	41.03%	1.98%
Aloes in monkey skins.....	7.11%	19.1%	2.03%
Four Samples Aloes.....	9.6 to 23.8%	44.1 to 59.2%	
East India Aloes.....	17.92%	34.05%	4.8% was a thick viscous paste.

*Aloes Socotrine.* Fifteen lots examined and passed gave:

Moisture	Ash	Insol. in water	Insol. in Alc.
4.85% to 45.85%	1.2% to 5.67%	13.7% to 46.45%	(2) 11.8% to 16%

One lot was Curacao Aloes; one lot Mocha Aloes.—L. F. KEBLER.

*Althaea.* Most of this drug now appears cut into fine pieces or granules. This often looks beautifully white, but on scrutiny it is found coated with lime.—H. H. RUSBY.

One lot consisted of peelings of the root and did not agree with U. S. P. requirements. Was released on an affidavit that goods would not be employed in the manufacture of any food or drug commodity.—L. F. KEBLER.

*Alum.* Contains enough iron in most cases to discolor when mixed with substances containing tannin, salicylates, etc.—W. L. SCOVILLE.

*American Hemp.* 1.8 percent only of ether soluble resin.—E. L. PATCH.

Eckler and Miller do not find carefully selected samples to equal true Indian Hemp. The best tested 65 percent, others 50 percent and less, some extremely low. They do not think it should be made official.—AM. JOUR. PHARM.

*Ammoniac Gum.* One lot, acid number, 83; saponification number, 210; total Salicylic Acid, 4.97.—L. F. KEBLER.

*Angelica Root.* One sample of genuine gave: ash, 6 percent; loss at 110° C., 6.7 percent. One lot was prepared with glucose. One lot was prepared with sugar and glucose. One lot contained few mouldy pieces.—L. F. KEBLER.

*Anise Seed.* Fine gravel and pellets of earth are often found in anise, especially in the Russian variety. This product is mostly very impure indeed, whereas when pure it is a very sweet and good article. Not only does it contain large percentages of stones and earth, but there is usually a large quantity of coriander and many small black weed seeds. Practically all of it has to be cleaned before it can be admitted and even then it is none too good.—H. H. RUSBY.

Thirteen samples were of good quality, ash contents 6 to 6.8 percent. Four of doubtful quality gave ash contents 8.71 percent to 10.3 percent. Two contained 10 to 14 percent of foreign material. One gave 20.39 percent ash, and another 25.3 percent ash. The latter contained broken stone sifted to agree with the size of anise and these two lots were so grossly adulterated that they were refused entry. One lot seemed to have much foreign seed. Examination gave 92.17 percent pure seed, inert matter 4.78 percent, foreign seeds 3.05 percent. One sample contained 8.7 percent coriander seed. Another 12 percent of stems, sticks, coriander and other foreign seeds. One lot consisted of 84.7 percent anise seed, 8.6 percent foreign seed, 3 percent stems, 1.6 percent gravel, 2 percent other foreign material. A lot of 50 bales was damaged either by excessive heat, water or steam and had lost most of its activity. It was exported. One lot labeled Anise Seed was Fennel Seed. One consignment was 71.6 percent Anise Seed, 15.6 percent foreign seeds, mostly coriander, 12.8 percent stems, gravel and immature seeds, ash 11.5 percent. Four lots gave 9.76 to 21.4 percent ash. A portion of these was sifted and picked over and a satisfactory product resulted.—L. F. KEBLER.

*Arnica Flowers.* Two lots of good quality gave 7.05 percent ash. One sample was wholly spurious, being a species of *Inula*. Two lots were inferior and deteriorated, being seriously damaged by insects. Were unfit for medicinal purposes.—L. F. KEBLER.

*Arnica Root.* One sample was wholly spurious and had no relation to *Arnica* root. Another was grossly adulterated with spurious root and required garbling before it could be admitted.—L. F. KEBLER.

A thick and light colored, woody, much-branched rhizome or root has been mixed with this drug. It is at once noticed when seen, but bunches of Arnica are matted together with the spurious article in the center where it escapes notice.—H. H. RUSBY.

*Asafoetida.* Examination of some hundreds of samples gave alcohol soluble matter ranging from 3.9 percent to 81.27 percent, and ash from 2.2 percent to 75.4 percent. Lots have been allowed entry containing 35 percent of alcohol soluble material, with the understanding that the actual quality should be marked upon the cases and an equivalent amount used to give standard strength to all preparations. Several importers asked for admission of defective goods on the plea that they were to be worn about the necks of the colored people in the South to ward off disease. All lots containing less than 35 percent alcohol soluble matter were exported. Several lots have contained foreign resins determined by color reaction tests. Most of the foreign resin is galbanum, but one shipment contained ammoniac tears.—L. F. KEBLER.

The standards for this article are still most unsettled. Mr. Harrison, the English chemist, has produced figures to show that Dr. H. A. Seil's use of the lead number as a test is useless. He showed such a difference (as I now recall) as 15 to 180 in the lead number of different portions of Asafoetida. Mr. Harrison's claim is preposterous on its face. Such a difference could not exist in the same substance. The two portions must have represented entirely distinct substances. In asserting that two samples of Asafoetida show this difference he assumes that both are Asafoetida and since this is the very question at issue, he begs the question. Of course, if we are to start out by admitting that everything shipped in Asafoetida boxes is Asafoetida, then there need be no lead number at all, for portions of these contents consist of stones. There is the utmost need for some careful study of the origin and identity of Asafoetida et al. at the point of production. Meantime, we shall all be kept guessing, and one man's guess, under the circumstances, is about as good as another's.—H. H. RUSBY.

Po.	Ash	Alc. Ext.	Po.	Ash	Alc. Ext.
"	25%	52.5	"	26%	50
"	10%	67.5	"	20%	57
"	30%	43	"	12.5%	64
"	13%	64			

—E. L. PATCH.

*Asparagus Seed.* Two lots were offered as asparagus seed which were Corn Spurry, Spargula arvensis.—L. F. KEBLER.

*Aspirin.* Nearly 2,000,000 ounces of counterfeit Aspirin sold in U. S. annually. Even put up in exact imitation packages with same guarantee number.—H. A. METZ.

Tablets weighing 5 to 6 grains contained but 2 grains of Aspirin.—W. C. ALPERS.

*Apiol.* Adulterated with parsley oil. Green color is objectionable. Yellow color to be preferred.—LUTZ & OUDIN.

*Bay Leaves.* Ninety-two bales out of 184 were damaged by water and fire. Goods were destroyed.—L. F. KEBLER.

*Beef Extract.*

	Moisture	Na. Cl.	Proteid		Moisture	Na. Cl.	Proteid
1	18	19.4	30.99	5	20	9.02	47.6
2	18	22	36.56	6	20	9.89	51.87
3	18	8.49	42.38	7	20	9	47.69
4	18	14.	33.				

—E. L. PATCH.

*Belladonna Leaves.* Are subject to adulteration with *Scopola* leaves, poke leaves, chesnut leaves, oak leaves, belladonna stems and fruit. Some lots genuine but of physically poor appearance assayed 0.47 percent to 0.735 percent of mydriatic alkaloids, while lots of good physical appearance assayed but 0.19 percent to 0.21 percent. One lot containing 17.4 percent belladonna leaves, 33.3 percent scopola leaves, 8.2 percent stems and 41 percent of dirt and unsorted material, assayed 0.255 percent. Another 78 percent belladonna leaves, 7 percent poke leaves, 11 percent stems, 4 percent unidentified leaves, assayed 0.189 percent. Such lots were not considered proper for use as belladonna. Two lots largely of chestnut leaves, assayed 0.05 to 0.14 percent. One lot had 10 percent scopola leaves and 23 percent stem. One lot was belladonna fruit and twigs with fragments of leaves. Material imported as belladonna herb on account of the amount of stemmy material present often assayed well, ranging from 0.30 to 0.62 percent. Some lots packed when damp were quite mouldy, assayed from 0.072 percent to 0.31 percent. One lot had 24.6 percent of stem. The mixture assayed 0.20 percent, the stems 0.172 percent. Over 150 lots assayed from 0.168 to 0.733 percent.

	Alkaloid	Ash	Moisture at 110° C.
33 lots assayed.....	0.24 to 0.717%	5.93 to 21%	4.4 to 16.21%

—L. F. KEBLER.

*Belladonna Root.* Examination of over 125 lots from four to over 100 bales each, demonstrates that it is possible to obtain good root of the U. S. P. standard, but some good looking lots were deficient in alkaloidal strength. Assays ran from 0.149 to 0.75, but the greater number were standard or somewhat higher. Fifty lots assayed: Alkaloid 0.384 to 0.667; ash 4.52 to 8.50; moisture at 110° C. 1.5 percent to 10 percent. Quite a number of lots were adulterated with poke and scopola. One lot, nearly all poke root, assayed 0.02. Six lots badly adulterated with poke root, gave 0.15 to 0.422 alkaloid, 7.12 percent to 9.10 percent ash, 1.5 percent to 7.06 moisture at 110° C. Twelve bales containing from 13.5 to 27 percent crown root, assayed from 0.54 to 0.62 alkaloid. Another lot of 29 bales had 25 percent deficient in alkaloid, assaying from 0.25 to 0.44 percent. One lot was all scopola. One lot of 119 bales had 15 percent scopola in middle of bales, evidently added as an intentional adulterant. It is not practical to attempt to remove the adulterants, scopola and poke root, from *Belladonna* root.—L. F. KEBLER.

