

Brazil, the appearance of which induced him to believe that the Indian race has existed during a vast lapse of time in South America.

When at Lima I conversed on these subjects¹ with Mr. Gill, a civil engineer, who had seen much of the interior country. He told me that a conjecture of a change of climate had sometimes crossed his mind; but that he thought that the greater portion of land, now incapable of cultivation, but covered with Indian ruins, had been reduced to this state by the water-conduits, which the Indians formerly constructed on so wonderful a scale, having been injured by neglect and by subterranean movements. I may here mention that the Peruvians actually carried their irrigating streams in tunnels through hills of solid rock. Mr. Gill told me he had been employed professionally to examine one; he found the passage low, narrow, crooked, and not of uniform breadth, but of very considerable length. Is it not most wonderful that men should have attempted such operations without the use of iron or gunpowder? Mr. Gill also mentioned to me a most interesting, and, as far as I am aware, quite unparalleled, case of a subterranean disturbance having changed the drainage of a country. Travelling from Casma to Huaraz (not very far distant from Lima), he found a plain covered with ruins and marks of ancient cultivation, but now quite barren. Near it was the dry course of a considerable river, whence the water for irrigation had formerly been conducted. There was nothing in the appearance of the water-course to indicate that the river had not flowed there a few years previously; in some parts beds of sand and gravel were spread out; in others, the solid rock had been worn into a broad channel, which in one spot was about 40 yards in breadth and 8 feet deep. It is self-evident that

¹ Temple, in his travels through upper Peru, or Bolivia, in going from Potosi to Oruro, says, "I saw many Indian villages or dwellings in ruins, up even to the very tops of the mountains, attesting a former population where now all is desolate." He makes similar remarks in another place; but I cannot tell whether this desolation has been caused by a want of population, or by an altered condition of the land.