effect on myself was apparently more intense than that of the previous test, and more so than was experienced by the others, laughing spells being more frequent and inclined to be hysterical. No unpleasant symptoms were experienced by any one of the three during the evening. After several hours playing cards and talking a peculiar thing happened. Suddenly and without a word from any one we stopped the game, lay back in our chairs and dozed. It seems to me that I slept for a long time although it was in reality only about ten minutes. It probably was not really sleep as I remember hearing the watchman on his rounds and I wondered whether he would come into the room where we were. As suddenly and spontaneously as we had dozed, we aroused and, having practically recovered from the effects of the drug, prepared to go home.

In conclusion it may be stated with certainty that the physical and mental condition of the human subject at the time of administering this drug influences its effects both in degree and kind. For that reason no two persons can be expected to exhibit the same symptoms as a result of ingesting equal quantities of the same drug, and no person can be depended upon to react in exactly the same manner from the same drug on different occasions. With these facts in mind the differences in the three personal experiences above related are readily explainable and there is no reasonable ground for doubting that Cannabis Sativa grown in India and America contains the same active constituent.

The method for assaying extracts of Cannabis Sativa described in detail by Houghton and Hamilton (Am. Journ. of Pharm., Jan., 1908) makes use of dogs for exhibiting the characteristic effect of the drug. Attention is called in this article to the fact that the animals must have been specially selected for the purpose. They must not only be susceptible to the drug but their behavior under its influence must have been determined by preliminary observation. We may thus avoid errors due to their individual idiosyncrasies. There are, apparently, no such marked differences in the character of the reaction in dogs as are observed in human subjects nor are they so variable at different times if they have been carefully selected as described above.

When proper precautions are observed the activity of an extract Cannabis Sativa relative to a standard extract may be determined with reasonable accuracy. My personal experience of twelve years in observing tests of Cannabis Sativa obtained from different countries, Africa, India, Germany, Greece and various localities in North America has convinced me that they all contain the same active constituent.

SOME COMMERCIAL SAMPLES OF DRUGS.

A. W. LINTON, VALPARAISO, IND.

The purpose of thi paper is to report the results of a series of determinations which were made with the object of ascertaining, as far as possible, the purity and quality of certain drugs, especially some of the gum-resins, as furnished to the trade by the wholesalers of the middle west. The samples were obtained

from five different dealers, located in Chicago and Indianapolis. In some cases determinations were also made of samples taken from our stock of drugs used in teaching materia medica, most of these having come from an eastern importer who makes something of a specialty of supplying drugs to be used as materia medica samples.

By examination of different price-lists it was learned that considerable diversity prevails in the manner of denoting the different qualities of these drugs. In ordering the drugs, most of which were obtained through retail pharmacists, they were ordered first as "powdered," second as "whole goods," and third as "best select." Most of the houses furnished powdered and whole samples of each drug ordered, but only one firm sent more than one quality of the unground drugs.

The samples weighed for determination were all of the air-dried drugs. The determinations for percentage of alcohol solubility were made by extracting to completion in a Soxhlet extractor, the comminuted drug having been mixed with washed sand to facilitate extraction. In ash determinations the samples were burned to a white ash of constant weight without using any oxidizing material.

Asafoetida.—I will show first my results with ten samples of asafoetida, a drug very much under discussion of late because of the highly adulterated condition in which it is commonly found. As you are well aware, the U. S. P. VIII specifies that asafoetida shall yield not less than fifty percent of alcohol soluble matter, and not more than fifteen percent. of ash, the ash limit having been raised from ten to fifteen percent. after the first edition of the eighth revision appeared. The tabulated results follow:

Number of Sample.	State of Comminution.	Percentage Alcohol Soluble.	Percentage of Ash.	Remarks.
1	Whole	52.65	25.76	
2	Powdered	38.54	86.49	
3	Whole	33.61	43.54	—Contained gypsum coated with asafoetida
4	Powdered	42.07	41.03	
5	Whole	62.87	12.85	
6	Powdered	3.75	88.82	—Said to contain 50 percent. dryer
7	Whole	48.7	15.3	—Contained glycerin
8	Whole	59.76	6.54	—Labeled "Optimus"
9	Powdered	60.76	13.66	
10	Whole	44.98	23.70	

We have been led to believe by some of the published reports that no asafoetida was being offered which would comply with the pharmacopoeial requirements. It will be noted, however that three out of the ten samples examined do comply in both particulars, and strange to say, one of these is of the powdered drug, which is undoubtedly especially prone to adulteration. Sample No. 7, contained a large amount of glycerin which of course would make the results valueless for purposes of comparison. Sample No. 8 which makes an excellent showing was labeled "Optimus" indicating that one firm at least is prepared to furnish a high-grade article when the best is specified on an order. Sample No. 6 should be carefully noted. This sample was not under the label of the house from which it was purchased, but bore the label of a prominent firm of drug millers. It was labeled "Powdered Asafoetida Compound, 12% soluble gum mixed with 50% dryer. "The percentage of ash was not stated on the label. The sample evidently consisted almost entirely of clay. Sample No. 3 was

largely adulterated with lumps of gypsum which were thinly coated with asafoetida. Most of the samples of whole drug showed white lumps of mineral matter, much of which I think was gypsum, although some gave a test for carbonates.