*Benzoin.* Is imported under the names Benzoin, Benjamin, Sumatra, Siam Benzoin, Benzol. Four lots of good quality gave 93.72 percent to 100 percent soluble in alcohol; ask 0.07 to 2.25; Benzoic Acid 11.99 to 15.4 percent. One lot was artificial Benzoin, differing materially from U. S. P. test. It was to be

used in the manufacture of shellac. Two lots offered as Refined Benzoin were purely artificial, tests showing presence of rosin and benzoic acid yielding chlorinated products. One shipment marked Pallenbang Gum Benjamin was an inferior product, not U. S. P. Alc. Soluble 84.9 percent, ash 1.5, Benzoic Acid 13.8 percent. One lot from Germany below standard and exported gave, alcohol soluble 72.7 percent, ash 3.06 percent. One lot contained 25 percent of bark fragments, ash 1.9 percent. The Pharmacopoeia states that "Benzoin is almost wholly soluble in five parts of warm alcohol." This is not very definite, and experience has shown that samples varying in quality from fair to good do not contain more than 15 percent of material insoluble in alcohol, and this was adopted as a standard. About 100 lots gave, alcohol soluble 64.3 percent to 99.5 percent, ash 0.09 to 2.15, Benzoic Acid 7.8 percent to 34.53 percent. The lot assaying 34.53 percent Benzoic Acid gave 1.04 ash and 86 to 88 percent alcohol soluble. Several lots contained foreign resins and an excess of alcohol insoluble material.

—L. F. KEBLER.

Ranged from 55.8 percent to 86.5 percent alcohol soluble.—W. L. SCOVILLE.

*Black Hellebore Root.*

Ash 9.4	Ext. 30.6	Ash 7.6	Ext. 31.4
" 9.	" 24.2	" 10.	" 25.4
" 9.	" 24	" 9.	" 25
" 10.	" 24		

—E. L. PATCH.

*Bryony Root.* One lot of inferior quality gave 5.4 percent ash, moisture 12.5 percent at 110° C. One lot good quality 2.8 percent ash.—L. F. KEBLER.

*Buchu.* Both short and long varieties are scarce and high. The mixing of finely chopped stems has about ceased, but lots of spurious leaves have been occasionally offered. This is a very puzzling drug. The genuine species seem to vary widely in different localities so that it is not always easy to determine whether we have something different or not.—H. H. RUSBY.

Over 100 lots gave from 4.74 to 35.8 percent of stems. Several lots of good quality gave from 3.8 percent to 6.63 percent of stems. In view of all conditions it was decided that an acceptable drug "should not contain an excess of 10 percent of stems, foreign material or worthless leaves (meaning leaves containing virtually no active principles.)" The Pharmacopoeia makes no provision for stems, but no importations are offered free from stems. Two lots of *Barosma crenulata*, a variety rejected by the 1890 U. S. P. as of inferior quality, were offered. Three lots unfit for medicinal use contained a large amount of spurious buchu leaves. One lot labeled long buchu was wholly spurious. Two lots of long buchu had 45.5 percent stems.—L. F. KEBLER.

*Burdock Root.* Mostly of good quality. Ash 4.19 percent to 12.6 percent. One lot contained some mouldy pieces.—L. F. KEBLER.

*Calabar Bean.* Five lots satisfactory, 0.144, 0.18, 0.14, 0.305, 0.142. One lot deficient, 0.085 ether soluble.—L. F. KEBLER.

*Calamus.* Unpeeled calamus, which alone should be used in medicine, is much more frequently seen than heretofore, and the quality is always good.—H. H. RUSBY.

*Calendula.* Eight lots genuine and satisfactory in quality. One lot imported under name of "Feminella, extra fine," consisted of colored florets of *Calendula*

officinalis. The U. S. P. does not allow color. Ash 9.6 percent. Ash in satisfactory lots 7.6 percent to 8.5 percent. One shipment heavily adulterated with calcium sulphate and artificially colored. Ash 49.61 percent to 54.81 percent. One lot imported under name of "Calendula Sabe" contained .67 percent alcohol by weight. Calendula flowers, under the name of Feminella, have been prepared and imported into the U. S. for the specific purpose of adulterating Saffron.—L. F. KEBLER.

*Canadian Balsam.* One lot consisted of a dark colored product having the odor of Storax and contained a small amount of volatile material. Does not comply with the requirements of the U. S. P.—L. F. KEBLER.

*Canella Bark.* One lot, imported under the name Canella Alba Bark, was found to be genuine and good. Ash 7.76 percent, moisture 7.13 percent, fixed oil 6.14 percent, petroleum ether soluble 7.99 percent. One lot, imported under the name of Canella Bark Siftings, was highly contaminated and not fit for medicinal use. It was designed for incense.—L. F. KEBLER.

*Cannabis Indica.* This is almost always imported under the name of "Gauza." Very little of the efficient old Cannabis Indica is now seen, nearly all being African or "French" Guaza, probably nearly all grown in Madagascar. It exhibits hardly any resin, is bright green, and dry, light, and consists largely, sometimes to the extent of about half, of fertilized akenes. In spite of all arguments, we do not believe this to be nearly as efficient as the genuine, and recently some good experimenters have expressed this view.—H. H. RUSBY.

Two-thirds of lots examined were unsatisfactory. Some had been heated in curing and had a musty odor. Several lots were not grown in India. Some lots imported as French Cannabis came from Madagascar. Some lots contained 15 percent of seeds, some of which were mature enough to germinate. One lot imported as Madagascar Cannabis coincided more nearly with inert fibre hemp than the true Cannabis Indica. It contained seeds and was without medicinal properties. Ash in two lots was 14.8 percent and 15.34 percent. The U. S. P. states, "In the powder few or no pollen grains or stone cells should be present." No sample of Cannabis Indica has been met with which could be said to conform strictly with these requirements. Some contained a few, others a large number of stone cells. This standard has not been rigidly adhered to.—L. F. KEBLER.

*Cantharides, Russian.* 0.4 percent, 0.43 percent, 0.4 percent, 0.44 percent, 0.34 percent Cantharidin.—E. L. PATCH.

*Capsicum.* Alcoholic extract 23 percent, 21 percent, 24 percent, 19 percent. Ash 5.2 percent.—E. L. PATCH.

Mostly of good quality. Ash 8.77 percent.—L. F. KEBLER.

*Cardamom Fruit.* The question of the admissibility of so-called "Green Cardamoms," those which have not been bleached and which are of a pale greenish-brown tint, has been discussed. These are certainly of good quality and it would be a wise move for the Pharmacopoeia to alter its description so as to admit them. The admissible percentage of shell is another mooted question. A really good cardamom will yield 70 to 75 percent of seeds, but it seems reasonable to place the requirements a little lower.—H. H. RUSBY.

*Cardamom Seeds.* It has taken but one short year of insistence upon purity



to completely break up the former almost general practice of adding spurious seed to the extent of 25 percent to 50 percent.—H. H. RUSBY.

Of 17 cases 16 were of good quality. One contained many broken seeds, dirt, refuse and other foreign matter and was destroyed. One lot was 50 percent spurious seed. One contained 1.1 percent stones, 0.1 percent rice, 1 percent other foreign matter. In one the seeds had been affected by some blight or parasite and had turned to a reddish color. One lot had heated and fermented and lost its natural odor and taste. It was worthless. One lot contained 15 percent of little stones or grains of dried mud of same size and color as cardamoms. One lot consisted of cullings of good cardamoms. One lot 36 percent of shells and does not agree with the U. S. P. Two samples of small and shriveled seeds mixed with full-sized seeds of bad color, gave 7.4 percent and 7.43 percent ash instead of the U. S. P. limit of 4 percent. Another sample gave 37 percent of shell. A good sample should not give over 25 to 30 percent of shell. Two lots contained 51.15 percent and 52.15 percent of Bastard Cardamoms and 2.25 percent and 3.8 percent dirt and other foreign matter—L. F. KEBLER.

*Cascarilla Bark.* Ash 8 percent, 12.8 percent, 6.6 percent, 7.4 percent.—E. L. PATCH.

The quality of this bark becomes steadily poorer. It is now mostly shavings and there is much wood shavings with it. Since it is nearly all used for incense, the fact creates little interest.—H. H. RUSBY.

*Cassia.* Sixty-seven shipments were of fair to good quality. Ash ranging from 1.85 percent to 4.99 percent. One lot was composed of scraps and sortings with a little admixture of spurious barks. Four contained a small amount of small stones and sticks. One was a low-grade Ceylon Cinnamon. One contained an excess of twigs, leaves and other foreign matter. One appeared to be a species of cassia or cinnamon, but not the kind commonly used. Much harder than common kinds, of a mucilaginous character and unpleasant bitter taste. One sample labeled "Africa bark," had a faint taste and was of poor quality.—L. F. KEBLER.

*Celandine Herb.* One lot very dirty and contained numerous weeds.—L. F. KEBLER.

*Celery Seed.* Ash 7.15 percent to 11 percent. Of 33 lots, three contained a small amount of foreign seeds, dirt and broken stems. One was of very poor quality, containing fine ground rock and giving 31.88 percent ash. One lot contained sand and gravel. One lot 19.72 percent of foreign seeds, stems, broken leaves, gravel and dirt.—L. F. KEBLER.

*Chamomile.* Of sixteen lots, one was neither "Chamomile" nor "Camomile." It was composed of leaves of a plant similar to tea plants. It grows in Greece and is used in making a brew, used the same as tea. Used especially in colds. One lot corresponds to a species of *Teucrium* in botanical characteristics.—L. F. KEBLER.

*Chicory Root.* Ash 4.2 percent to 15 percent. Moisture at 110° C. 8.4 percent to 9.4 percent. Two shipments were damaged by fire and water on the vessel. One had 905 bags good quality, 2095 bags damaged. The other had 1097 bags good quality, 2403 bags damaged. One sample showed latex tubes

and vessels of fig. One shipment was filthy and decomposed. Had been water-soaked.—L. F. KEBLER.

*Cinchona Rubra.* For years practically all of the bark so-called was only a hybrid, but recently, and especially for a year past, fine quill bark of pure *Succirubra* has frequently been received.—H. H. RUSBY.

