

rocks, no reliable opinion can be formed on mere inspection. Two blocks of marble may appear precisely alike, though formed at different periods. A crystal of carbonate of lime, formed in a few years, would be found quite perfect, and as compact as a crystal formed during many centuries. Nothing can be deduced from the process of petrification and crystallisation, unless they enclose relics of a known period. At San Filippo, a solid mass of limestone thirty feet thick has been formed in about twenty years. A hard stratum of travertine a foot thick is obtained, from these thermal springs, in the course of four months. Nor can geologists demonstrate that the Amiens deposits, in which the flint-implements occur, are more than three or four thousand years old.

The causes of these changes and mutations are referred by some persons to floods, or to pre-Adamite convulsions, whereas the cause is in constant operation; they are due to an invisible and subtle power which pervades the air, the ocean, and the rocks below—in which all are wrapped and permeated—which is universally present, namely, magnetism—a power always in operation, always in a state of activity and tension. It has an attractive power towards the surface of the earth, as well as a directive action from pole to pole. “It is, indeed,” he adds, emphatically, “the *terrestrial gravitation*. Magnetic needles freely suspended show its meridional or directive polar force, and that the force converges at two opposite parts, which are bounded by the Antarctic and Arctic circles.”

This polar force, like a stream, is constantly moving from pole to pole; and experiment proves that this movement is from the South Pole to the North. “Hence the various terrestrial substances, solids and fluids, through which this subtle and universal power permeates, are controlled, propelled, and modified over the entire surface of our globe, commencing at the south and dissolving at the north. Thus, all terrestrial matter moves towards the Arctic region, and finally disappears by dissolution and absorption, to be renewed again and again in the Antarctic Sea to the end of time.”

In order to prove that the north polar basin is the receptacle of the final dissolution of all terrestrial substances, Mr. Hopkins quotes the Gulf Stream. Bottles, tropical plants, and wrecks cast into the sea in the South Atlantic, are carried to Greenland in a comparatively short time. The great *tidal* waves commence at the fountain-head in the Antarctic circle, impinge against the south coast of Tierra del Fuego, New Zealand, and Tasmania, and are then propelled northward in a series of undulations. The South Atlantic stream, after doubling the Cape of Good Hope, moves towards the Guinea coast,