

Concentration of ammonium chloride.	Solubility of calcium hydroxide.	
	Found.	Calculated.
0	20.22
21.76	29.08	28.09
43.52	39.23	38.6
87.03	59.69	58.3

The agreement is satisfactory. The theory developed regarding the effect of di-ionic electrolytes on the solubility of tri-ionic electrolytes with different ions is therefore confirmed.

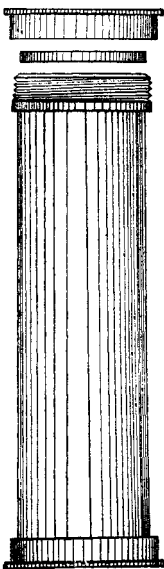
MASSACHUSETTS INSTITUTE OF TECHNOLOGY.
BOSTON, March, 1899.

MEASUREMENTS OF "TURBIDITY" IN WATER.

BY W. P. MASON.

Received January 18, 1899.

THE method of expressing turbidity in words is so unsatisfactory that the writer has for some time past employed the following means of securing numerical results: The change



has proved of decided advantage, particularly for an examination of filtrates and storage waters. Use is made of a brass tube two and one-half inches in diameter and two feet long, closed at the ends by disks of quarter-inch plate glass held in place by screw-caps.¹ Such tubes are easily cleaned and give excellent satisfaction.

For the purpose of measuring the amount of turbidity, a standard is prepared, consisting of one gram of exceedingly fine kaolin (obtained by elutriation) suspended in one liter of distilled water. Each cubic centimeter of this preparation will contain one milligram of suspended clay.

Having nearly filled the duplicate observation-tube with distilled water, enough of the "clay standard" is added to make the turbidity equal to that of the water under examination in the other tube. Knowing the volume of water operated upon and the amount of "clay standard" used, the turbidity expressed in parts per million can readily be calculated. It should be noted that although the tube containing the "clay standard" is, of necessity, not completely full, yet by inclining

¹ Such tubes may be obtained from Richards & Co., 30 East 18th St., New York City.

its barrel towards a horizontal position the required observation depth of two feet is easily obtained.

Any quickly subsiding material present should be classed as sediment rather than turbidity. To determine the same it would be best to decant the water above such deposit and then catch it upon a weighed filter or in a Gooch crucible.

THE TOXIC ACTION OF SODIUM FLUORIDE.¹

By HERBERT B. BALDWIN.

Received April 10, 1899.

THE title of this article was suggested by a recent case of accidental poisoning by means of sodium fluoride. The substance is now largely sold as an insecticide put up in tin cans resembling baking-powder boxes. In this way and on account of its now somewhat extended use in the arts there is considerable liability of accidental poisoning from it. The possibility of future accidents, and the fact that in searching for literature on the salt as a toxic agent no record was found of any severe or fatal poisoning, induced the writer to present a brief history of the case together with such other information as could be collected.

Some pan-cakes served for breakfast were partaken of by six or seven persons. Some ate very sparingly, one woman only a portion of one, while one man ate three or four of them. All who had eaten vomited within five to fifteen minutes afterward. In some cases purging occurred, in others it did not. In one case, at least, this purging and occasional vomiting continued for a day or more, with pains in the limbs complained of.

In the case of the man who ate three or four cakes, vomiting commenced early, but he soon recovered sufficiently to attend to his duties as bartender until early in the afternoon when he was obliged to retire to his room. He died early in the evening of the same day, practically without medical attendance. Further symptoms in the case could not be ascertained.

At the time this occurred it was supposed to be a case of criminal poisoning and some milk used in mixing the cakes was suspected. An analysis, by the writer, of this milk and a portion of the viscera of the deceased failed to detect any of the usual mineral poisons. But a small amount (0.007 gram) of what

¹ Read at the meeting of the New York Section, April 7, 1899.