

temperature varies greatly: thus, on 2nd May it was $73\frac{1}{2}^{\circ}$ Fahr. (23° C.) at 8.45 a.m., 79° Fahr. (26° C.) at 2.30 p.m., and 69° Fahr. ($20^{\circ}\cdot5$ C.) at 9 p.m., the fall being caused by a fresh north-westerly breeze. The temperature was 68° to 69° Fahr. (20° to $20^{\circ}\cdot5$ C.) at a depth of 30 feet, and fell to 62° or 63° Fahr. ($16^{\circ}\cdot7$ or $17^{\circ}\cdot2$ C.) at 50 feet. Between 65 and 130 feet the water had a uniform temperature of 59° Fahr. (15° C.). This is a much higher temperature than is observed in the Swiss lakes at the same depth, and is partly due to the lower latitude and lower altitude (682 feet *below* sea-level), and partly to the hot springs which pour their waters into the lake, besides others which probably rise from the bottom.

Dead Sea lies 1292 feet below sea-level. It is 46 miles long, and varies in breadth from 5 to 9 miles, the area being about 360 square miles. The greater part of what is known regarding the depths and shore-line of the Dead Sea was ascertained by the United States expedition sent out in 1847 under Lieutenant Lynch,¹ who found a maximum depth of 1278 feet in the northern portion.

The affluents of the Dead Sea carry to it every twenty-four hours from six to ten million tons of water, which must all be lost by evaporation, so that the water of the sea contains much dissolved matter (24 to 26 per cent., as compared with the 3 to 4 per cent. of ordinary sea-water), and its specific gravity is 1.13, while that of the Atlantic in lat. 25° N., long. 52° W., is 1.02. Mr W. Ackroyd² believes that the two causes usually assigned for the saltness of the water—viz. the accumulation of chlorides derived from the rocks of the Holy Land by solvent denudation, and the cutting off of an arm of the Red Sea by the rising of Palestine in past ages—are inadequate, and that a third cause, probably more important than either, is the atmospheric transportation of salt from the Mediterranean. The salt is brought from the sea by winds, finds its way into the rivers and thence into the Dead Sea, where the saline solution continually becomes salter by evaporation.

The surface of the Dead Sea is liable to frequent fluctuations in level, due to a succession of exceptionally dry or rainy seasons, to the greater or lesser activity of subaqueous springs, to landslips, to changes in the drainage, to the gradual silting up of the basin, and possibly to slight earth-movements which escape detection. The annual rise and fall is estimated at from 6 to 10 feet, but there seem to be also prolonged periods of high and low level. Lines of driftwood and marks on the rocks show the limits of rise which might occur under existing conditions, and a fall of 15 feet is quite possible during exceptional periods of dryness.

¹ See *Amer. Journ. Sci.*, vol. lvii. p. 324, 1849.

² See *Quarterly Statement, Palestine Exploration Fund*, January 1904, p. 64.