with so many conditions. Water from deep artesian wells is sometimes nearly free from dissolved oxygen, and is yet of the purest possible description.

6. *The Dissolved Solids* are estimated by evaporating a known volume of the water to dryness in a platinum dish and weighing the residue. The drying of the residue is effected at 100° C. (=212° F.), a temperature high enough to drive off all except chemically combined water. This residue is then ignited in the dish, and the resulting ash is weighed; the loss of weight is usually stated in a separate column in reporting the analysis, although a much less value is attached to this number than was the case some years ago. The loss was then supposed to be essentially due to organic matter which had been burnt away, and was hence thought to be a measure of the impurity of the water analyzed. Now, we know that far more importance must be attached to the kind of organic matter present than to the total amount of it, and since the loss on ignition gives no information on this point its indications are of correspondingly small moment. Besides this, the loss is partly due to escape of carbonic acid gas from carbonates, and to loss of water which has been combined in such a way that it was not driven off by heating to 100° C.

I may here mention that it is possible to burn away the organic matter from the residue in such a way as to collect the products of combustion, and from them to calculate the amounts of carbon and nitrogen which the residue contained. Since nitrogen is, as a rule, present to a larger amount in organic matter having an animal origin than in that having a vegetable origin, it is possible from the relative amounts of nitrogen and carbon to get an idea of the proportion of animal impurities existing in the sample analyzed. This process is a very tedious and troublesome one, and requires the utmost care in its execution that results of any value may be obtained. It was employed by Dr. Frankland in the analysis of the waters of Great Britain (1868—1876), and he concludes that surface water or river water containing 2 parts of organic carbon, or 0.3 parts of organic nitrogen per million, should be rejected where possible. I have not employed the process in the analyses of Canadian river and well waters which I have made within