

depths in the ocean, to determine the amount and sources of error, to ascertain which was the most satisfactory instrument, and if possible to construct a scale by which the observations hitherto taken with ordinary instruments might be roughly corrected, so as to be made available. As there was some difficulty in getting the use of a suitable press, Mr. Casella undertook to have a testing apparatus constructed at his own place in Hatton Garden, capable of producing a pressure of three tons on the square inch.

The results were very interesting.¹ The first experiment went to test the value of the various instruments. A Miller-Casella thermometer was placed in the cylinder with No. 57, a good thermometer by Casella, of the ordinary Hydrographic Office pattern, and they were subjected together to a pressure of 4,032 lbs., equal to 1,480 fathoms, with the following result :—

Thermometer.	Minimum.		Maximum.		Difference of Maximum.
	Before.	After.	Before.	After.	
2	8° 6 C.	8° 6 C.	8° 6 C.	8° 85 C.	0° 25 C.
57	8 · 6	8 · 6	8 · 6	12 · 75	4 · 15

That is to say, the temperature remaining the same, the pressure forced up No. 57 to 12°·75 C., and left its index there.

¹ On Deep Sea Thermometers, by Captain J. E. Davis, R.N. *Nature*, vol. iii. p. 124. Abridged from a Paper read before the Meteorological Society, April 19th, 1871.