The source of the salts existing in sea water is rock-substance which has been disintegrated and decomposed by atmospheric influences. The soluble components or products washed out by the rain, and collected in the streams and rivers, are eventually carried into the sea. Here the water is subjected to the action of the sun and winds, which causes it to evaporate, leaving the salts behind. A great quantity of the vapour so formed is carried inland, and condensed on the mountains, washing out the rock and taking up a fresh charge of solid matter which it carries down into the sea, which is thus the great receptacle of degraded land. As it is known that all rivers, at present, hold more or less solid matter in solution, the sea must be continually becoming salter, and must have been always doing so, unless the organic and physical processes by which salts are removed from the ocean should be so active as to counteract the tendency to

TABLE V.—*Showing the Total Saline Contents of Waters of different Densities.*

Density at 60° F.	Total Salts in Grammes per Kilogramme.	Density at 60° F.	Total Salts in Grammes per Kilogramme.	Density at 60° F.	Total Salts in Grammes per Kilogramme.
1·02500	33·713	1·02600	35·015	1·02700	36·315
510	·843	610	·145	710	·445
520	·973	620	·275	720	·575
530	34·103	630	·405	730	·705
540	·234	640	·535	740	·835
550	·364	650	·665	750	·965
560	·494	660	·795	760	37·096
570	·624	670	·925	770	·226
580	·754	680	36·055	780	·356
590	·884	690	·185	790	·485

assumption that the atmosphere is the only active agent, and has always contained 0·0003 of its volume of carbonic acid. From Herschel's estimate of the total mass of the atmosphere, I calculate that the total carbonic acid of the atmosphere amounts to $2{\cdot}277 \times 10^{12}$ tons (1 ton = 1000 kilogrammes).

"From the oceanometric data of Boguslawski, on the other hand, I calculate that the total *loose* base is equivalent to 160×10^{12} tons of carbonate of lime. Hence, assuming (1) the present oceanic carbonate to be on the average $R''O.1\frac{1}{2}CO_2$, the total *loose* CO_2 in the ocean amounts to $35{\cdot}2 \times 10^{12}$ tons, or to 15·5 times that contained in the atmosphere. And, assuming (2) the present oceanic carbonates to be on the average $R''O.1\frac{3}{4}CO_2$, its total *loose* carbonic acid amounts to $52{\cdot}8 \times 10^{12}$ tons, or to 23·2 times that contained in the atmosphere.

"I am, on the whole, inclined to think that of the two numbers, 15·5 and 23·2, the latter comes nearer to the actual value, and, pending further experiments and observations, I assume that, taking the carbonic acid of the atmosphere = 1, that of the ocean is (not far removed from) $\frac{(15{\cdot}5 \times 23{\cdot}2)}{2} = 19{\cdot}4$."