Most of the *Cinchona* bark imported is satisfactory. Alkaloids 4.28 percent to 9.68 percent, ash 1.36 to 6.55 percent, moisture at 110° C. 6.5 to 10.5 percent. One sample was a little dirty. One lot was deficient in alkaloid, 0.605, ash 29.4 percent, moisture 12.10 percent. One lot very inferior, contained much foreign tissue and but a small percent of *Cinchona*, alkaloids 0.76, ash 24.87 percent. *Cinchona* quills, alkaloid 7.85 percent, ash 3 percent, moisture 4.5 percent.—L. F. KEBLER.

*Cinnamon Ceylon, Powd.* Ash 8 percent, powd. ash 5.2 percent (U. S. P. limit 4 percent.)—E. L. PATCH.

*Cinnamon.* Two lots inferior (old)bark of Saigon Cinnamon. One lot not true cinnamon (*Cinnamomum zeylanicum*) but cassia bark. Water in which some samples stood ten or fifteen minutes showed trace of chlorides. Two lots contained much wood fiber.—L. F. KEBLER.

*Cloves.* Of 489 lots 363 contained less than 5 percent of stem; some as little as 3.9 percent. Other lots contained some 5.5 percent to 15.4 percent stem, and some practically all stem. These last were for use in distillation. Three lots of clove stem gave 7.43 percent, 8.01 percent and 8.09 percent ash.—L. F. KEBLER.

*Coca.* Fifty lots examined gave alkaloid from 0.59 percent to 2.208 percent, ash 6.65 percent to 12.62 percent, moisture 3.1 percent to 9.2 percent. One lot gave only 0.14 percent alkaloid.—L. F. KEBLER.

*Cocaine.* Some shipments labeled "Cocaine" proved to be "Crude Cocaine," containing 2.3 percent to 2.5 percent ash, 0.75 percent moisture, 92.2 percent to 95.43 percent alkaloids and also cinnamyl and isotropyl cocaine. Should have been labeled "Crude Cocaine, for manufacturing purposes only."—L. F. KEBLER.

*Cocculus Indicus.* Good quality. Ash 4.18 percent, 4.67 percent.—L. F. KEBLER.

*Cochineal.* Twenty-three samples examined gave from 2.23 to 12.76 percent ash. Only three were above the U. S. P. limit of 6 percent. Part of the shipments were silver gray and one black.—L. F. KEBLER.

*Cohosh, Black.* One lot satisfactory. Ash 11 percent, moisture 8.6 percent.—L. F. KEBLER.

*Colchicum Root.* Of 36 lots examined, 29 assayed 0.4 percent and under, 14 of the number being below the U. S. P. standard. Twenty-two assayed at or above the standard. The highest was 0.72 percent and the lowest 0.234 percent.—L. F. KEBLER.

*Colchicum Seed.* Eleven lots assayed from 0.5 to 1.12 percent. Ash of one lot was 2.5 percent.—L. F. KEBLER.

*Colocynth.*

	Absolute Ether Extract	Iodine value of Ether Extract	Ash	Loss at 110° C.
Lot 1 .....	6.92	44	18.81%	4.9%
Lot 2 .....	8.36	17.4	12.4	6.4

One lot labeled Colocynth apples contained:

Pulp .....	26%	Seeds 68%
Fixed Oil .....	1.75%	14.06
Loss at 110° C.....	7.5%	6.2
Ash .....	8%	2.46
Water Insol.....	0.75%	1.16

Other lots gave higher ether extractive or fixed oil, showing presence of seeds. The U. S. P. Colocynth (bitter apple in the index) is the pulp free from seeds. The importation of powdered colocynth containing seeds, is illegal. Some lots yielded over 22 percent of ash. One lot old and brown consisted of unpeeled fruit. It has been generally believed in the trade that the character of pulp imported is decidedly inferior, similar to the colocynth, but not of the specific character of this drug. This will require an extended investigation.—L. F. KEBLER.

*Collodion Flexible.* 100 cc.=6 G. residue; should =10 G.—E. L. PATCH.

*Coltsfoot Leaves.* Genuine and satisfactory. Ash 18.7 percent, loss at 110° C. 10 percent.—L. F. KEBLER.

*Condurango Bark.* Satisfactory. Ash 8.28 percent to 12.30 percent.—L. F. KEBLER.

*Conium Seed.* Alkaloids 0.56 to 0.75, ash 0.92 percent to 6 percent.—L. F. KEBLER.

*Copaiba.* Thirty-nine satisfactory samples gave following results: Sp. gr. 0.935 to 0.997, refractive index 1.5025 to 1.5908, resinous mass 36 percent to 67 percent, acid resin 1.7 to 3.2. Seven contained gurjun balsam. Sp. gr. 0.928 to 0.995, refractive index 1.5018 to 1.516, resinous mass 40.4 to 62.3 percent, acid resin 2.2 to 3.1. Six lots contained paraffin oil. Four of these appeared to be African Copaiba. They were not completely soluble in glacial acetic acid. Sp. gr. 0.980 to 0.988, refractive index 1.5125 to 1.5128, resinous mass 65.5 percent to 70 percent, acid resin 2.8 to 3.1. One lot labeled Canine balsam proved to be Copaiba. One lot testing pure had a sp. gr. of 1.140. Twenty-seven lots contained from a trace to 25 percent of gurjun balsam. Five lots were African balsam. One lot contained added rosin. In many cases where it was known that the product was of proper origin the tests applied indicated that the commodity was adulterated. On account of these findings it was considered desirable to prohibit entry only when it was clearly established that adulteration existed. A complete investigation of this commodity from source of production to ultimate consumer should be made before we can accurately judge of quality of lots not flagrantly adulterated.—L. F. KEBLER.

*Coriander.* Some time ago a report was in circulation of this drug being heavily adulterated with vetch seed. The greatest watchfulness has failed to discover any such case.—H. H. RUSBY.

One lot had 12 percent of dirt and stems. Twelve lots were satisfactory, having less than 4 percent of foreign matter. One shipment contained many broken and immature seeds and 17.52 percent of foreign seeds. One lot had 6.3 percent of foreign seeds, stems and dirt. One lot was over-ripe and fit only for distillation. Three lots consisted of old and worm-eaten stock. One contained a large number of beetles, dead and alive, also foreign seeds, gravel, stems, etc.—L. F. KEBLER.

*Coto Bark.* Neither Coto nor Para-coto has been seen in the market during the past year, though many spurious lots of different kinds have been offered.—H. H. RUSBY.

Four lots marked Coto were wholly spurious. One lot marked "False Coto Bark" was true to name.—L. F. KEBLER.

*Cubeb.* Twenty-four lots were of good quality. Two gave 5.25 percent and 6.75 percent ash. Ten lots were unsatisfactory, containing over-ripe or immature poor quality berries, excess of stem and sticks and foreign matter. They were only fit for distillation. Thirty lots labeled "Cubeb with stems" consisted in part of immature and over-ripe berries, stalks and excess of stem. Were only fit for distillation. One lot gave, volatile ether extractive 10.84 percent, non-volatile 10.42 percent. One case was merely siftings, to which a few good berries had been added to improve the appearance. Two lots marked "Cubeb siftings" consisted of cubeb dust and coarsely ground stalks. Was unfit for use and was destroyed. On account of prevailing conditions it was ruled that a satisfactory product "should not contain in excess of 5 percent of stems and 5 percent worthless berries" (meaning berries containing little or no oil.)—L. F. KEBLER.

*Cumin Seed.* Five shipments of good quality. Foreign material 0.74 percent to 1.7 percent. Three importations slight excess of foreign material, 5 percent to 6.88 percent. Two lots contained an excessive amount of foreign material, sticks, foreign seeds, mostly plantain, a few coriander seeds and a small amount of mineral matter, total 16 percent and 21.8 percent. One contained seeds, which readily disintegrate, and was full of dust. Two contained considerable gravel, ash 12.9 percent, 13.08 percent. Two contained a large amount of undeveloped and unfertilized grains.—L. F. KEBLER.

*Dandelion Root.* Thirteen lots examined were of good quality. Four were inferior. One contained grass and other vegetable refuse, was musty and mouldy and unfit for use. One was ground and contained a large amount of inorganic matter, mostly small gravel, having the appearance of ground root. One contained 10 percent of foreign roots and tops. One was inferior in physical appearance, containing many small and worthless roots.—L. F. KEBLER.

*Digitalis.* New crop shows a great improvement in cleanliness of collection and care in preservation.—H. H. RUSBY.

Fifty lots were of fairly good quality. Ash in one lot was 7.8 percent.

One lot consisted almost wholly of large root leaves collected in the fall previous to season of flowering. U. S. P. demands leaves of second year at flowering time. One lot was carelessly dried. Two contained large amounts of grass, sticks and black leaves, showing improper curing. One lot of 18 bales had 7 unfit for medicinal use and 11 of good quality. One lot was very stemmy and carelessly dried. Two contained sticks and grass, but were otherwise satisfactory.—L. F. KEBLER.

*Doggrass.* Two lots genuine and good quality. One consisted of stems and root stalks of Bermuda grass, sometimes called Dog's Tooth Grass.—L. F. KEBLER.

*Dry Herb.* One shipment so labeled was a dried rhizome closely resembling Doggrass. The importer stated that it is used entirely by Italians for making tea.—L. F. KEBLER.

*Elder Root Powder.* Two shipments contained a seeming excessive amount of ash. Importers state that the root is excessively hard and of the toughest fibre and must be subjected to a milling process of longer duration than ordinary drugs. Ash 18.11 percent and 22.4 percent, moisture 5.39 percent and 8.06 percent.—L. F. KEBLER.

