

of eccentricity, will displace the centre of gravity, and, as the result of this change, will raise the level of the ocean in the glacial hemisphere.²⁶ The late Dr. Croll estimated that, if the present mass of ice in the southern hemisphere is taken at 1000 feet thick extending down to lat. 60°, the transference of this mass to the northern hemisphere would raise the level of the sea 80 feet at the north pole. Other methods of calculation give different results. Mr. Heath put the rise at 128 feet; Archdeacon Pratt made it more; while the Rev. O. Fisher gave it at 409 feet.²⁷ Subsequently, in returning to this question, Dr. Croll remarked "that the removal of two miles of ice from the Antarctic continent [and at present the mass of ice there is probably thicker than that] would displace the centre of gravity 190 feet, and the formation of a mass of ice equal to the one-half of this, on the Arctic regions, would carry the centre of gravity 95 feet further; giving in all a total displacement of 285 feet, thus producing a rise of level at the north pole of 285 feet, and in the latitude of Edinburgh of 234 feet." A very considerable additional displacement would arise from the increment of water to the mass of the ocean by the melting of the ice. Supposing half of the two miles of Antarctic ice to be replaced by an ice-cap of similar extent and one mile thick in the northern hemisphere, the other half being melted into water and increasing the mass of the ocean, Dr. Croll estimated that from this source an extra rise of 200 feet would take place in the general ocean level, so that there would be a rise of 485 feet at the north

²⁶ Adhemar, "Révolutions de la Mer," 1840.

²⁷ Croll, in Reader for 2d September, 1865, and Phil. Mag. April, 1866; Heath, Phil. Mag. April, 1869; Pratt, Phil. Mag. March, 1866; Fisher, Reader, 10th February, 1866.