periments which have been made by Pittenger and Vanderkleed to preserve fluid-extract of ergot by sealing it in glass ampules, the Journal A. M. A. (Sept. 21, 1912, p. 959), says:

"The investigation of Hale on Digitalis, of Edmunds and Hale on ergot, and Dohme on calabar bean, coca and aconite, have revealed the fact that many drug preparations deteriorate, and that drugs are often several years old when they reach the patient. These facts have been emphasized, also, through a report of the Council on Pharmacy and Chemistry dealing with the testing of epinephrin solutions in which the Council recommends that 'manufacturers stamp the age of manufacture on the container, to guard against samples which are obviously overaged.' Naturally some manufacturers have asserted that the reported deterioration is accidental, or have tried to put the blame on the pharmacist. Some have shifted their previous claims as to strength in such a way as to avoid responsibility. Some firms, however, instead of attempting to dodge responsibility, are doing what ought to be done, and indicate the date of manufacture on the label of those preparations which are prone to deterioration."

Although many medical preparations no doubt are relatively permanent, it is not unfair, in view of the lack of definite information on the subject, to ask that the date of manufacture be placed on all labels of medicines. As manufacturers quite generally put on each package of a given preparation a number which identifies the "lot" from which the particular product is taken, such a system of dating would impose no extra expense to the manufacturer. It would merely supply information to which the physician, the pharmacist and the public all are entitled.—*Texas State Jour. of Medicine.* (Oct. 1912, p. 159).

DETERIORATION OF SPIRIT OF NITROUS ETHER.

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Spirit of Nitrous Ether, commonly called Spirit of Nitre, is defined by the Eighth Revision of the United States Pharmacopœia as "An alcoholic solution of Ethyl Nitrite yielding, when freshly prepared and tested (by the method given in the U. S. P.), not less than 4% of the Ethyl Nitrite."

That this 4% of ethyl nitrite is easily lost under improper conditions is a matter of common knowledge among those who have anything to do with this preparation. Reports of various state departments charged with the enforcement of the drug laws show that this preparation has caused more or less trouble. It appears that the fault lies mainly in the manner in which it is stored. In the state of Michigan the records of the laboratory show that during the year of 1912 over 72% of the samples examined were found to fall below the required standard of the U. S. P.. When some of the manufacturers of these preparations were asked to explain why their spirit of Nitrous Ether did not conform to the U. S. P. their reply was that it is impossible to keep such a volatile preparation for any length of time and have it of standard strength. However, investigation into

the manner in which such pharmacists stored their preparations generally disclosed the fact that they were not keeping it in strict accordance with the U. S. P. directions, only making a half-hearted attempt, if making any at all, to store it as their Pharmacopœia told them to.

In order that we might enlighten these people, this laboratory started an experiment some time ago, to determine the keeping qualities of spirit of nitrous ether. The plan of the experiment was to duplicate, as nearly as possible, conditions as may be found in any medium class drug store, by selecting bottles of various sizes and colors, by storing in a semi-dark place and at a temperature that could not be called cool. Thus it will be seen that the directions of the U. S. P. were not followed to the letter but were only attempted and carried out in an incomplete manner.

The experiment was conducted as follows: On March 5, 1911, a quantity of spirit of nitrous ether was made up and placed in seven bottles. The bottles used were ordinary half-pound and one-pound bottles, two of which were of amber glass, one green glass, and four flint glass bottles, such as may be found in any drug store. Each bottle when filled was securely fitted with an ordinary cork stopper. The bottle was then thoroughly shaken and an assay made of its contents.

The bottles were again securely stoppered and placed in a semi-dark place in a room adjoining the working laboratory, the temperature of which is about the same as that in the laboratory, viz., 65° to 75° F. At the end of three months the bottles were removed and the contents assayed. This procedure was continued for a period of fifteen months, assaying the contents of the bottles at intervals of three months each, except the time between the fourth and fifth assays, when a period of four months elapsed, and the results tabulated in the following table:

TABLE I.