*Ergot.* This drug continues to be one of the most interesting of drug imports. The rigid application of standards applied last year to Spanish Ergot was rewarded by the supply this year of shipments almost all of which were fully acceptable. Such, however, has not been the case with Russian Ergot. This has again been mostly packed while wet, with the result of developing quantities of worms, besides fermenting and more or less decomposing the grains. Continued rejection of such ergot led shippers to clean it of its worms and worm dust before shipping, and to doctor its external appearance. The spoiled grains, of course, could be neither cured nor removed, so Russian Ergot has at best been quite poor. It is to be hoped that the reform that has been active among shippers will extend to the producers so that next year's crop will be of a different character.—H. H. RUSBY.

Sixty-eight lots were of good quality. Ash of two lots 2.55 percent and 2.57 percent. Twenty lots had been kept more than a year and in many cases had lost most of the internal purplish color of fresh ergot. Five lots were unsatisfactory, 27 contained 33 percent of immature and wormy pieces, 4 were brown inside, decayed and wormy, unfit for use. Nine lots small and immature grains which had been kept too long and had lost their strength. One looked as if it had been soaked in sea water and was unfit for use. One lot contained mouldy and wormy pieces. One was damp and slightly musty, but not mouldy. One contained many pieces soft and leathery, but of excellent external appearance. One had a large admixture of grains of rye, not ergotized. Most of the grains of ergot had lost their pinkish internal color. Seven lots were worm-eaten, mouldy and decomposed, unfit for use. In some instances it appeared that the product was damaged by undue exposure and if the character of ergot does not improve some steps must be taken to secure its shipment in sealed containers.—L. F. KEBLER.

*Euphorbia Pilulifera.* Four lots satisfactory. Ash of one lot 10.13 percent. One lot consisted almost wholly of stems and contained a large amount of other plant tissue which did not belong to the drug. One lot consisted in large part of broken leaves separated from the stem.—L. F. KEBLER.

*Ether Nitrous Conct.* 93.27 percent, 77.25 percent.—E. L. PATCH.

*Fennel.* The presence of fine gravel and pellets of earth in brown varieties of fennel has become very common. Ash determination is the best quantitative test.—H. H. RUSBY.

Forty-one samples were fair to excellent. Ash 7.2 percent to 8.6 percent. Thirteen samples were unsatisfactory, containing mouldy fruits, excessive quantity of foreign seeds, gravel, stem tissue, old or damaged seeds rendered worthless by insect attacks. One lot contained 23 percent of poor seed, dirt, stones, stems and foreign seeds. Four lots consisted of old and musty seeds with an admixture of weed seeds, sand, small gravel and dust. One contained 15 percent of dirt. Another 37.5 percent of stems and dirt. Two other lots contained excesses of stems, dirt and small stones. Ash 11.14 percent and 17.24 percent.

Fennel seed should not contain more than 5 percent of stems and other foreign matter and should not yield over 10 percent of ash.—L. F. KEBLER.

*Foenugreek.* Fifteen lots were of good quality, ash 2.75 percent to 4.9 percent, and 8 lots of fair quality containing from a small percentage to 8.6 percent of foreign matter.—L. F. KEBLER.

*Flaxseed.* Is mostly of good quality, containing from 3.2 percent to 4.7 percent of oats, chaff and foreign seeds.—L. F. KEBLER.

*Galega Herb.* One shipment, correctly labeled, had been completely spoiled in drying and was unfit for use. This drug is the chief constituent of Vaucaire obesity treatment.—L. F. KEBLER.

*Gamboge.* Most lots were satisfactory, with ash from 0.6 percent to 1.52 percent, alcohol insoluble portion 24.6 percent to 38 percent. One lot had an excess of alcohol insoluble portion amounting to 52.37 percent. One lot was peculiarly adulterated. A small stick of dark colored unfit gamboge was imbedded in the center of almost every one of the large lumps. After removal, alcohol insoluble 21.82 percent, ash 1.08 percent.—L. F. KEBLER.

*Gelsemium.* Ash 2.3 percent, moisture at 110° 7.10 percent.—L. F. KEBLER. Alkaloid 0.5 percent.—E. L. PATCH.

*Gentian Root.* Ten samples out of 33 were adulterated with cocoanut shells. The drug gave only 19.8 percent extractive to hot water instead of 30 percent to 40 percent.—APOTH. ZTG.

Of 53 lots 43 were satisfactory. Four were of fair quality. One was adulterated with peanut shells. Moisture at 110° C. 6 percent, ash 4.5 percent, insoluble ash 1.2 percent. One contained stone cells in abundance. Ash 5.73 percent, moisture 8.91 percent. One heavily adulterated with starch. One contained 5 to 10 percent of ground olive pits. One 3.8 percent of dirt and foreign matter. One was deficient in extractive matter. Gentian present was rotten and unfit for use. Moisture 6.68 percent, ash 8.94 percent, water soluble material 23.72 percent, alcohol soluble matter 29.5 percent.—L. F. KEBLER.

*Ginger Root.* Alcoholic extract 5.2 percent, 5.7 percent, 4.2 percent, 4 percent, 4.5 percent, 4.9 percent, 3.5 percent, 4.8 percent, 4.3 percent in whole root.—E. L. PATCH.

Eighty-three samples were satisfactory. Twenty-nine of these gave, ash 3.2 percent to 6.72 percent, ash insoluble in 10 percent Hydrochloric acid 0.17 percent to 1.89 percent, crude fibre 3.26 percent to 7.5 percent. Twenty-two lots were marked "Spent Ginger." Three gave:

Ash	Water soluble Ash	Alcoholic Ext.	Ethereal Ext.
1.47%	0.26%	6.20%	5.84%
1.47%	—	4.89%	4.98%
1.83%	0.24%	5.31%	6.37%

One lot contained dirt and other debris and was worm-eaten. One sample was colored with a coal tar dye corresponding to Cochineal Red—A.—L. F. KEBLER.

*Glycerin.* Manufacturers seem to be unable to make a glycerin that is free from volatile acids.—W. L. SCOVILLE.

*Goldenseal.* One sample, dirty, assayed, alkaloids 3.01 percent, moisture 8.3 percent.—L. F. KEBLER.

Powd. Hydrastis gave Hydrastine 1.6 percent. Whole drug, 3.48 percent, 3.44 percent.—E. L. PATCH.

Varied from 0.9 percent to 3.84 percent. Owing to high prices prevailing it should be watched closely.—W. L. SCOVILLE.

*Guaiaac Resin.* Twenty lots were satisfactory. Nine lots gave alcohol insoluble matter 0.2 percent to 13.24 percent, ash 0.3 percent to 3.4 percent, acid number 72.5 to 81, rosin, none. Nine were unsatisfactory, alcohol insoluble matter 9.3 percent to 35.39 percent. Three gave ash 2.02 percent to 5.5 percent, and acid number 30 to 49.56.—L. F. KEBLER.

*Guarana.* 4.56 percent, 4.73 percent, 4.7 percent, 4.44 percent, 4.17 percent, 5.34 percent, 4.24 percent Caffeine.—L. F. KEBLER.

*Hyoscyamus.* One sample out of 37 assayed as low as 0.021 percent. The rest assayed between 0.058 percent and 1.00 percent.—W. L. SCOVILLE.

There has been a great deal of difficulty experienced by the trade in securing henbane of proper quality. From the results here given, however, it would appear that the situation has not been worse than in the case of a number of other drugs. One difficulty noted is that the present pharmacopoeial method will not extract all of the alkaloidal matter, but in our work this method is not strictly adhered to. Some good looking lots assayed low and others not as good in appearance and containing a large excess of sand, assayed above standard. Seventy-one samples assayed from 0.063 percent to .196 percent alkaloid, ash from 19.5 percent to 26 percent, moisture 3.5 percent to 10 percent. Fourteen lots assayed .031 percent to .091 percent, ash 28.16 percent to 69.78 percent. This last sample, more than two-thirds ash, assayed 0.053 alkaloid. Quite a number of lots were low in alkaloidal assay (0.02, 0.0275, 0.038, etc., to 0.063) and contained excess of ash. Some samples contained foreign leaves, among which were stramonium, horehound, plantago (25 percent). Nine consisted almost wholly of annual plants, but assayed from 0.074 to 0.163. One consisted of entire herb, including thick stems, and assayed 0.131.—L. F. KEBLER.

*Henna Leaves.* One lot was stemmy, but was not to be used for medicine. Analysis of one sample gave, ash 9.7 percent, moisture 2.5 percent, leaves 81.64 percent, stems 13.96 percent. One importation contained but a small amount of henna. Consisted largely of leaves having a large number of stellate hairs like those of the chestnut. Also considerable mineral matter present.—L. F. KEBLER.

*Hops.* One sample contained sulphur dioxide about 1900 mgms. per kilo. Sixty-nine lots were satisfactory. Twelve samples gave trace of arsenic. Less than 1 part per 700,000. Three gave no test for arsenic. Petroleum ether extract in nine samples ranged from 9.39 percent to 13.98 percent. One contained slight trace of alkaloidal substances. Moisture in lots tested was 5.29 percent to 7.22 percent. Resin 8.9 percent to 12.6 percent. Ash contents should not exceed 8 percent. In some cases it was above 16 percent.—L. F. KEBLER.

*Horehound.* Mostly of good quality. Ash of one lot, 15.8 percent. Three lots chiefly, if not wholly, spurious.—L. F. KEBLER.

*Hyssop.* Should consist of leaves and tops. One contained considerable stem

without flowers. One was entire herb chopped up. One was chiefly the thick stems cut into short pieces and was unfit for use.—L. F. KEBLER.

*Inula.* Much of this drug has been injured by excessive heat in drying. In some cases it was brown and semi-charred. This is a very difficult drug to dry without becoming mouldy, but artificial heat must be applied moderately and for a long time.—H. H. RUSBY.

