0·9937 = 0·001332; but standard water, by table, at 18°·3 has the density 1·02534, and 1·02534 + 0·00133 = 1·02667, which is the required density at 18°·3.

Second example—Given the density at 18°·3 C. as 1·02667, find that at 15°·56 C. Answer: At 18°·3 C. the density of the given water is 1·02667 − 1·02534 = 0·00133 heavier than the standard; hence the corresponding difference at 15°·56 C. is $0·00133 + \frac{1}{\phi(18·3)}$ = by table to 0·00133 × 1·0063 = 0·00134, hence the result sought = 1·02600 + 0·00134 = 1·02734.

Making use of Table I., Table II. has been compiled; it gives the densities of three waters, A, B, and C, for every whole degree Centigrade. B is the standard water of Table I., and its density at 15°·56 C. is 1·026. The density of water A is 1·025 and that of C is 1·027. Table III. is identical with Table II., with this difference that the values are given for every degree of Fahrenheit's scale between 32° and 88°.

By means of one or other of these tables a density observed at any temperature can be reduced to its value at the standard temperature of 60° F. (15°·56 C.).

The following table has been compiled from Professor Dittmar's Memoir, giving the percentage of chlorine, or rather of halogen calculated as chlorine, in a kilogramme of water of different densities, and his coefficient (180·584) for the proportion of *total salts* to 100 parts of halogen calculated as chlorine. The results for chlorine have been reduced to their values in grammes per litre measured at 60° F., and those for the total salts to grammes per litre and ounces per gallon, both measured at 60° F.

Density at 60° F. (15°·56 C.).	Halogen calculated as Chlorine.		Total Salts.		
	Grammes per Kilogramme.	Grammes per Litre at 60° F.	Grammes per Kilogramme.	Grammes per Litre at 60° F.	Ounces per Gallon at 60° F.
1·02200	16·51	16·87	29·814	30·469	4·865
300	17·23	17·62	31·114	31·829	5·085
400	17·95	18·36	32·414	33·191	5·305
500	18·67	19·13	33·713	34·555	5·526
600	19·39	19·88	35·015	35·925	5·746
700	20·11	20·65	36·315	37·295	5·966
800	20·83	21·40	37·616	38·668	6·187

One of the most interesting results of the analyses by Professor Dittmar of a very large number of the samples brought from different localities passed over during