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NOTE ON THE CONTRACTION OF ALCOHOL AT LOW TEMPERATURES.

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Although everyone is aware that liquids are subject to expansion by heat, there are few persons who recognize the importance of the fact as applied to the common operations of measuring. It is true that with most liquids, and especially those which contain a large proportion of water, the difference in bulk caused by a variation of ten or twenty degrees of heat, is almost inappreciable. In the ordinary operations of pharmacy, where extreme accuracy is not required, and where the bulk of the liquid is inconsiderable, the effects of temperature may be disregarded. There are, however, instances where want of attention to this would lead to appreciable and serious errors. This occurs when the quantity of the liquid is large; or the variation from the standard temperature is considerable, and more especially, when the liquid to be measured contains a large proportion of alcohol, as the dilatation of spirit, by heat, is triple that of water. The attention of the writer was lately directed to the practical bearing of this subject by the following incident.

In the early part of December last, a firm doing business in Toronto, shipped to a country customer, a quantity of alcohol. It is possible that, during transportation, the spirit was exposed to a temperature of twenty degrees below zero, Fahrenheit. In this condition it was received by the purchaser, who at once proceeded