

ance placed on its efficacy calls for a clear understanding of what standard of excellence should be required of it. For all the purposes of this paper it may be said that is a solution of ethyl nitrite or nitrous ether in alcohol, while it is also true that it contains variable amounts of other substances, some possibly of medicinal value, but mainly impurities, decomposition products or adulterants. It is now generally recognized by the pharmacopœias of the world that spirits of nitrous ether depends for its medicinal qualities on the nitrous ether which it contains, and they therefore set as a standard the ratio of this substance to its total volume. In referring to the element of cheapness we come to the item which causes sweet spirits of nitre to be dearer than linseed oil, turpentine or water; alcohol being almost the whole of this compound, its price is necessarily governed by that of spirit, and here is where the abuse comes; attempts are made to replace some of the alcohol with a less expensive solvent, and this in the face of the orders given in all pharmacopœias to use alcohol only. The question is to the point,—Can we water our spirits of nitre and be honest to our patients, leaving out being honest to principle, science or our profession?

The writer had occasion to assay a sample of sweet spirits of nitre, sold admittedly as a second quality; in the discussion which ensued between dealers, wholesalers and commercial travellers the assertion was made repeatedly that "the dealers must have it cheap, and they don't care what it contains," and "well, the nitrous ether is in, and leaving out some alcohol only makes it cheaper." The writer contended that were the nitrous ether there to the extent shown in the assay, in the above sample of No. 2, still both arguments were wrong, and a pharmacopœial spirit was cheapest in the end. Following is the assay of the sample of No. 2 compared with B. P. requirements:

Sp. Grav.

Sample No. 2, .9142.

B. P. spirit, .838 to .842.

Vol. of Gas Yield.

Half volume.

7 volumes to 5 volumes.

The above sp. grav. indicates a mixture of spirits of nitre with water, and the absence of nitric oxide gas points to a lack of stability, to which we will refer again. Speaking for the moment of comparative value in dollars and cents, it will

be seen that a B. P. article would be worth ten times as much as this sample of No. 2, therefore if the dilution with water (equal parts) indicated above brought the price down a corresponding proportion, even then the buyer paid five times too much for what medicinal effect he obtained. Of course the argument recurs at this moment, "They don't care so long as it is cheap," but the writer has more confidence in his professional brethren than to think they are so lacking in common sense and ability.

To turn to the question as to the need of using alcohol to preserve nitrous ether, the following quotation from "Allen's Commercial Organic Analysis, 1898," Vol. I., will be of value: "The tendency of nitrous ether and kindred preparations to undergo gradual deterioration, with destruction of the nitrous ether, is a point of great practical importance. The exact conditions which facilitate or retard the change are not thoroughly understood, but it is established beyond doubt that the presence of excess of water greatly favors the destruction of the nitrous ether. Hence, adulteration of sweet spirits of nitre with water, a practice which is very common, not only dilutes the preparation, but greatly enhances the tendency of the nitrous ether to undergo decomposition. The author proved by direct experiment that a sample of spirit of nitrous ether kept perfectly well for very many months when undiluted, but the same sample, when mixed with one-third of its measure of water, contained no nitrous ether what ever after an interval of four months. In these experiments the samples were kept in well-closed bottles, but of course imperfect closing of the bottle, or exposure to light or to excessive temperature will be certain to cause loss of so volatile a substance as is the nitrite of ethyl. On the other hand, a solution of pure nitrous ether in absolute alcohol was found by the author to contain a considerable proportion of ethyl nitrite, and mere traces of free acid, after being kept for fully seven years." Mr. Allen adds in footnotes opinions by Profs. Matthew Hay, Murrell, Leech and Attfield, all to the effect that they consider ethyl nitrite to be the medicinal principle. A note by Mr. Allen states that he recently examined a sample having a density of .940, which was very naturally devoid of nitrous ether. Mr. Allen goes on to say "the addition of water to sweet spirits of nitre is a highly reprehensible practice,

for it not only reduces the immediate strength and medicinal value of the preparation, but also renders it far more liable to change, owing to the *tendency of ethyl nitrite to undergo decomposition in presence of water.*" From Bulletin No. 23, Laboratory of the Inland Revenue Department, is quoted Mr. Frank T. Harrison's remarks: "Two samples were adulterated with water. This is a very objectionable addition. Not only does it dilute the spirit, but it renders it very liable to deteriorate, and in a short time it will become quite worthless. A sample of full strength which I diluted with water until it had a specific gravity of about .900 was entirely devoid of ethyl nitrite in six months, while samples which I prepared according to the B.P. process and kept in glass-stoppered bottles, entirely filled, were of full strength after keeping one year."

In confirmation of the stability and keeping qualities of properly-made B.P. spirit of nitre, subjoined is the analysis of a sample of spirit of nitre, B.P., made by the writer in 1890, being ten years old at the time of this analysis:

Specific gravity.....	.841
Gas volume.....	2 volumes

The subject here presented is respectfully submitted to the consideration of the reader, who will draw his own conclusions.

J. M. WILLIAMS.

The Advertiser's Opportunity.

A good advertisement brings business. A poor advertisement seldom does. Advertising writing is now an important factor in all branches of trade, so much so that in most instances it is necessary to employ a specialist who has made a study of the work and gives his whole time, energy and talent towards producing the best ads. and the most satisfactory results for the advertiser. Mr. J. P. McConnell who is now permanently located in Toronto, is perhaps one of the most successful ad. writers that we have in Canada. The excellent work that he has done for "The Slater Shoe," "The Albinite Co.," etc., marks Mr. McConnell an expert in the advertising line. We have secured Mr. McConnell's services in editing our "Department of Advertising" and feel confident that our readers will read with pleasure and profit what he has to say every month. He will cheerfully answer any enquiries and if desired will criticise your advertising.