

fair, "palpable evidence of one of the most extraordinary and important facts in the natural history of the earth."

As a result of his wanderings and reflection, he concluded that the great mass of the rocks which form the visible part of the crust of the earth was formed under the sea, as sand, gravel, and mud are laid down there now; that these ancient sediments were consolidated by subterranean heat, and, by paroxysms of the same force, were fractured, contorted, and upheaved into dry land. He found that portions of the rocks had even been in a fused state; that granite had been erupted through other stony masses; and that the dark trap-rocks, or "whinstones" of Scotland, were likewise of igneous origin.

When the sedimentary rocks were studied in the broad way which was followed by Hutton and his associates, many proofs appeared of ancient convulsions and re-formations of the earth's surface. It was found that among the hills the strata were often on end, while on the plains they were gently inclined; and the inference was deduced by Hutton that the former series must have been broken up by subterranean commotions before the accumulation of the latter, which was derived from its *débris*. He conjectured that the later rocks would be found actually resting upon the edges of the older. His search for, and discovery of, this relation at the Siccar Point, on the Berwickshire coast, are well described by his biographer Playfair, who accompanied him, and who, dwelling on the impression which the scene had left upon himself, adds, "The mind seemed to grow giddy by looking so far into the abyss of time; and while we listened with earnestness and admiration to the philosopher who was now unfolding to us the order and series of these wonderful events, we became sensible how much farther reason may sometimes