

CHAPTER XIV.

CAUSES OF CLIMATAL CHANGE.

THE subject of this chapter is one which has been in dispute ever since I began to read anything on geology, nearly sixty years ago. It ought to have been settled, but up to to-day one finds in geological works and papers—especially those relating to the Glacial age—the most divergent views; and in the writings of men not geologists, it is not unusual to find exploded theories gravely stated as established facts of science. The subject is one which I cannot hope to make interesting, but if the reader will wade through a short chapter, he will be able to find some of the data on which statements on this subject in other papers of this series are based.

Mr. Searles V. Wood, in an able summary of the possible causes of the succession of cold and warm climates in the northern hemisphere, enumerates no fewer than seven theories which have met with more or less acceptance, and he might have added an eighth. These are:—

(1) The gradual cooling of the earth from a condition of original incandescence.

(2) Changes in the obliquity of the ecliptic.

(3) Changes in the position of the earth's axis of rotation.

(4) The effect of the precession of the equinoxes, along with changes of the eccentricity of the earth's orbit.

(5) Variations in the amount of heat given off by the sun.

(6) Differences in the temperature of portions of space passed through by the earth.