Seven shipments were satisfactory and six not. One was partly decayed and had an excessive amount of butts. One was partly decayed and had mouldy roots with some crowns and stem bases. Two had been either distilled or overheated in drying. One was heavily covered with mould. One lot of 65 bales had been distilled to remove its essential oil, or it had been destroyed by too much heat in drying. Its medicinal value was destroyed.—L. F. KEBLER.

*Insect Flowers.* Six samples gave, ash 4.35 percent to 7.13 percent, moisture 5.5 percent to 8.34 percent. One inferior lot looked like sweepings and stems. One consisted of open flowers.—L. F. KEBLER.

*Ipecac.* Samples Po. 10 years old assayed from 2.66 percent to 2.9 percent.—JOURN. PHARM. CHEM., 1913, p. 163.

2.24 percent, 1.837 percent, 1.818 percent.—E. L. PATCH.

The Rio variety has almost ceased to arrive, the Carthagena variety being supplied at a lower price. This is now mostly what is known as Panama Ipecac. It is evidently the Carthagena variety, but it shows some marked differences from that of previous years. Adulterants have almost ceased to be seen in ipecac, as have long and detached ipecac stems. The commercial drug has been nearly perfected.—H. H. RUSBY.

Seventeen lots assayed from 1.42 percent to 2.63 percent alkaloid. Average 2 percent. Ash of four lots was 3.25 percent to 5.25 percent, moisture 8.3 percent to 9.3 percent. Two cases were low in alkaloid, 1.42 percent and 1.43 percent.—L. F. KEBLER.

*Ipomoea.* Met with a number of times under the name "Mexican Jalap." Some dealers held that the resin from this drug was as efficient as the resin obtained from Jalap proper and it was not improper to use it in place of resin of Jalap. This view is certainly not concurred in by the writer. Ipomoea is probably used for making false resin of scammony. One lot gave, ash 7.9 percent, moisture 5.87 percent.—L. F. KEBLER.

*Iron Chloride Solution.* 10.4 percent Fe. 9.28 percent excess HCl. The U. S. P. should be 4 to 5 percent excess.—E. L. PATCH.

*Jaborandi.* One importation was wholly spurious jaborandi unfit for medicinal use. Assay, 0.124. Sixteen lots satisfactory, assayed from 0.696 to 1.2 percent. Two lots gave, ash 7.45 percent, 7.9 percent; moisture 5.91 percent, 6.7 percent.—L. F. KEBLER.

*Jalap Resin.* One lot so labeled was not pharmacopoeial. Another precipitated with hydrochloric acid, gave a greenish blue with ferric chloride and contained excessive amounts of acid resins and saponifiable matter. Two other lots apparently not jalap resin.—L. F. KEBLER.



*Jalap.*

59 bags—	Total resin 6.66.	Ether Sol. Resin 0.75
8 bags—	Total resin 6.07.	Ether Sol. Resin 0.76

—S. K. F.

Total Resin 13.07	Ether Sol. Resin 0.77
Total Resin 18.43	Ether Sol. Resin 1.43
Total Resin 7.33	Ether Sol. Resin 0.83
Total Resin 6.63	Ether Sol. Resin 0.68
Total Resin 5.95	Ether Sol. Resin 0.75
Total Resin 7.27	Ether Sol. Resin 0.67
Total Resin 5.51	Ether Sol. Resin 0.71

—E. L. PATCH.

Some interesting lessons are to be learned by observing this drug. Its percentage of resin may be said to increase almost uniformly with the size of the tubercles, other things being equal. Plenty of jalap exists and is collected that yields 15 to 18 percent of resin, but that which our dry market receives is almost always just a little above the U. S. P. requirements, and so it will always be. If we were to lower this requirement the quality of imports would in the main at once drop accordingly and the converse would certainly be true. The supply will always work up or down according to the demand. The spurious Tampico jalap, or so-called Mexican scammony, has come mixed with the genuine and this must be watched for.—H. H. RUSBY.

Ranges from 2.5 percent to 8.87 percent resin.—W. L. SCOVILLE.

Twenty-one lots satisfactory. Resin 7.13 percent to 20.16 percent, ash 3.62 percent to 5.67 percent. One lot small tubers, immature and rather wormy, assayed 20.71 percent resin. Three lots were unsatisfactory.

1 Resin 3.2%	Ash 5.58%	Moisture 10.25%.
2 Resin 6.088		
3 Resin 5.55	Ether soluble resin excessive 2.17%.	

—L. F. KEBLER.

*Juniper Berries.* The crop has been poor, many immature or dry berries being found among the good ones. In several instances advantage seems to have been taken of this fact to add exhausted stock.—H. H. RUSBY.

Thirteen lots were fair to good quality. One was sloe berries. Three consisted largely of old, mature juniper berries (one 50 percent with sticks, stones and dirt) and were fit only for distillation. Six lots consisted largely of exhausted berries.—L. F. KEBLER.

*Kamala.* This now comes of uniform good quality instead of with 30% to 80% of mineral matter as formerly.—H. H. RUSBY. Seventeen lots were satisfactory. Ash 2.58% to 6.90%. Five lots were badly adulterated, containing either ground olive stones, bark, sand, quartz crystal, or dirt. Ash 28% to 58%. Two lots of genuine had excessive ash 9.35% to 12.6%. A package from a lot was examined and found satisfactory. The importer found samples from the same lot unsatisfactory. Re-examination showed that some packages were pure kamala, while others in the same lot were adulterated, showing the necessity of examining every bale.—L. F. KEBLER.

*Keiselguhr.*

	Color	Ignited loses	Water sol.	Acid Water sol.	Carbonate
1	Grayish .....	7%	3.2%	5.6%	Trace
2	Dark Green .....	14%	1.2%	27.2%	Excess
Lot No. 1	washed with acid water, then water and dried—				None
		7%	0.5	1.50	—E. L. PATCH.

*Kino.* Ash 0.9% to 1.66%. Moisture of one lot 12.22%. Alcohol insoluble excessive 36.2%. In good samples 11.55% and 12.10%.—L. F. KEBLER.

*Lactucarium.* The small amount received has been much better than that of last year, being either freer from mould or affected only superficially.—H. H. RUSBY. Ash 5.9% to 6.6%. Moisture 5.09%. Two lots consisted of rotten, mouldy fermented matter, unfit for use. Two others were moulded through and through and were totally unfit for use.—L. F. KEBLER.

*Larkspur Seed.* One lot of satisfactory quality. Ash 5.06%. 0.22% impurities, 0.181% gravel, 0.039% foreign seeds. Three shipments were not the larkspur seed recognized in medicine. Alkaloid 0.04%.—L. F. KEBLER.

*Lavender Flowers.* Mostly satisfactory. One lot was old flowers nearly odorless, mixed with stems and dirt of disintegrated flowers.—L. F. KEBLER.

*Licorice Root.* Large quantities of the cut root have arrived and the quality has been very good.—H. H. RUSBY.

*Licorice.* Two lots—Ash 5.05% and 5.40%. Moisture 6.07% and 8.35%. Extractive 26.32%, 27.88%. One consignment was mouldy and unfit for use.—L. F. KEBLER.

*Lily Root.* Five lots were filthy, decomposed and unfit for use.—L. F. KEBLER.

*Lovage Root.* Good quality, gave Ash in root 9.26%; in rhizome 7.06%. Moisture in root 7.8%; in rhizome 7.5%.—L. F. KEBLER.

*Luplin.* Ash 11.72%. Ash insol. in HCl. 6.71. Ether soluble 75.46%.—S. K. F. Following upon the refusal of the authorities to admit the old lupulin that the brewers would not take, a good fresh article is now commonly seen.—H. H. RUSBY. One lot gave 13.02% ash, but gave 69.75% ether extract, was to be used in beer making.

Lot 1.....	13%	ash	72.9%	ether	extract
Lot 2.....	11.8%	ash	68.39%	ether	extract
Lot 3.....	8.55%	ash	78.59%	ether	extract

Fifty-three others gave—Ash 10.23% to 19.75%. Ether extract 63.96% to 77.82%. Five lots consisted of old lupulin, a large amount of sand, too many black and worthless particles, and were unfit for medicinal use. Ash 7.41% to 27.31%. Ether extract 59.04% to 75.16%. One lot labeled "Contains 7½% of ash in excess of U. S. P. requirements" did contain 45.42% of ash or 35% excess. Two other lots were old, spoiled and unfit for medicinal use.—L. F. KEBLER.

*Lycopodium.* This drug was formerly always contaminated with flour, usually in very small amount, and it was claimed that this resulted from storage in flour sacks or barrels. Persistent objection has developed a commercial article in which scarcely a grain of starch can be found. Of much interest was a shipment of corn starch so perfectly colored as to exactly resemble lycopodium. A

peculiar feeling between the fingers betrayed it, even before the microscope was applied.—H. H. RUSBY. Essentially pure, although some lots contained a trace of starch or fine pollen. One sample contained as high as 1.35% starch, while three contained enough to constitute an adulteration, 6.53%, 5% and 12%. Ash contents ranged from 0.17% to 1.96%.—L. F. KEBLER.

*Manaca*. Moisture 7%. Ash 1.4%. Alkaloids present. One lot was *pareira brava*.—L. F. KEBLER.

*Marjoram*. This drug, which now always arrives cut, has been made the subject of observation during the year, and much of it has been found adulterated with rosemary and other leaves.—H. H. RUSBY. Ash contents 11.6% to 17.23%. Two lots contained pebbles and grains of sand, and two others were good leaves but very dirty. Highest ash contents 25.21%. One lot contained 9.32% of foreign leaf, dirt and gravel; two others were mostly spurious, containing only fragments of marjoram.—L. F. KEBLER.

*Marrubium*. This drug has caused more trouble than almost any other. Various adulterants, but especially *M. peregrinum*, have been admixed. The admixture has been very unequal, some bales with none, others, of the same lot, heavily contaminated. The widest difference may be found in different parts of the same bale.—H. H. RUSBY.

