gradual and continuous throughout indefinite ages to allow the waves and currents of the ocean to operate with adequate power.

The map constructed by Mr. Darwin to display at one view the geographical position of all the coral reefs throughout the globe is of the highest geological interest, leading to splendid generalizations, when we have once embraced the theory that all atolls and barrier reefs indicate recent subsidence, while the presence of fringing reefs proves the land to be stationary or rising. These two classes of coral formations are depicted by different colours; and one of the striking facts brought to light by the same classification of coral formations is the absence of active volcanos in the areas of subsidence, and their frequent presence in the areas of elevation. The only supposed exception to this remarkable coincidence at the time when Mr. Darwin wrote, in 1842, was the volcano of Torres Strait, at the northern point of Australia, placed on the borders of an area of subsidence; but it has been since proved that this volcano has no existence.

We see, therefore, an evident connection, first, between the bursting forth every now and then of volcanic matter through rents and fissures, and the expansion or forcing outwards of the earth's crust, and, secondly, between a dormant and less energetic development of subterranean heat, and an amount of subsidence sufficiently great to cause mountains to disappear over the broad face of the ocean, leaving only small and scattered lagoon islands, or groups of atolls, to indicate the spots where those mountains once stood.

On a review of the differently-coloured reefs on the map alluded to, it will be seen that there are large spaces in which upheaval, and others in which depression prevails, and these are placed alternately, while there are a few smaller areas where movements of oscillation occur. Thus if we commence with the western shores of South America, between the summit of the Andes and the Pacific (a region of earthquakes and active volcanos), we find signs of recent elevation, not attested indeed by coral formations, which are wanting there, but by upraised banks of marine shells. Then proceeding westward, we traverse a deep ocean without islands, until we come to a band of *atolls* and encircled islands, including the Dangerous and Society archipelagos, and constituting an area of subsidence more than 4000 miles long and 600 broad. Still farther, in the same direction, we reach the chain of islands to which the New Hebrides, Solomon, and New Ireland belong, where fringing reefs and masses of elevated coral indicate another area of upheaval. Again, to the westward of the New Hebrides we meet with the encircling reef of New Caledonia and the great Australian barrier, implying a second area of subsidence.

The only objection deserving serious attention which has hitherto been advanced against the theory of atolls, as before explained (p. 759.), is that proposed by Mr. Maclaren.* "On the outside,"

* Scotsman, Nov. 1842, and Jameson's Edin. Journ. of Science, 1843.