

SPECIAL
ARTICLES

Our Contributors

BOOK
REVIEWS

VESUVIUS: PAST AND PRESENT.

(Scientific American.)

Because of its constantly recurring outbursts, Vesuvius has been more carefully watched than perhaps any other of the world's volcanoes. Delicate instruments have been devised to foretell an eruption, and it is no doubt due to those that the crater's present activity has cost only hundreds and not thousands of lives. And yet we can no more account for the slumber of Vesuvius than for its violent outbursts. Even constant observation has not always enabled science to forecast the occurrence of the upheavals. During the great eruption of 1872, Prof. Palmieri's delicate seismographic instruments at the Monte di Somma observatory gave not even the slightest indication of what was to come; and so while we are familiar with the record of the past, that of the future is often veiled.

Although there were vague legends among the ancients concerning the fiery nature of the mountain, it was not till the year 79 that the true character of the great solitary cone rising from the plain of Campania was suspected, notwithstanding that sixteen years previous, in 63, and repeatedly thereafter, severe earthquakes partially destroyed the cities in the vicinity of the Bay of Naples. From the geographer Strabo we learn that the slopes of Vesuvius were at that time covered with fertile meadows, though the summit, which was flat and apparently without traces of a crater, was sterile and showed indications of a fiery origin. Almost without warning on August 24, 79, an enormous cloud of black vapor rose from the summit, accompanied by the explosion which shattered the top and marked the beginning of the great historic eruption so ably described in the letters written to Tacitus by Pliny the younger, nephew of the famous Roman admiral of that name, who perished while hastening to the relief of the inhabitants of Pompeii, Herculaneum, and Stabiae with the fleet under his command. Pompeii was overwhelmed and buried to a depth of many feet by a terrific rain of volcanic ashes. We can only estimate the number of the inhabitants who perished, but in the mode of death is indelibly recorded in the molds of bodies found in the ashes of the dead city by the excavators of today. Herculaneum, on the other hand, was destroyed, not by a great flow of lava, as is commonly believed, but by torrents of boiling mud, belated in the air by the condensation of great masses of vapor laden with lapilli or scoriae, as the volcanic sand or ashes are known.

The first eruption definitely recorded after this was described by Dion Cassius, it occurred in 203, and appears to have been one of extraordinary violence. In 472 the mountain burst forth again in a terrible upheaval, during which it was said that clouds of ashes were carried as far as Constantinople. In the period between the first outburst and the year 1500 nine eruptions of greater or less intensity were recorded, while between 1500 and 1631 Vesuvius was entirely quiescent. So deep was the mountain's slumber during this time that it again became covered with vegetation and cattle peacefully grazed in the crater. Strangely enough, during this period Etna labored ceaselessly, and Monte Nuova was formed by an eruption near Pozzuoli. The hill was broken by a terrific outburst, the first of which was given a detailed account, on December 16, 1631, when huge clouds of vapor, violent earthquakes, showers of ashes and rocks, and no less than seven great streams of lava overwhelmed five of the neighboring towns, with a loss of thousands of lives, and even spread terror in Naples itself. This tremendous convulsion inscribed its memorials on the slopes of the mountain in obliterated estates and ruined villages. It appears that Vesuvius did not assume its present form until near the end of the seventeenth century, for Sorrentino describes

an eruption of 1385, during which there arose "a new mountain within and higher than the old one and visible from Naples." Thus it seems that the present Monte di Somma is really the original Vesuvius, and that the present cone is little more than two centuries old. From May to August, 1707, a continuous series of eruptions involving the loss of some three thousand lives again devastated the vicinity, and in 1737, 1760, and particularly in 1767, Vesuvius repeatedly manifested activity of a terrific nature.

A stupendous eruption took place in 1779 during which huge red-hot stones were hurled to a height of over 2,000 feet. The eruption of 1794 was even more terrific in its effects and was remarkable for the vast streams of lava which were precipitated into the sea near Torre del Greco. During the nineteenth century volcanic outbursts of remarkable violence occurred in 1804, 1805, 1822, 1831, 1850, 1855, and 1858. During the last-mentioned the upper crater sank several hundred feet below its former elevation. In 1861 another exceptionally violent outbreak occurred which again devastated Torre del Greco.