*Matico*. The spurious variety, which a year or two since was said to be the only thing attainable, still arrives, but is yielding place to the genuine.—H. H. RUSBY. Six consignments of good quality gave—Ash 7.7% to 16.65%. Moisture 3.85% to 6.96%. Several lots were partly or wholly spurious. The spurious leaves were mostly *P. mandoni* and *P. aduncum*.—L. F. KEBLER.

*Milk Sugar*. Parry has examined 100 samples. He finds evidences of carelessness in manufacture indicated by color, odor, solubility and liability to decomposition. Five samples were cheesy on account of casein. Five were not entirely soluble on account of casein. Samples liable to decomposition or fermentation contained casein of poor quality. One sample contained 0.06 percent of magnesium salts. All the samples were of European origin.—CHEM. AND DRUGGIST.

*Mustard*. It is not generally known that black and white mustard frequently exchange color, while retaining all their other characteristics. This sometimes makes a good sample look very bad until it is carefully examined. The percentage of charlock in black mustard is very difficult to estimate and it is not remarkable that ground mustard is sometimes held up on this charge when the grinder is very positive that it is unfounded. He has simply not examined his whole seed with sufficient care.—H. H. RUSBY. Different lots contained from 80 to 99.09 percent white mustard seed. Brown and black seed 0.71 percent to 19 percent. Mineral matter 0.19 percent to 1.9 percent. One lot contained 15.5 percent of foreign seeds; another 21.8 percent of poor seed. Two lots contained 22.88 percent and 36.46 percent of foreign seeds. Thirteen other lots contained from 1.11 percent to 12.65 percent of foreign seeds, charlock, Chinese mustard, rape, lambs quarter, smartweed, false flax, millet, etc. One lot was almost wholly charlock with an admixture of rye and wheat. One other had 26.4 percent charlock and 1.5 percent of other foreign matter.—L. F. KEBLER.

*Myrrh.* Nine samples ranged from 25.1 percent to 38.7 percent soluble.—W. L. SCOVILLE. When in the ordinary form is of excellent quality, but Myrrh siftings have to be scrutinized with great care as they are apt to be loaded with fine fragments of other gums, beside gravel and dirt.—H. H. RUSBY. Satisfactory lots gave 4.02 to 10.25 percent ash. Several lots were siftings and gave excessive ash (11.75 percent to 13.83 percent) and alcohol insoluble matter (64.19 to 74.1 percent).—L. F. KEBLER.

*Nux Vomica.* Almost impossible to find drug assaying U. S. P. standard of 1.25 percent Strychnine. One sample Ext. Nux Vomica assayed 8 percent instead of 5 percent.—C. E. VANDERKLEED. 1.32 percent, 1.29 percent, 1.22 percent, 1.20 percent.—E. L. PATCH. Ash contents 0.9 percent to 1.88 percent, moisture 5.57 to 9.65 percent, Strychnine 0.9 percent to 1.6 percent.—L. F. KEBLER.

*Olibanum, Gum.* Five lots of good quality gave ash 0.95 percent to 3.69 percent. One lot gave alcohol soluble 74.8 percent.—L. F. KEBLER.

*Ononis Root.* Two lots of good quality gave moisture 8.52 percent and 9.30 percent; ash 5.94 percent and 11.01 percent. One lot was mouldy and unfit for use. Its activity is due to glucosides especially liable to damage from fermentation and such a product as this one should not pass into interstate commerce.—L. F. KEBLER.

*Opium.*

Gum .....	12.37%	11.19%	9.18%	11.04%
Powd. ....	11.16%	12.35%		
Gran. ....	12.40%			

2 lumps weighing about 4 lbs. contained two stones weighing 13 ozs.

E. L. PATCH.

Different lots assayed—Crude Morphine 13.2 percent, 12.03 percent, 14.5 percent, 12.6 percent, 10.1 percent, 11.6 percent. Purified Morphine 9 percent, 10.33 percent, 1.05 percent, 11.7 percent, 9.99 percent, 11.58 percent. Two lots of prepared opium gave little morphine, 1 lot 9 percent, 1 lot of powder, 5.2 percent. Were probably smoking opium. Thirteen lots gave from 8.93 percent to 15.9 percent morphine. One lot of deodorized assayed 15.68 percent.—L. F. KEBLER.

*Origanum.* Under this name with no qualifying word, only the purple topped *Origanum vulgare* should be supplied. During recent years other species, *O. Dietamniss*, *O. creticum*, *O. onites*, etc., have been substituted. Pressure being applied there has been a return during the past year to the genuine species.—H. H. RUSBY.

*Papain.* Is extremely variable. On an arbitrary standard samples ranged from 25 percent to 100 percent of the standard. No attempt to ascertain the relative strength of those testing up to standard. Samples below 50 percent of the standard were common.—W. L. SCOVILLE. Contains about 50 percent (53 percent) of bread crust. The entire mixture powdered:

- 1 part digested 20.2, fibrin Neut.
- 1 part digested 24.1, fibrin Alk.
- Bread crust removed—1 part digested 36, fibrin Neut.
- 1 part digested 46, fibrin Alk.
- The Bread crust had some adhering papain and tested
- 1 part digested 7.5, fibrin Alk.
- No. 2 1 part = 23.1 parts fibrin (dry beef) neutral.
- " 26.5 parts fibrin (dry beef) alkaline.

E. L. PATCH.

*Pareira Brava.* This drug is almost uniformly spurious, or adulterated, or mixed largely with stem pieces. One of the adulterants is very difficult to distinguish when cut into short pieces, but it contains much less alkaloid and fat.—H. H. RUSBY. One lot 9.4 percent moisture, 5.6 percent ash. One sample contained excess of stem. Root only is official. One lot was not Pareira Brava, nor had it any relationship or similarity to that drug.—L. F. KEBLER.

*Parsley Seed.*

Foreign matter.....	2.11%,	1.21%.
Total Ash.....	7.03%,	9.92%, 6.61%.

L. F. KEBLER.

*Peppermint.* One shipment was Spearmint that had been partially exhausted of its active constituents. Another had 10 percent of Spearmint leaves.—L. F. KEBLER.

*Pepper, Black.* Seventy-five lots gave from 3.65 percent to 6.42 percent of ash. They were of good quality. Ten lots gave 11.08 percent to 13.15 percent crude fibre. Three lots gave 10.04 percent, 10.87 percent and 12.88 percent of ethereal extract. The iodine number of one lot of extract was 126.3. A few lots were dirty and contained sand and other impurities. Ash in one lot 12.02 percent. Some lots contained excess of shells. One gave crude fibre 16.87 percent, Starch 29.97 percent, Ash 6.3 percent. One lot was worm-eaten and larvæ infested and was unfit for food or medicinal use. Four lots were wormy, mouldy and rotten. One lot had 30.5 percent seed, 9½ percent stems. Lots marked pepper shells and dust were true to name.—L. F. KEBLER.

*Pepper, Red.* Ash 7.93 percent, 8.49 percent, 9.32 percent, 7.95 percent, 9.05 percent, 7.95 percent, 5.68 percent, 8.40 percent. Ether Ext. 13 percent, 10.60 percent, 14.70 percent, 18.91 percent, 13.12 percent, 10.4 percent, 13.25 percent, 14.50 percent. Iodine No. 132.9, 138, 123.4, 107, 127.3, 125.2, 137.3. Seventeen other lots gave ash 4.78 percent to 10.02 percent. Ether extract 11.22 percent to 20.77 percent. Iodine No. 110.4 to 145.7. One lot was misbranded. One 5 percent short weight. One 75 percent of badly moulded and louse infested fruits. One 18 percent mouldy material, 27 percent seeds and 73 percent pods.—L. F. KEBLER.

*Pepsin.* Several lots diluted to standard with common powdered sugar instead of sugar milk. One lot was 1-2500 only.—E. L. PATCH.

*Peru Balsam.* Imitation balsam is very difficult to detect by present chemical methods available and substitution will probably continue for some time. Even if it conforms to the pharmacopœial chemical tests it should be rejected as not derived from *Toluifera Pereira*. The imitation balsam is not uniform in composition. Fifteen shipments of Peru Balsam gave sp. gr. at 25° C. from 1.14 to 1.154 percent. Cinnamein 50.32 to 66.3 percent. Iodine No. 46 to 66. Three samples contained rosin, which is a common adulterant. Two labeled "Artificial Balsam Peru" contained rosin. One had sp gr. 1.136. Cinnamein 54.80.—L. F. KEBLER. Five consignments labeled "Synthetic Balsam Peru" contained rosin, had high acid number (58.8 to 70) and excessive cinnamic acid (Cinnamein 55.01 to 60.67). Nine samples of good quality official gave acid number 22 to 75

Cinnamein 52 to 60. One shipment labeled "Artificial" should have been labeled "Imitation." It contained 10.8 percent of alcohol not declared sp. gr. 1.0432. The artificial or imitation products are exported from Germany, but do not comply with the Germ. Pharm. requirements. One lot was a mixture of tolu, rosin, cinnamein and undetermined matter. Many lots are imported as "Artificial," presumably for use in soap making. Two lots imported under the name of "Perugene" gave sp. gr. 1.1 to 1.102, Cinnamein 62.6 to 95.5; Acid number of one was 70.8 Saponification number 247. Perugene formerly contained rosin, which is omitted in later lots.—L. F. KEBLER.

*Potassium Acetate.* Lot of 50 lbs. had particles of glass in it.—E. L. PATCH.

*Potassium Nitrate.* 155 percent K Cl. 1.55 percent K Cl. 3.1 percent K Cl. (1.18 percent K Cl U. S. P. standard).—E. L. PATCH.

*Protargol.* Spurious packages offered showed 4 percent silver and contained over 60 percent insoluble matter. The genuine contains 8.3 percent silver and is entirely soluble in water.—W. C. ALPERS.

