the cruise was that, however much the proportion of total salts to water might vary, the composition of the saline mixture was very constant. From his analyses he has calculated the following numbers for the average composition of ocean water salts.

TABLE IV.—*Average Composition of Ocean Water Salts.*

	Per 100 parts of Total Salts.	Per 100 of Halogen calculated as Chlorine.
Chlorine, ...	55·292 } [1]	99·848
Bromine, ...	0·1884 }	0·3402
Sulphuric acid (SO_3), ...	6·410	11·576
Carbonic acid (CO_2), ...	0·152	0·2742
Lime (CaO), ...	1·676	3·026
Magnesia (MgO), ...	6·209	11·212
Potash (K_2O), ...	1·332	2·405
Soda (Na_2O), ...	41·234	74·462
Oxygen equivalent of halogen, ...	− 12·493	− 22·559
Total Salts, ...	100·000	180·584

" Combining acids and bases, we have the following average composition of sea salt :—

Chloride of sodium, ...	77·758
Chloride of magnesium, ...	10·878
Sulphate of magnesium, ...	4·737
Sulphate of lime, ...	3·600
Sulphate of potash, ...	2·465
Bromide of magnesium, ...	0·217
Carbonate of lime, ...	0·345
	100·000 "

With these tables the results of observations of density can be interpreted so as to give a very accurate indication of the chemical composition of the water.[2]

[1] Equal conjointly to 55·376 parts of chlorine, which accordingly is the percentage of "halogen reckoned as chlorine" in the *real* total solids.

[2] Prof. Dittmar says :—"From my experiments, hitherto unpublished, on the dissociation of sea water carbonates I conclude that, supposing at a certain time all oceanic carbonates had been of the general formula $R''O.1\frac{1}{2}CO_2$, it could not have sunk below this state of saturation anywhere, *i.e.*, it could not, even in the tropics, have arrived at the composition $R''O.nCO_2$ where n $< 1\frac{1}{2}$; and supposing, secondly, all oceanic carbonates had been of the formula $R''O.1\frac{3}{4}CO_2$, it would not probably have lost carbonic acid, even if the temperature were 32° C. All this rests on the tacit