

Germany. The thermal springs of Töplitz dried up, and again returned, inundating every thing with water discoloured by ochre. In the islands of Antigua, Barbadoes, and Martinique in the West Indies, where the tide usually rises little more than two feet, it suddenly rose above twenty feet, the water being discoloured and of an inky blackness. The movement was also sensible in the great lakes of Canada. At Algiers and Fez, in the north of Africa, the agitation of the earth was as violent as in Spain and Portugal; and at the distance of eight leagues from Morocco, a village with the inhabitants, to the number of about 8,000 or 10,000 persons, are said to have been swallowed up; the earth soon afterwards closing over them.

Subsidence of the quay.— Among other extraordinary events related to have occurred at Lisbon during the catastrophe was the subsidence of a new quay, built entirely of marble at an immense expense. A great concourse of people had collected there for safety, as a spot where they might be beyond the reach of falling ruins; but, suddenly, the quay sank down with all the people on it, and not one of the dead bodies ever floated to the surface. A great number of boats and small vessels anchored near it, all full of people, were swallowed up, as in a whirlpool.* No fragments of these wrecks ever rose again to the surface, and the water in the place where the quay had stood is stated, in many accounts, to be unfathomable; but Whitehurst says he ascertained it to be one hundred fathoms.†

Circumstantial as are the contemporary narratives, I learn from a correspondent, Mr. F. Freeman, in 1841, that no part of the Tagus was then more than thirty feet deep at high tide, and an examination of the position of the new quay, and the memorials preserved of the time and manner in which it was built, renders the statement of so great a subsidence in 1755 quite unintelligible. Perhaps a deep narrow chasm, such as was before described in Calabria (p. 462.), opened and closed again in the bed of the Tagus, after swallowing up some incumbent buildings and vessels. We have already seen that such openings may collapse after the shock suddenly, or in places where the strata are of soft and yielding materials, very gradually. According to the observations made at Lisbon, in 1837, by Mr. Sharpe, the destroying effects of this earthquake were confined to the tertiary strata, and were most violent on the blue clay, on which the lower part of the city is constructed. Not a building, he says, on the secondary limestone or the basalt was injured.‡

Shocks felt at sea.— The shock was felt at sea, on the deck of a ship to the west of Lisbon, and produced very much the same sensation as on dry land. Off St. Lucar, the captain of the ship Nancy felt his vessel so violently shaken, that he thought she had struck the ground; but, on heaving the lead, found a great depth of water. Captain

* Rev. C. Davy's Letters, vol. ii. Letter ii. p. 12., who was at Lisbon at the time, and ascertained that the boats and vessels said to have been swallowed were missing.

† On the Formation of the Earth, p. 55.

‡ Geol. Soc. Proceedings, No. 60. p. 36. 1838.