*Pulsatilla.* Ash 7.4 percent to 9.95 percent.—L. F. KEBLER.

*Pumpkin Seed.* One lot proved to be watermelon seeds. One sample was true to name, but quite old.—L. F. KEBLER.

*Quassia.*

Chips	Ash	2.2%	Ext. 6%
Ground	Ash	8%	Ext. 7%
Ground	Ash	3%	Ext. 3.3% (apparently partially exhausted.)

E. L. PATCH.

Ash 5 percent to 8.6 percent. One lot showed bitter principle to be practically absent and was mouldy and unfit for use.—L. F. KEBLER.

*Quillaja.* This bark now always arrives in the cut condition and is of good quality.—H. H. RUSBY.

*Quince Seed.* Thirty lots were mixed with foreign matter in proportions from 11.2 percent to 55 percent. It consisted of ground or broken bark, dried pulp of immature fruit, broken shells of Brazil nuts and pieces of dried and mouldy fruit. The ash of a good quality product was 4.11 percent.—L. F. KEBLER.

*Rhatany.* One sample of good quality gave Ash 3.44 percent. Moisture 5.65 percent.—L. F. KEBLER.

*Rhubarb.*

Shensi	.....	46.2 dry Ext.	H. D. 42.8%	Shensi 39.8%
Canton round	.....	44.7 dry Ext.	H. D. 41.8%	Shensi 36.1%
Canton flat	.....	46.6 dry Ext.	H. D. 46%	
(Alc. 4 Water 1)			H. D. 40.2%	

E. L. PATCH.

The government having anticipated the proposed pharmacopœial requirement that not more than 15 percent of the pieces shall show a blackish or hollow interior when broken, there has been an immediate response in the form of greatly reduced percentage of such pieces.—H. H. RUSBY. Sixteen lots satisfactory. Ash too high in some cases. 12.23 percent to 37.18 percent. Moisture 4.48 percent to 7.49 percent. Two lots were from *R. Rhaponticum* instead of *R. officinalis*.—L. F. KEBLER.

*Red Saunders.*

Powd.....	37.5%	H <sub>2</sub> O	1.2%	ash in dried
	7%	H <sub>2</sub> O	1.2%	ash in dried
	44%	H <sub>2</sub> O	1.2%	ash in dried

E. L. PATCH.

*Resin Scammony.* Adulterated with Resin Guaiac.—ERA.

*Roots.* Thirty-two samples received at the port of San Francisco invoiced under this name. Of these, 19 could not be identified. All were shipped from China and were undoubtedly to be used by the Chinese. Two resembled *Althæa* root; two *Aralia edulis*; one the outer peeling of *Pachyma Cocos*; one cherry gum coated with benzoin; two sliced roots treated with burnt molasses or syrup; one a species of dock; one sliced roots of egg plant; one yam, or some species of *Iris*; one taraxacum or chicory. Two lots were mouldy and unfit for use.—L. F. KEBLER.

*Rosemary.* Ash 5.1 percent and 5.2 percent. One lot contained many small leaves, many dark colored and withered and 8.92 percent of stems and capsules. One, invoiced "Distilled Rosemary leaves" was true to name. Leaves very black and "dead." Ash 6.07 percent.—L. F. KEBLER.

*Saffron.* Wasicky (Pharm. Post.) has found a sample of saffron which was strongly adulterated with unbroken flowers of *onopordon acanthium* (cotton thistle). This adulterant can easily be detected microscopically by the presence of narrow connectives and peculiarly formed conglomerations of crystals, which are absent in true saffron.—DRUGGISTS CIRCULAR. It is not likely that so great a turnover was ever made in the quality of an article as has been made in the quality of Spanish Saffron imported into this country. A few years ago one could not expect to get a genuine and pure saffron. Now we have no expectation of getting anything else. The last attempt that has been made is that of causing the tissue to absorb a sugar solution. During this year several large shipments of Safflower have been offered as "Asafran," the Spanish name for Saffron.—H. H. RUSBY. Thirty samples gave moisture 6.58 percent to 16.83 percent. Ash 3.9 percent to 6.85 percent. Petroleum ether extract 1 percent to 4.19 percent. Thirteen lots contained from 4 percent to 8 percent added oil. Several contained excessive moisture 17.01 percent to 18.09 percent. Nineteen contained excess of inorganic matter giving ash 27.7 percent to 32.01 percent. The additions were Borax, Sodium Chloride, Sulphate and Carbonate and Potassium Nitrate. Several were colored with coal tar dye. One such gave 33.3 percent ash and 20.78 percent petroleum ether extract. Two lots were Safflower. One consisted entirely of florets related to those of the thistle, which had been artificially dyed to represent saffron and weighed. Ash 47.73 percent; 37 contained excess of yellow tissue 6.7 percent to 21.17 percent. Should not exceed 5 percent. Seventy gave water soluble 44.07 to 54.86 percent. (It is not stated whether the drug lost these amounts to water or yielded these amounts of aqueous extract.) The importations of 1912 were of better average than those of previous years.—L. F. KEBLER.

*Sage.* Some lots contained excess of stem (9.3 percent to 48 percent) Ash

of three lots—3.8 percent to 8 percent. One lot was *Salvia triloba* and contained excess of stems. It was unfit for medicinal use.—L. F. KEBLER.

*Sambucus*. Elderberry flowers are supposed to be those formerly official, from *S. Canadensis*, but when our crop is short the European species is imported. There seems no reason why it is not equally acceptable.—H. H. RUSBY.

*Sandalwood*. Ash—one lot 1.6 percent. One sample was not sandalwood but the wood of *Amyris balsamique*.—L. F. KEBLER.

*Santonica*. Many large shipments have arrived of a form of this drug that is puzzling. It so closely resembles the genuine that it may well be regarded as a young form of it and its odor is exquisite. On assay it is found to contain less santonine, often very little and sometimes none. It is shorter, greener and often has a short piece of peduncle attached. It is much in need of investigation.—H. H. RUSBY.

*Sarsaparilla, Mexican*. From the interior of Vera Cruz have arrived several shipments of a very thick blackish, woody and decidedly astringent *Sarsaparilla*, having the general features of Mexican. All that could be learned of the origin was that it was this variety from old plants. Its flavor is opposed to this view and we must regard it as of unknown origin.—H. H. RUSBY. Some shipments consisted of rhizomes or an excessive amount (73.3 percent) of stems and rhizomes. The pharmacopœia recognizes the roots only. One lot was totally spurious, consisted of some species of *Aralia*.—L. F. KEBLER.

*Savory*. Ash from 6.10 percent to 12.5 percent. One lot contained 33.8 percent of stems and 1.3 percent of blossoms, foreign leaf and gravel.—L. F. KEBLER.

*Scammony Root*. One importation gave 5.22 percent to 8.7 percent resin. Five importations were not scammony root but *Ipomea*, called Mexican Scammony at times. Resin from this source may have an action similar to scammony resin, but to represent a product as containing the drug when it does not, is an inexcusable deception.—L. F. KEBLER.

*Scammony Resin*. Eleven satisfactory lots gave 0.14 percent to 0.64 percent ash, 82.75 percent to 93.01 percent resin. One lot gave acid number of 55.7. Two lots invoiced as resin scammony gave acid number 19 and 28.75. Saponification No. 186 and 192.93. One lot invoiced as resin scammony was Gum Scammony. Three lots were low in resin. One gave 20.04 percent ether soluble resin and 3.86 percent ash.—L. F. KEBLER.

*Scopola*. Analysis of one lot gave 0.65 percent alkaloids; the other gave:

	Rhizomes	Roots
	93.7%	6.3%
Moisture .....	9.73%	7.63%
Ash .....	7.12%	7.66%
Insoluble Ash.....	0.37%	0.40%
Alkaloids .....	0.545%	0.43%

Twelve lots gave alkaloid 0.323 percent to 0.75 percent. Ash 5.85 percent to 6.62 percent. Moisture 4.3 percent to 10.3 percent. Two lots were somewhat mouldy.—L. F. KEBLER.



*Senna, Senna Siftings.* Persistent application of rigid requirements has accomplished what was declared impossible, the proper cleaning of this article so that it is capable of yielding a good galenical preparation, and this is what the shippers are now compelled to send here.—H. H. RUSBY. Seventeen shipments gave moisture 7.4 percent to 10.7 percent. Ash 5.6 percent to 11.8 percent. Extractive 41 percent to 48.2 percent. Two consignments invoiced as "Senna and Senna Leaves crude" were half leaf senna of good quality. They gave moisture 8.30 percent and 9.6 percent, Ash 11.9 percent and 12.5 percent, Extractive 45.3 percent and 46.3 percent. Two lots invoiced "Alex. Senna" and "Senna Leaves" should have been invoiced as "Broken Senna." One invoiced "Senna Leaves" was Senna Pods. Senna Pods are now substituted to some extent for the leaves. It is claimed by some that they are as active as the leaves. While there can be no objection to their use in medicine, they should not be used in place of leaves without its being known. Three importations were dirty with excess of foreign seeds. Ash 21.1 percent to 25 percent, Moisture 7 percent to 18.2 percent. Two of good quality gave: Moisture 8.2 percent and 8.27 percent, Ash 11.04 percent and 11.68 percent, Extractive 46.61 percent and 48.25 percent. Thirty-six lots of Senna leaves were of varying quality. Four were *Cassia lanceolata*, sometimes used as a Senna substitute. One of them was damaged in drying and infected with fungus. One lot contained 23.1 percent of stems, fragments of pods and seeds. Ash 17.8 percent. Some lots invoiced as Senna were Senna siftings, giving 7.45 percent to 8.9 percent moisture and 12.6 percent to 21.51 percent of ash. Standard senna leaves should not yield over 12 percent ash. Two lots of siftings gave 34.3 percent and 37.3 percent ash, 34.2 percent and 34.7 percent water extractive. Twenty-five other lots gave from 8.1 percent to 21.98 percent ash. In addition to the excess of ash this product frequently contained excess of stems, pods and seeds. Because these products were frequently used in pharmaceutical products without cleaning, it was found necessary to detain them until properly cleaned. Experiment by the department demonstrated that a 350 lb. lot assaying 17.5 percent ash passed through a combination gravity and sifting mill, removing the sand, gravel, seeds, stems, pods, etc., gave 65 percent of the weight of a satisfactory product yielding but 9.5 percent to 11 percent of ash. In view of these conditions it has been ruled that a satisfactory product must not give over 14 percent ash or foreign material other than ash in excess of 10 percent. Immense quantities of this product are imported annually and the importance of the problem is at once apparent.—L. F. KEBLER.