One house stated on the labels of both samples furnished percentages of ash and of alcohol soluble matter, another stated only percentages of alcohol soluble matter. In most cases the percentages stated were only very slightly different from the results obtained by us. In this respect No. 6 was a notable exception.

I think we may learn from these results that there is asafoetida on the market both whole and powdered which conforms to U. S. P. requirements, although there is evidently much more that does not. It is apparently true that it is not absolutely essential to heavily load asafoetida with inert material in order to powder it, although it probably is necessary to drive off the volatile oil, thereby greatly impairing its value.

Ammoniac.—I present results obtained from four samples of ammoniac. All of these are of the whole drug, none of the houses furnishing the powdered article. Ammoniac is, of course, not at present official in the United States. It may be of interest to note that the German Pharmacopoeia places limit of ash at 7.5%, and the alcohol insoluble matter at 40%. The French Codex has the same limit for alcohol insoluble matter but places ash limit at 5%.

No. of Sample.	State of Comminution.	Alcohol Insoluble.	Percentage of Ash.
1	Whole	27.88	2.20
2	Whole	34.74	——
3	Whole	28.36	3.1
4	Whole	29.42	5.82

All samples showed admixtures of seed and portions of stems, but gave little evidence of mineral adulterants.

Myrrh.—Twelve samples of myrrh were examined. Our Pharmacopoeia makes no statements in regard to ash, or alcohol solubility of myrrh, but gives a qualitative test intended to indicate presence or absence of bdellium. The P. G. places ash limit at seven percent., alcohol insoluble not higher than 65%.

No. of Sample.	State of Comminution.	Percentage Alcohol Insoluble	Percentage of Ash.	Remarks.
1	Whole	62.83	6.3	—Materia Medica Stock
2	Powdered	77.52	18.8	
3	Whole	72.07	5.87	
4	Powdered	78.41	11.36	
5	Whole	75.18	7.31	
6	Powdered	75.67	14.59	
7	Whole	75.9	8.88	
8	Powdered	74.62	11.29	
9	Whole	70.90	12.66	
10	Whole	69.30	7.22	—Labeled "Optimus"
11	Powdered	72.04	11.09	
12	Whole	78.39	5.11	

Only sample No. 1 is in conformity with the requirements of the P. G., and this was a sample taken from our materia medica stock and I think had been on hand for some years.

All of the samples failed to indicate presence of bdellium on application of the nitric acid test of the U. S. P. Also all samples failed to give indications of East India or Bisabul myrrh when the bromine test of some of the pharmacopoeias was applied.

Gamboge.—Nine samples of gamboge were examined, five in pipe and four in powder. Our Pharmacopoeia specifies not over three percent. of ash, not more than 25% of alcohol insoluble matter. Both German and French Pharmacopoeias place the ash limit at 1%.

No. of Sample.	State of Comminution.	Percentage Alcohol Insoluble.	Percentage of Ash.
1	Pipe	21.66	2.5
2	Powdered	12.23	2.48
3	Powdered	24.93	2.44
4	Pipe	27.84	2.37
5	Powdered	28.81	2.52
6	Pipe	21.79	2.49
7	Powdered	47.85	2.91
8	Pipe	24.64	1.80
9	Powdered	16.46	2.39

Six of the nine samples complied with both requirements and two of the others exceeded the limit for alcohol insoluble material only slightly. Sample No. 7 was found to be adulterated with starch or some starchy material.

The remainder of the drugs reported upon are not gum-resins, but were included in the investigation.

Guaiac.—The U. S. P. VIII requires that guaiac shall yield not more than 4% of ash, and not more than 15% of alcohol insoluble matter. The acid number, it says, shall be between 70 and 80. The Codex says that guaiac shall be soluble in 90% alcohol.

No. of Sample.	State of Comminution.	Percentage Alcohol Insoluble.	Percentage of Ash.	Remarks.
1	Powdered	20.08	4.54	
2	Whole	28.79	3.36	
3	Powdered	24.14	4.75	
4	Whole	4.84	0.77	
5	Powdered	20.61	5.33	
6	Whole	31.90	4.17	
7	Powdered	1.17	0.264	
8	Whole	0.624	0.215	—Soft and Plastic.
9	Whole	4.67	1.36	

Four samples out of the nine examined were in conformity with requirements as far as ash and alcohol solubility are concerned. I will call your attention to the very low percentage of ash and also of alcohol insoluble matter in sample No. 8. This sample was in soft plastic cakes very different indeed from the hard brittle resin usually met with. Sample No. 7, a powdered article from the same firm which furnished No. 8 also gives good results. In regard to the acid number for guaiac, I will say that I did not find it possible to obtain accurate results on account of the difficulty in securing a sharp end point. I did not regard my results in this determination as worth reporting, and I note that several other investigators make similar statements in regard to the acid number.