After a decade of comparative quiescence the mountain inaugurated a new series of outbursts by the emission of a number of small streams of lava in January, 1871, a series which culminated in 1872 in the tremendous eruption of that year. The greatest intensity was manifested from the 24th to the 30th of April, and during this period great streams of lava burst forth from all sides of the slope. At the same time the crater vomited great masses of vapor, stones, and lava to a height of over 4,000 feet, while clouds of ashes rose double this distance into the air. Such was the violence of this great eruption that it seemed as if the gigantic tragedy of 79 were about to be re-enacted, for several of the great molten rivers even threatened to reach the walls of Naples itself, while the storm of ashes and red-hot stones appeared almost inexhaustible. Until 1895 Vesuvius remained in a fairly quiet condition, but in that year a violent eruption took place, accompanied by a flow of lava which continued to advance for a number of years, but fortunately did not directly threaten any of the neighboring towns or villages.

The recent eruption is unquestionably one of the most violent of modern times. The flow of lava has not been of remarkable magnitude, though this, too, has caused enormous damage; but the fall of lapilli and stones has been almost unprecedented. The danger due to the latter is the more pressing one, and the great loss of life can be laid at its door alone, for the people, terror-stricken by the violence of the volcanic detonations and the murky yellow gloom, huddle together in buildings, many of which collapse under the weight of the accumulated material which has fallen upon them. Even in Naples itself this danger has been followed by fatal results, for the direction of the wind, not as in former eruptions, has been steadily toward the crowded city. The darkness which has enveloped the vicinity for days has been so deep that it was not possible for vessels to enter or leave the harbor, and it has at times raised the terror of the thousands of homeless refugees to a nitch bordering on frenzy. The communities living on the slopes of the mountain have naturally suffered most severely, and entire towns have been wiped out with heavy loss of life, while miles of fertile blossoming farms and vineyards have been converted into a desert of smoking gray ashes.

It appears that during this eruption great changes have again been wrought in the form of the mountain, and it will probably be found when the crest is once more visible, that as in the great eruption of 79 the major portion of the top has been completely blown away to be rebuilt in succeeding years by the slow welling forth of lava and ashes. After

the first great historic outburst, Vesuvius never regained its original appearance, and a remnant of the broken wall of the crater valley which crowned the older summit is still visible in Monte di Somma. During some eruptions the mountain has increased in height and during others it has sunk hundreds of feet. This alternate rising and falling of the top is a portentous feature of the history of Vesuvius and is indicative of the constant state of unrest in which the mountain has labored since the beginning of the Christian era.

That there is nothing with in the range of human knowledge which possesses greater power to compel sheer terror—more psychological than physical, perhaps—and abjectly helpless fear in the mind of man than a violent volcanic eruption, is undeniable. But either the exigencies of life or some peculiarly fatuous mental characteristic brings back to the very shadow of the great destructive agency those who fled in panic from their doomed habitations. There is no better example of this curious, careless attitude than the town of Torre del Greco, four and a half miles from the foot of the mountain, which has been overwhelmed no less than seventeen times. Incredible as it may seem, Martinique and St. Vincent, in the West Indies, the scenes of almost unparalleled devastations, which involved the loss of nearly half a hundred thousand lives, are being re-peopled; and doubtless as soon as Vesuvius, metaphorically, drops the lid of its fiery eye once more, we shall see the Italians returning to the ruins of their homes to repair by years of work the destruction caused in as many minutes, and to again populate the scores of little towns and villages, trusting to their numerous patron saints to avert such disasters in the future.

WOMAN'S WORK IN INDIA.

If ever all India is brought to accept Christ it will be largely if not chiefly due to the consecrated women missionaries in that country. It has been said that Christian missions only succeed among the low castes of India. This is largely true, though there are enough high-caste men in the church to prove that Christ can win against the most compacted forces of Hinduism. But be that as it may, is not a low-caste soul in the sight of God as valuable as a high-caste? What is to be remembered, however, is this: The low-caste Hindus of one generation, who become Christians, are greatly uplifted educationally and socially in the next generation and in the third generation dispute place and position and leadership with the very Brahmins, the hereditary aristocracy of the land. Well may Christianity say to India, Give me the humblest and the lowliest of your sons and daughters, and in fifty years I will put their descendants on a level with Brahmin priests and a high-caste pundits. If there is any mission work in India that has the smile of heaven upon it, woman's work for women is pre-eminently that. To take these daughters of ignorance and neglect, to mould and fashion them into a sweet and gracious womanhood, loving God with fervor and applying themselves bravely to the uplift of life all around them—this is the work of the woman's society, which makes one glad with a holy gladness every day. God bless the women.

Lutheran World:—In a recent essay on doctrinal preaching the writer says that "the absence of the catechism has left this generation at least unprepared to listen to such sermons intelligently." Could there be a stronger justification and plea in succeeding years by the slow welling forth of lava and ashes. After