*Simaruba Bark.* One lot gave Ash 5.8 percent, Moisture 8.5 percent. Another gave Ash 16 percent, Moisture 8.8 percent. One lot was not Simaruba. The only resemblance is the color. It was probably a species of *Esenbeckia*.—L. F. KEBLER.

*Smilax Rhizomes.* One consignment was correctly labeled. The only use for this product is to adulterate *Sarasaparilla*. The pharmacopœia specifies that they should not be used, as they are worthless for medicinal preparations.—L. F. KEBLER.

*Soap, Powdered.* Guaranteed of extra quality. Not as white as usual. Does not make clear solution in warm alcohol and deposits on standing.—E. L. PATCH.

*Soap Bark.* Ash 9.1 percent to 10.23 percent, moisture 9.3 percent. One sample was an unknown bark resembling Soap Bark.—L. F. KEBLER.

*Sodium Iodide.* Contained 3.7 percent sulphate.—E. L. PATCH.

*Sodium Phosphate.*

1.79% Sulph.	1.52 Sulph.
2.9% Sulph.	0.88% Sulph.
2.58% Sulph.	free Sulph.
	trace Sulph.

E. L. PATCH.

*Spcarmint.* Ash 9.7 percent to 12.42 percent.—L. F. KEBLER.

*Spirit Camphor.* Samples are still found defective, running from 40 percent to 83.3 percent of official strength.—MASS. B. OF H.

*Spirit Nitrous Ether.* Samples tested from no nitrous ether present to 74 percent of official.—MASS. B. OF H.

*Spirit of Lemon.* Samples found in which no lemon oil was present. Were solutions if citral.—MASS. B. OF H.

*Spirit Peppermint.* Samples found from 12 percent to 84.2 percent of official.—MASS. B. OF H.

*Squills.* Difficulty has arisen concerning the color of this drug. That of a brown color with a brown fracture is claimed to be of good, even superior quality, but it certainly does not conform to the official standard.—H. H. RUSBY.

*Corn Starch.* Slight alkaline reaction.

5 G.+25 cc. H<sub>2</sub>O + phenolph = 1.1 cc. H<sub>2</sub> SO<sub>4</sub> N 10.  
Slightly acid 5 G. = 1 cc. N. 10 K O H.  
Slightly acid 5 G. = 1.1 cc. N 10 K O H.

E. L. PATCH.

*Stramonium Herb.* Six lots gave ash 14.7 percent to 19 percent. Thirty-two lots gave alkaloid 0.251 percent to 0.451 percent. One lot was low, 0.21 percent. One contained from 1 percent to 5 percent chestnut leaves. Assay—Ash 23.15 percent, Alkaloid 0.289 percent.—L. F. KEBLER.

*Stramonium Leaves.* One lot contained 10 percent of adulterant. Probably leaves of a species of prunes. Forty-three lots gave alkaloid from 0.294 percent to 0.49 percent. The alkaloidal standard (0.25 percent) may be a little low. One lot gave ash 20.5 percent, moisture 6.9 percent, alkaloid 0.294 percent. One lot gave 0.187 percent to 0.258 percent alkaloid.—L. F. KEBLER.

*Strophanthus.* The use of this drug must have declined greatly if we can judge by importations. Of late a new spurious species has been offered which is extremely difficult of detection, especially when mixed with an equal amount of the genuine.—H. H. RUSBY. Ash of one lot 10.4 percent, moisture 8 percent. Seven lots were satisfactory. One was false drug, either *S. asper*, or *S. grata*.—L. F. KEBLER.

*Styrax.* One lot not pharmacopœial. Contained but 48.73 percent of alcohol soluble material. Two satisfactory lots gave: Alcohol soluble 64.72 percent and 64.8 percent, Cinnamic Acid 21.3 percent and 25.56 percent, Cinnamein 45.5 percent and 59.47 percent. One lot gave 63.03 percent alcohol soluble, but only 1.54

percent of free and 3.93 percent of combined Cinnamic acid. One lot, not styrax but wholly spurious, had the microscopical character of an impure tomato paste.—L. F. KEBLER.

*Tansy.* Ash one sample 5.2 percent. One lot consisted of the entire herb, stem, leaves, flowers, etc. One chiefly of stems. The stem is virtually inactive.—L. F. KEBLER.

*Thyme.* Two lots excessively dirty. Ash 19.7 percent and 21.9 percent. One lot inferior, dark colored, mouldy and musty. Ash 16.5 percent. Two lots were origanum, one was wild marjoram and consisted of entire plant, including roots. Twelve lots were satisfactory, ash 7.4 percent to 14.14 percent.—L. F. KEBLER.

*Tinct. Iodine.* Thirteen local samples—1.97 G. Iodine to 6.06 G. to 100 cc. None up to standard. Variation 12.5 percent to 71.5 percent. Potassium Iodide lacking in four. Thirty-seven interstate samples—from 6.09 G. to 9.26 G. Iodine from 11 percent below to 35 percent above. No K I to 6.52 percent, from 100 percent below to 30 percent above.—L. F. KEBLER.

*Tolu Balsam.* Sixteen lots genuine and good quality gave—Acid number 93.5 to 126, Saponification number 170 to 318.2, Free Cinnamic Acid 11.84 percent to 41.44 percent, Cinnamein 4.68 percent to 9.9 percent. Thirteen lots of good quality gave free acid as benzoic 4.44 percent to 12.55 percent. Saponified resin 25.3 percent to 52.12 percent. Cinnamein 6.87 percent to 15.3 percent.—L. F. KEBLER.

*Tragacanth.* The offering of India gum under the name of Tragacanth has almost wholly ceased—H. H. RUSBY. One shipment labeled "Extra Superior" consisted in part, if not wholly of Hog Gum, which is not tragacanth. It was about No. 12 instead of No. 1 and sorts instead of superior. Ten percent of one lot was official. Twenty-three lots were satisfactory. One hundred and nineteen were too inferior for use in medicine. Six were India gum.—L. F. KEBLER.

*Triticum.* There have been occasional shipments, both whole and cut, of a thicker, paler, harder, tougher nearly tasteless grass rhizome under this name.—H. H. RUSBY.

*Uva Ursi.* Two lots very poor, contained over 83 percent of sticks, dead leaves and dirt. Four contained from 14.43 percent to 26.25 percent of foreign material. Three contained from 13 percent to 19.4 percent stem. Twenty-one lots were of good quality. One gave ash 4.69 percent, moisture 6.37 percent. Uva Ursi should not contain in excess of 10 percent of stems, foreign material or worthless leaves.—L. F. KEBLER.

*Valerian.* A number of shipments of Japanese Valerian have arrived. It has been hinted that this is not from *Valeriana officinalis*, but it is so clean and sound and fine in odor that it will require good evidence to show that it ought to be rejected.—H. H. RUSBY. One lot contained an excess of dirt. Ash 27.63 percent.—L. F. KEBLER.

*Viburnum Opulus.* Farwell, in the Bulletin of Pharmacy, has fully covered the situation concerning this drug, showing that there is no genuine bark of the kind in the market, all being *acer spicatum*.—H. H. RUSBY.

*Wormseed.* Ash 4.32 percent to 9.7 percent. One lot had lost much of its oil, but contained all of its bitter principle.—L. F. KEBLER.

*Note.* The contributions credited to Dr. Kebler are taken from department reports covering the years 1908, 1909, 1910, 1911 and 1912.

EDGAR L. PATCH,  
 LYMAN F. KEBLER, M. D.,  
 H. H. RUSBY, M. D.,  
 WILBUR L. SCOVILLE,  
 Committee on Drug Market.

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### DIET IN EPILEPSY.

“Freedom from epilepsy is often a matter of right living.”—*Spratling.*

William Aldren Turner, the English authority, after exhaustive experiments, recommends the adoption of a purin-free dietary. The purin bodies, or substances constituted on a base C<sub>5</sub> N<sub>4</sub>, are widely distributed among the common foods. They exist in all forms of meat extracts, in both the white and the red meats commonly used as foods, and in large quantities in certain glands, notably the thymus and pancreas.

*Purin-free Foods.* Recommended in epilepsy: Milk, eggs, cheese, butter, sugar, white bread, tapioca, rice, cabbage, cauliflower, lettuce, macaroni, strawberries, olive oil, honey, apples, grapes, nuts, raisins, dates.

*Purin-poor Foods.* Potatoes, onions, oatmeal, French beans, turnips, carrots, parsnips, rhubarb, kale, chicory, figs, the pulses, asparagus, codfish.

*Purin-rich Foods.* To be avoided in epilepsy: Salmon, halibut, plaice, beef, pork, mutton, chicken, veal, liver and sweetbreads.

If the patient shows loss of weight under a purin-free dietary it is advisable to give fish, or even lamb or mutton, occasionally.

Aged persons, whose digestive glands are atrophied, are unable to digest food which presents great difficulties to the action of their juices. Therefore raw milk, whipped eggs, tripe, lamb, rice, sago, tapioca, barley and soft-boiled eggs are the most digestible foods for them.—*Arnold Lorand, Old Age Deferred.*