Benzoin.—The U. S. P. VIII places the ash limit for benzoin at 2%, and states that it should be almost wholly soluble in warm alcohol. The Codex has the same requirements. The P. G. has the same ash limit, but is more specific in regard to alcohol solubility, stating that the alcohol insoluble matter should not exceed 5%. The Codex states plainly that only Siam benzoin is official, while the P. G. provides a test for cinnamic acid excluding samples which contain it.

This means that all except Siam benzoin is excluded, since most authorities agree that Siam benzoin does not yield cinnamic acid while other varieties do.

The results obtained with twelve samples are tabulated.

No. of Sample.	State of Comminution.	Percentage Alcohol Insoluble.	Percentage of Ash.	Remarks.
1	Whole	0.878	0.203	—Siam benzoin from stock.
2	Whole	10.66	0.906	
3	Powdered	.....	....	This sample was ginger.
4	Whole	21.247	1.16	
5	Powdered	19.278	1.226	
6	Whole	31.689	1.33	
7	Powdered	10.689	1.60	
8	Whole	28.414	1.204	
9	Powdered	32.869	1.98	
10	Whole	29.57	1.17	—Contained tears of sandarac.
11	Whole	26.72	1.14	—Labeled "Optimus."
12	Whole	28.78	1.29	

It will be observed that while all samples were within the limit for ash, only one might be said to be "almost wholly soluble in alcohol," as the U. S. P. states the requirement. Sample No. 1, which yielded less than 1% of alcohol insoluble material, was a sample of Siam benzoin from our materia medica samples. It was a fine sample, of distinctly "almondy" type. Sample No. 3 though purchased under the label "Powdered Benzoin," was nothing more nor less than powdered ginger. Siam benzoin is evidently not commonly found on the market in the middle west, since it was ordered from all the houses from which drugs were obtained but not one supplied it. I find that it is quoted in few drug price lists published west of New York.

I think the Pharmacopoeia should make a more exact statement in regard to alcohol solubility. It would appear that unless we wish to exclude all varieties but Siam, it will be necessary to make the allowance for alcohol insoluble matter rather liberal. All samples of unground Sumatra benzoin examined showed large content of bark and woody material. It may be that this admixture is unavoidable under conditions in which it is collected. The information on manner of collection of Sumatra benzoin seems to be very limited.

Lycopodium.—Although there is no good reason why a report on lycopodium should appear in a paper which is concerned principally with gum-resins and resins, I will give results on several samples examined. Sample No. 1 was from stock, the others came each from a different wholesale dealer. You will recall that the U. S. P. VIII places the ash limit at 5%. The P. G. is a little more stringent, allowing only 3%.

No. of Sample.	Percentage of Ash.	No. of Sample.	Percentage of Ash.
1	1.41	4	1.89
2	1.57	5	1.81
3	1.79	6	1.49

All samples yielded a percentage of ash not only below five but below two percent.

None of the samples when examined under the microscope showed any evidence of adulteration, except in one case in which a mere trace of foreign substance was detected. All gave negative results when the iodine test for starch was applied.

I note that some reports refer to frequent adulterations but the above results would indicate that the market offers a perfectly pure article. It would seem that the ash limit might well be placed somewhat lower than 5%.

In conclusion I will state that I think that ash standards might well be established for a number of other drugs than those for which they are at present stated. I would suggest however that if ash determinations are to become of increasing importance, that a method of procedure be outlined in the introductory notices of the next revision.—*Valparaiso University, Department of Pharmacy.*

REPEATING PRESCRIPTIONS.

British physicians and pharmacists are trying to get together in closer relations to the mutual advantage of both callings. Dispensing physicians and counter prescribing pharmacists have caused as much trouble in that country as they have in the United States. One pharmacist stated when discussing the matter that he had just filled a prescription which, as near as he could judge, had been filled 135 times, the prescriber receiving a single fee for writing it. It seems that the English law says that the prescription belongs to the patient who pays the fee, but the doctor who writes it has the power to designate the number of times it may be filled. The Pharmaceutical Journal suggests printing on the prescription something like the following:

This prescription is given upon the understanding that it is for present indications only, and that it is not to be repeated more times than I order.

Of course, the physician should state the number of times he will permit the prescription to be filled, then sign his name and date the order.

While our British cousins are coming to an understanding it will be well for the pharmacists of this country to see if they cannot make better progress in the near future than has been accomplished in the past.—*Meyer Bros. Druggist.*

LEADERS IN THE MAKING.

If you want to be something more than the average worker, you must do something more than average work. If you expect to become an important figure in the world of commerce, a captain of industry, instead of a common soldier in the ranks of labor, you must put your shoulder to the wheel and push, and push hard.

It is astonishing how many young men are trying to get a living without hard work. It does not seem possible that so many people could live off one another without really producing anything themselves. Everywhere we see young men looking for easy places, short hours, and the least possible work for the greatest possible salary.

Even if it were possible to get a living with a very little effort, you could not afford it. You could not afford to coin your brain into dollars, to make dollar-chasing the ambition of your life. There ought to be something larger in you than that. There is something in you that will not be satisfied that will protest against selling yourself so cheaply. You can not respect yourself unless you are doing your best, making your greatest effort to bring out the best thing in you.—*Orison Swett Marden.*