

whirlwinds carried up men, horses, cattle, and whatever else came within their influence, into the air; tore up the largest trees by the roots, and covered the whole sea with floating timber.* Great tracts of land were covered by lava, several streams of which, issuing from the crater of the Tomboro mountain, reached the sea. So heavy was the fall of ashes, that they broke into the Resident's house at Bima, forty miles east of the volcano, and rendered it, as well as many other dwellings in the town, uninhabitable. On the side of Java the ashes were carried to the distance of 300 miles, and 217 towards Celebes, in sufficient quantity to darken the air. The floating cinders to the westward of Sumatra formed, on the 12th of April, a mass two feet thick, and several miles in extent, through which ships with difficulty forced their way.

The darkness occasioned in the daytime by the ashes in Java was so profound, that nothing equal to it was ever witnessed in the darkest night. Although this volcanic dust when it fell was an impalpable powder, it was of considerable weight when compressed, a pint of it weighing twelve ounces and three quarters. "Some of the finest particles," says Mr. Crawford, "were transported to the islands of Amboyna and Banda, which last is about 800 miles east from the site of the volcano, although the south-east monsoon was then at its height." They must have been projected, therefore, into the upper regions of the atmosphere, where a counter current prevailed.

Along the sea-coast of Sumbawa, and the adjacent isles, the sea rose suddenly to the height of from two to twelve feet, a great wave rushing up the estuaries, and then suddenly subsiding. Although the wind at Bima was still during the whole time, the sea rolled in upon the shore, and filled the lower parts of the houses with water a foot deep. Every prow and boat was forced from the anchorage, and driven on shore.

The town called Tomboro, on the west side of Sumbawa, was overflowed by the sea, which encroached upon the shore so that the water remained permanently eighteen feet deep in places where there was land before. Here we may observe, that the amount of subsidence of land was apparent, in spite of the ashes, which would naturally have caused the limits of the coast to be extended.

The area over which tremulous noises and other volcanic effects extended, was 1000 English miles in circumference, including the whole of the Molucca Islands, Java, a considerable portion of Celebes, Sumatra, and Borneo. In the island of Amboyna, in the same month and year, the ground opened, threw out water, and then closed again.†

In conclusion, I may remind the reader, that but for the accidental presence of Sir Stamford Raffles, then governor of Java, we should scarcely have heard in Europe of this tremendous catastrophe. He required all the residents in the various districts under his authority to send in a statement of the circumstances which occurred within

* Raffles's Java, vol. i. p. 28.

† Raffles's Hist of Java, vol. i. p. 25. — Ed. Phil. Journ. vol. iii. p. 389.