

Of water at various depths beneath the surface, fifty-nine analyses were made. Those in the first cruise, twenty-six in number, were chiefly from bottom-water at depths from 25 to 1,476 fathoms. In the second cruise the twenty-one analyses chiefly belonged to two series,—the first of samples taken at intervals of 250 fathoms, from 2,090 to 250 fathoms inclusive; and the second of samples taken at intervals of fifty fathoms from 862 to 400 fathoms inclusive. In the third cruise twelve analyses were made,—eight of bottom-water, of which one-half were in the “cold area,” and four at intermediate depths.

The general average of the fifty-nine analyses of water taken below the surface gives:—

	Percentage.	Proportion.
Oxygen . . . . .	20·568	100
Nitrogen . . . . .	52·240	254
Carbonic acid . . . . .	27·192	132
	100·000	

It will be seen from this that while the quantity of nitrogen is only 1·97 per cent. less than in surface-water, the quantity of oxygen is diminished by 4·48 per cent., and the quantity of carbonic acid increased by 6·45 per cent. This difference is greater if bottom-waters only are compared with surface-waters.

	30 Surface.		24 Intermediate.		35 Bottom.	
	Per cent.	Proportion.	Per cent.	Proportion.	Per cent.	Proportion.
Oxygen . . . . .	25·05	100	22·03	100	19·53	100
Nitrogen . . . . .	54·21	216	51·82	235	52·60	261
Carbonic acid . . . . .	20·74	83	26·15	119	27·87	143
	100·00		100·00		100·00	

The two series of analyses, before referred to, performed during the second cruise upon intermediate waters at successive depths over the same spot, both show a regular increase of the