

Depth in feet.	Yield in bbls.
170 Culver—Sub. 7, R. C., L. 18, Con. 2.....	200
173 Allen—Sub. 32, R. 5, L. 17, Con. 2.....	2000
175 Barnes—Sub. 36, R. 5, L. 17, Con. 2.....	300
178 Petit—W. $\frac{1}{2}$ L. 19, Con. 2.....	3000
180 George Gray—Sub. 32, R. I., L. 17, Con. 2.....	150
180 Holmes—Sub. 9, E. $\frac{1}{2}$ L. 19, Con. 2.....	500
187 McColl—Sub. 37, R. 5, L. 17, Con. 2.....	1200
188 Swan—E. part L. 18, Con. 2.....	6000
196 Nelson—Sub. 29, R. 2, L. 17, Con. 2.	
212 Fiero—Sub. 1, R. 4, L. 19, Con. 1.....	6000
237 Black & Mathewson—Sub. 12, L. 17, Con. 1.....	7500

NOTE IX., page 396.

The thoughts embodied in this and the five following chapters were first shadowed forth by the author in the Michigan Journal of Education in 1860. They were more fully elaborated in the Ladies' Repository for November and December, 1863, and January, 1864. Many thoughts and conceptions which were then original appear to be now but the echoes of Mayer, Helmholtz, and others. This is particularly the case in reference to the doctrine of solar refrigeration. That doctrine, then entirely new to the writer, was put forth with much apprehension. The publication of Mayer's papers in Silliman's Journal (vol. xxxvi., p. 261; xxxvii., p. 187; xxxviii., p. 239, 397) in 1863 and 1864 afforded the writer the first exact basis for conclusions which he had already reached. The later researches of others have served to give a scientific sanction to statements which at one time might have been regarded as little more than vagaries of the imagination.

NOTE X., page 404.

Such, at least, is the generalization put forth by Müncke, Mrs. Somerville, and other physicists. It is apparently founded on reports of observations made by Scoresby and Parry in the Arctic Ocean, and by James Ross in the Antarctic. M. Charles Martins, however, a highly competent authority, denies that any such increase of temperature in the deeper arctic waters exists. Nothing of the kind was observed by le Contre-Amiral Coupvent des Bois in the voyage of the corvettes *Astrolabe* and *Zélée*; nor in the soundings made on the two voyages to Spitzbergen with the corvette *Recherche*.

On this subject, see Gehler's *Physikalisches Wörterbuch*, t. vi., p. 1685; Somerville's *Connection of the Physical Sciences*, Am. ed., p. 245; May-