

The mass by solution in water is converted into an hydriodate of arsenic and mercury. The quantities of the two metals are so adjusted, that, when converted into protoxides by decomposition of a portion of the water in which they are dissolved, there will be eight grains of protoxide of arsenic, and sixteen of protoxide of mercury. The quantity of water is such that each drachm measure of the solution will contain exactly one-eighth of a grain of protoxide of arsenic, and one-fourth of a grain of protoxide of mercury. I conceive that the quantity of mercury ought to be double that of the arsenic, in order to insure a slow and moderate, yet adequate mercurial action, along with the proper effect of the arsenic.

Of this *liquor hydriodatis arsenici et hydrargyri*, each drachm measure consists of

Water, one drachm.

Protoxide of arsenic, one-eighth of a grain.

Protoxide of mercury, one-fourth of a grain.

Iodine (converted into hydriodic acid) four-fifths of a grain.

The color of the solution is yellow, with a pale tinge of green; its taste is lightly styptic. It cannot be properly conjoined with tincture of opium or with sulphate, muriate, or acetate of morphia; for all these produce immediate and copious precipitates in it. Hence if opiates are to be used during the exhibition of this arsenico-mercurial liquor, they must be taken at different periods of the day. Tincture of ginger produces no bad effect. The following formula is proper:

℞ *Liquoris Hydriodatis Arsenici et Hydrargyri* drachmas duas.

Aquae Destillatae uncias tres cum semisse.

Syrupi Zingiberis semunciam, Misce.

Divide in haustus quatuor. Sumatur unus mane nocteque.

Thus one-sixteenth of a grain of protoxide of arsenic, and one-fourth of a grain of protoxide of mercury, would be taken in each dose, along with two-fifths of a grain of iodine, which, being in the state of combined hydriodic acid, will be much diminished in energy of medical effect. This is no doubt the proper dose to begin the exhibition of arsenic with; but it will be very soon necessary to increase it.

The division into draughts is here necessary: first, to insure accuracy of the dose, so essential in the case of this active medicine: and next, to prevent injury to the ingredients by the use of a metallic spoon as a measure—the general way in which, unfortunately, the dose of a medicine is determined.”

LOSS ON IGNITION OF TALC.*

BY JOSEPH L. MAYER.

A few months ago I was retained in a case involving loss on ignition of a sample of talc, upon which two competent chemical laboratories had reported results that differed widely.

The United States Pharmacopœia under Purified Talc says “Purified Talc when subjected to ignition at red heat loses not more than 5% of its weight.”

The several cars of talc which were the subject of this controversy were not intended for pharmaceutical or toilet purposes, but nevertheless it appeared to me that “red heat” would be the proper temperature to observe in making the analyses.

Walker and Wilson—U. S. Department of Agriculture, *Bureau of Chemistry Circular*, No. 101, page 2, “The Ignition of Precipitates without the Use of the Blast Lamp”—report the following results of a series of tests they made of temperature measurements with various types of burners, by inserting a thermo element through a hole in a platinum crucible cover: “To the surprise of the experimenters there was practically no difference in temperature when different types

* New York State Pharmaceutical Association, 1925.

of burners which are in common use were employed—the old style Bunsen giving about the same temperature as modern types when of the same size. Similar experiments were made with Meker burners and it was found that both large and medium burners gave the same temperatures in the crucible; that is, about 1.025°C . or about 75° higher than that obtained by an ordinary burner." Being in doubt as to whether the results on the sample in question would be identical whether a Meker or Bunsen burner were employed I made the following series of analyses, the same sample of talc being employed in all tests:

(a) One gram of talc was placed in a porcelain crucible and heated over a medium sized Meker burner to constant weight. The material lost 2.68% of its weight.

(b) One gram of talc heated in a porcelain crucible over an ordinary Bunsen burner at red heat until the weight was constant, lost 0.93% of its weight.

(c) One gram of talc heated in a deep platinum dish over the above noted medium sized Meker burner until the weight was constant, lost 2.80% of its weight.

(d) One gram of talc heated in the deep platinum dish over the ordinary Bunsen burner at red heat until the weight was constant, lost 0.87% of its weight.

The proper method of employing a Meker burner is to place the crucible or dish being heated just above the grid (about one or two millimeters) and in the above tests with the Meker burner this procedure was followed. Another test was made as follows:

(e) One gram of talc was placed in a deep platinum dish and heated until constant weight was obtained, the Meker burner being employed in such a manner that the tip of the flame just touched the bottom of the dish, which was 15 centimeters above the grid. The sample lost 1.55% of its weight.

Results by all methods were as follows:

(A)	Porcelain Crucible	Meker burner	Loss 2.68%
(B)	Porcelain Crucible	Bunsen burner	Loss 0.93%
(C)	Platinum Dish	Meker burner	Loss 2.80%
(D)	Platinum Dish	Bunsen burner	Loss 0.87%
(E)	Platinum Dish	Meker burner improperly used	1.55%

SUMMARY.

1. The loss on ignition of talc is very much lower when a Bunsen burner is employed in the analysis than a Meker.
2. The results are practically the same whether the analysis is made in platinum or porcelain.
3. To obtain concordant results in the employment of a Meker burner the crucible or dish being heated should be placed just above the grid (about one or two millimeters).
4. In cases where talc may be the subject of a controversy it should specifically be stated whether a Bunsen or Meker burner is to be employed in determining loss on ignition.