Sample No.	Size of Bottle	Kind of Bottle	1st Assay Mar. 5, 1911, Time of Filling	2nd Assay June 5, 1911	3rd Assay Sept. 5, 1911	4th Assay Nov. 5, 1911	5th Assay Mar. 5, 1912	6th Assay June 5, 1912
1	12 oz.	Amber	3.98	3.95	3.83	3.73	3.70	3.56
2	12 oz.	Amber	3.99	3.86	3.73	3.61	3.53	3.45
3	16 oz.	Green	3.95	3.88	3.81	3.71	3.66	3.60
4	8 oz.	Flint	3.97	3.68	3.52	2.14	2.14	1.88
5	8 oz.	Flint	3.94	3.77	3.42	3.41	1.25	....
6	16 oz.	Flint	3.95	3.72	3.42	3.42	3.20	2.94
7	8 oz.	Flint	3.92	3.39	3.39	3.10	3.10	2.89

TABLE II.

Loss at the end of.....	2 mo. 7 Samples	6 mo. 7 Samples	9 mo. 7 Samples	12 mo. 7 Samples	15 mo. 6 Samples
Maximum	0.53	0.53	1.88	2.69	2.09
Minimum	0.03	0.14	0.25	0.28	0.35
Average	0.207	0.37	0.65	1.01	0.90

TABLE III.

Loss of Samples Stored in Colored Bottles at the end of.....	3 mo.	6 mo.	9 mo.	12 mo.	15 mo.
Maximum	0.13	0.26	0.38	0.46	0.54
Minimum	0.03	0.14	0.25	0.28	0.35
Average	0.07	0.18	0.29	0.34	0.44

A study of the table will show that for the first six months the samples retained their strength very well, the maximum loss under these conditions being only 0.53% with an average for the whole of only 0.37%. The greatest loss during the entire time seems to be in the samples stored in the flint glass bottles, although with the exception of Sample No. 4, the remainder kept fairly well for the first nine months. During the latter part of the experiment, however, the samples in the flint glass bottles decreased considerably, while those in the amber and green-colored bottles decreased in strength only a small amount in the whole fifteen months and the decrease was quite regular, the maximum being but 0.54% with an average of 0.44%. It would therefore appear that spirit of nitrous ether, when manufactured properly so that it will contain 4% Ethyl Nitrite when freshly prepared and stored in small dark-colored bottles in a cool place will remain standard strength for a long period of time. The pharmacist should make up this preparation in such quantity that the whole can be disposed of in a period of six months. He then should have no fear that he is not dispensing a U. S. P. article all the time.

I am indebted to Mr. A. R. Todd of this Laboratory for assistance in this experiment.

LABORATORIES OF THE MICHIGAN DAIRY AND FOOD DEPT., 1912.

COMPOUND SYRUP OF HYPOPHOSPHITES.

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Our judgments are frequently governed by theory regardless of what experiment will teach, and we are in consequence frequently led into error, or are apt to be guided more by it, than in testing the matter under consideration by actual experiment.

I am led to the above reflection by a conversation which I had the pleasure of having with a member of the association, who is also an officer in the newly created section on "Pharmacopoeias and Formularies," during the meeting of the American Pharmaceutical Association at Denver, August 19 to 24, 1912.

The subject of our conversation was the Compound Syrup of Hypophosphites, and I had asked the question, Why it was that the sucrose content of that syrup was not up to the point of complete saturation?

The reply which I received was to the effect that if the sucrose content was increased, there would be a tendency to the "salting out" of the chemical salts entering into the composition of that syrup, and that theoretically, it was not expedient to go beyond what had been adopted by the Committee of Revision of the United States Pharmacopoeia VIII.

I am nevertheless constrained to call attention to the fact that in physico-chemical processes, it is possible to make a saturated solution of a salt, and still be able to add other concentrated solutions without danger of the precipitation of the saline content of either solution.

This is in complete harmony with my experience in the manufacture of the