

ORIGINAL AND SELECTED PAPERS.

NOTES ON A FEW OF THE MINERALS OCCURRING NEAR HAMILTON, ONT.

BY J. W. SPENCER.

MINERAL WATER.

About nine months ago, Mr. Williams, M. P. for Hamilton, was boring for mineral water on the premises of the Royal Hotel. At a depth of 1,001 feet, a water of the specific gravity of 1.0884 was obtained, and gave, by analysis, the following composition :

Sodium chloride	6.3711
Magnesium chloride.....	1.2723
Potassium "	A trace.
Calcium "	5.2723
sulphate.....	.1167
Carbonic acid.....	Trace.
Ferrous carbonate.....	"
Silica.....	"
Iodine and bromine.....	"
Water.....	86.9674

Although the traces of iodine and bromine are large, it takes a large amount of the water to yield a small amount of these constituents ; but it is chiefly to the presence of these bodies that the medicinal values of the mineral water are owing. As yet this artesian well is not turned to account.

GALENA.

On the mountain, south of Beansville, galena occurs in several outcrops, but as yet it has not been obtained in sufficient quantities for mining purposes. It runs through seams of limestone rocks, and in many places is associated intimately with crystals of dolomite. The galena is nearly pure, containing 86.5 per cent of lead, and 13.5 of sulphur. In some places the ore is crusted with lead carbonate, the sulphur of the galena having probably exchanged bases with some of the carbonic acid of the limestone, or dolomite.

The analysis of the associated dolomite is :

Magnesium Carbonate.....	33.77
Calcium carbonate.....	40.00
Ferric Oxide.....	5.00
Silica.....	11.67
Water.....	6.66

MAGNESIUM SULPHATE.

In a ravine, near Dundas, beneath a cliff of dolomite, lies a bed of the following composition :

Magnesium sulphate, crystallized.....	61.450
Calcium carbonate.....	19.532
" silicate.....	2.741
Ferrous carbonate.....	12.850
Silica.....	3.427

This is formed by the action of air and water on neighboring iron pyrites, which yields a soluble ferrous sulphate, and again a solution of this acts upon the dolomite (a carbonate of calcium and magnesium) exchanging its sulphuric acid for a part of the carbonic acid of the rock, and so forms a soluble magnesium sulphate, and leaves the insoluble calcium carbonate and ferrous carbonate.

PHARMACEUTIC NOTES.*

BY C. LEWIS DIEHL.

Blue Pill, is one of the simple preparations of our Pharmacopoeia that is seldom prepared by the apothecary ; in fact its preparation is the exception and its purchase appears to be the rule. There are numerous reasons why it is not generally prepared by dispensers, first and foremost among which may be mentioned the labor attending the extinguishment of mercury. Quite a number of processes for facilitating this have been from time to time recommended, but none seemed to me so simple as one recommended some time ago by a writer in one of our pharmaceutical journals, which consists in agitating the mercury with a small proportion of tincture of tolu, and then incorporating it with the proper ingredients. Another reason appears to be that blue-mass, when made strictly according to the Pharmacopoeia, soon becomes hard and unmanageable. Manufacturers, taking advantage of this, aim to produce a blue-mass which, corresponding in mercurial strength to the official article, will retain its plastic condition, and thus they create a demand for their particular manufacture.

While engaged in the manufacture of blue-mass on a considerable scale, I soon found it necessary to change the ingredients in order to obtain a more plastic mass, and succeeded very well, but with one objection, namely—that the mass was likely to become somewhat tough, and consequently more or less difficult to roll out. In other respects the mass left nothing to be desired. By experiments lately made, I believe to have overcome this difficulty, but I cannot say as yet that my experiments with the tincture of tolu warrant the assertion that it affords a rapid and convenient medium for extinguishing mercury, without the application of more manual labor than is likely to be bestowed upon the subject.

When one ounce of mercury is briskly agitated with a fluid drachm of tincture of tolu, contained in a two ounce vial, it soon becomes divided into globules, and in perhaps one or two minutes these globules will be scarcely visible as such to the naked eye. Occasional brisk agitation for 20 or 30 minutes however, is necessary to so far extinguish the mercury as to render globules invisible through a lens of moderate power. After the mercury is so far extinguished it would appear an easy matter to mix it with syrup, honey or any other desirable fluid that, in the manufacture of blue-mass on a large scale, is employed as an extinguishing

medium; but this I have found not to be the case, for when the mixture is stirred into the remaining ingredients for blue-mass, globules of mercury abundantly form, and delay the completion of the process considerably. This is probably owing to the action of the syrup or honey, etc., upon the tolu coatings of the minutely divided mercury, by which a portion of mercurial surface becomes exposed, and unites with another in a similar condition.

However, something is gained by the use of tincture of tolu, for I have prepared blue-mass in less than an hour—twenty to thirty minutes of which being consumed in briskly rubbing the mixture to entirely remove globular mercury.

If it were practicable to keep blue-mass in the form of 3-grain pills, as provided by the formula of our Pharmacopoeia, there would be no necessity for a change in its ingredients. This not being the case, the formula should be so altered as to insure a mass that will keep its soft consistence for a reasonable period. It may be contended that the ingredients entering its composition are necessary to its remedial properties, for some authorities maintain that blue-mass owes its virtues to the metal in an oxidized condition, and the question may then arise, "*Do the ingredients of the official blue-mass specifically tend to promote this oxidation?*" It is reasonable to suppose that such is not the case, for otherwise much of the blue-mass of commerce, in every other respect properly prepared, would be found ineffective. I venture to doubt that either powdered liquorice root or the components of confection of rose are essential to the effectiveness of blue-mass, and propose for its preparation the following formula :

Take of Mercury,
Finely powdered Marsh-mallow
root, each one Troy ounce;
Syrup,
Glycerine, each 240 grains ;
Tincture of Tolu, 30 minims.

Introduce the mercury into a two-ounce vial containing the tincture of tolu, and agitate briskly, at short intervals, for thirty minutes, or until the mercury shall have become entirely extinguished ; then weigh the syrup and glycerine into a vial, agitate briskly, and immediately incorporate with the powdered marsh-mallow, rubbing the mass until any globules of mercury formed shall have entirely disappeared.

Blue-mass is formed in this manner with less labor, in a shorter time, and of a better consistence, than by any other process known to me. While the mass is decidedly firm, it will remain plastic for a long time, and can be rolled into pills that will keep their shape perfectly. After the addition of the liquid mixture to the powdered marsh-mallow, the mass retains a very soft consistence for a considerable time, requiring less laborious mixing than when confection of rose is used.

Regarding the use of tincture of tolu in the formation of blue-mass, no decided opinion is offered, as I am still engaged with experiments, and hope in the next issue of *The Pharmacist* to present some more satisfactory results.

Quinia Pills are dispensed by me prefer-

* From the Pharmacist.