VOLCANIC ROCKS IN JAPAN.

singular was, that on lifting the book containing the canon of the mass from the altar-cloth, on which it had been thrown, face downward, on the spot where it had lain were seen, imprinted by the lightning, the words of consecration in the book, with the exception of those words on which Catholics lay peculiar stress—"This is my body." This omission was accepted by many as a supernatural intimation, and gave room for many superstitious speculations which greatly scandalised the orthodox. It is not difficult to account for a circumstance seemingly so inexplicable. The phenomenal inscription was an exact reproduction in reverse on the altar-cloth of the text in the book which lay immediately above it. While this generally was written in ordinary ink, the sacramental words omitted were distinguished by being in *red letter*, as is customary. The red ink being of vegetable, and the black of mineral composition, their diverse conductive powers explain the different effect of the electric force on the paper impregnated with them, interposed between it and the altar cloth.

VOLCANIC ROCK IN JAPAN.

THE physical geography of Japan exhibits the most striking indications of volcanic action; and, apart from those craters which still emit smoke and flame, there are extinct volcanoes and rocks of volcanic formation, which prove the island of Japan to have been the seat of great volcanic movements connected, most probably, with those of Kamtschatka, the island of Formosa, and the Asiatic Archipelago.

Recent intelligence, received from Japan, forcibly confirms the volcanic theory with respect to these islands. Volcanoes and earthquakes are, it is well known, intimately connected; and earthquakes in Japan are of frequent occurrence.

"Seriously," says a recent writer, "we have had one or two in every week since my arrival—not violent enough to throw houses down, but quite sufficiently smart and long in duration to wake you out of the soundest sleep with a perfectly indescribable sense of insecurity; for the most frightful earthquake and volcanic eruption on record in Japan, it is to be remembered, began by many preliminary shocks of no great intensity, in this same district of Jeddo, in 1783, and seems to have exceeded in its horrors and wide destruction the earthquake of Lisbon at the other end of the chain. The accounts state that at eight o'clock on the morning of the 27th of July of that year a great wind got up, accompanied by subterranean mutterings of thunder, which continued augmenting from day to day, in seeming menace of some frightful catastrophe, until the 1st of August. On that day an earthquake, with loud thunders, shook all the houses to their foundation, the intensity of the shocks each moment increasing until the summit of the mountain was rent open, and fire and flames appeared, followed by such an avalanche of sand and stones, tossed high into the air, and carried to incredible distances, that the darkness of night came on, the only light being the lurid glare of burning lava and devastating flames. Vast chasms opened before the affrighted inhabitants in their flight, in which thousands, in the darkness and panic, urged on by the streams of fire and showers of stone and ashes, are said to have been precipitated. The shocks did not entirely cease until the twelfth day, and were felt over a space of thirty leagues. Twenty-seven towns and villages were destroyed—the rivers, boiling and overflowing, inundated the whole country, to complete the work of destruction. I think it must be admitted that there is enough in this account, drawn from Japanese sources, and the accounts of eye witnesses, to make men, 'not to the manner born,' feel anything but reconciled to the daily chance of a repetition, especially as the same volcanic centre has given as late as 1854 a signal proof of undiminished vigour. . . . . The Japanese, by-the-by, tell me they find the magnet loses its power during an earthquake, possibly some time before—a curious fact, and one well worthy of further investigation; I intend to set about it. With a good horse-shoe magnet suspended, and a gong or copper basin beneath, one might improvise an earthquake alarum; and if it only gave a few seconds' notice, it might at least save people from being buried beneath the ruins of their own houses."

The accompanying illustration represents the aspect of a singular group of rocks of volcanic origin in Japan—an examination of which is highly interesting to geologists.