

THE KRAKATOA ERUPTION.

VIVID DESCRIPTION OF A MOST TERRIFIC DISASTER.

The Most Stupendous Calamity to the Human Race Since the Deluge—Two Hundred Thousand Lives Supposed to Have Been Lost—An Interesting Account by an Eye-Witness.

The vicissitudes of my life have been such that not until now have I had the leisure or the disposition to describe the most terrific disaster known in the history of civilized man, of which I was an unwilling witness. I left Paris, where I studied my profession of civil engineer after the Franco-Prussian war, and going to Java for the Dutch government, I surveyed Borneo (except Sarawak), Lombok, where there has so lately been fighting, and New Guinea, that land of almost virgin mystery. To those familiar with the remote corners of the world, there is food for thought in the statement that I ran a line, in 1874, from Fly River, at the south end of Papua, to Gelvink bay, on the north, the first white man to traverse much of the interior of that great unknown island.

The spring of 1883 found me pursuing my profession in Batavia, the chief city of Java. Since I had first seen the island in 1871, I had been back to Europe several times, and had traversed a good portion of South Africa. I from time to time familiarized myself with the Java archipelago. As a student of history, I had made myself acquainted with those terrible casualties which are marked by funeral monuments along the progress of mankind. It has come in my way in the past several years to learn much that was interesting about the great storm which drowned hundreds along the coasts of Great Britain in November, in 1893, and about the tremendous explosion of dynamite in the harbor of Santander, by which, at the beginning of the same month, hundreds of Spaniards were stricken dead and many thousands were wounded. I have heard from eye-witness reports of the sudden flood in the Yang-tse-Kiang, at Han-Yang, in May, 1894, by which a thousand men, women, and children were swept to death out of their boats. The bursting of the dam at Charkupre, in India, in the same month, dismayed the world with the tidings of hundreds drowned or whelmed beneath a land slide. The plague which carried off scores of thousands of Chinese the same spring was reckoned an international peril. But none of those things moved me, for I had been an eye-witness of the most stupendous calamity to the human race since the deluge the cataclysm of Krakatoa. I lived to tell the tale, and if there was any other civilized spectator on the spot, of those dreadful scenes, I have not yet heard or read his story. Captain Bartlett, of the ship *Ice King*, which sailed through the Straits of Sunda shortly after the upheaval, reported many interesting observations, and a committee appointed by the British Royal Society investigated and made an elaborate report. I saw what I shall describe.

About eleven o'clock on Sunday morning, the 13th of May, 1883, the trouble began in the island of Java. All Java, Sumatra, and Borneo were convulsed. It was as though war had been declared underground. The surface of the earth rocked,

HOUSES TUMBLED DOWN,

and big trees fell out of the earth, as if had ejected their roots. I saw a tree fully five feet in diameter crash up into the air and fall supine. This was near the government buildings, on Waterloo plain, where the barracks, near the parade-ground, were severely shaken. The sun shone bright, the morning was still unclouded, and when we telegraphed over to the other islands and learned that their inhabitants were safe, we felt reassured at Batavia. The same phenomenon were in progress throughout the group of islands, but nothing worse than an earthquake was expected, and an earthquake was no rarity in those days in that part of the world, nor is it yet.

But this particular earthquake showed no sign of cessation. Day and night the subterranean convulsions continued. The earth quivered constantly, from its depths there seemed to rise strange cries and hollow explosions, with that all-pervasive ague, which now began to shake my nerves.

Thursday there came a telegraph from the city of Anjer, ninety miles away, on the northwest coast of Java, that a volcano had broken out on the island of Krakatoa, about thirty miles west of Anjer, in Sunda Strait. The two cone-shaped peaks of Krakatoa were familiar landmarks to all voyagers in those waters. They were clothed with luxuriant vegetation, and could be seen for miles in any direction. I was requested by the Dutch government, through the vice-admiral then at Batavia, to be off to the scene of action. At four o'clock that afternoon, I started with a party on a special steamer from Batavia, to take scientific observations. About midnight, we cleared St. Nicholas Point, which is the extreme northerly extension of the island of Java, next to the straits. As we rounded it, we saw ascending from Krakatoa about fifty miles away to the southwest, an immense column of fire and what appeared to be smoke. The sky was yet clear, for the most part, but we could see no apex to this column, whose composition changed as we watched it, steaming all the while toward the island. First it looked like flame, and then it would appear to be steam and again take the semblance of

A PILLAR OF FIRE

inside of a column of white, fleecy wool. In another instant these trailing, whirling masses of wool would hang from the very empyrean itself. All the while we heard the sullen thunderous roar which had been a fearful feature of the situation ever since Sunday morning, and was now becoming louder.

The terrifying character of the scene of which we were now in view can be imagined with difficulty. The ocean was as smooth as a mirror and our steamer moved ahead

with ease, at slow speed. But ever growing in intensity was the illumination spread from this lurid column, rolling from the northerly peak straight up to the sky, beyond the limits of human vision, flecked now and then with dark masses, constantly wrapped in and now entwining the furious commingling torrent of volcanic dust and smoke which I have described as looking like wreaths of wool. The diameter of that column I should put down at one and a half miles.

We had remained on deck all night, as usual in that country, and, without a word, watched, fascinated. The din was gradually increasing, until we could with difficulty hear each others' voices. From time to time, immense fragments of incandescent stone would be hurled up from the crater, three or four hundred feet into the air, when they would burst with a loud explosion. The hours passed quickly and dawn approached.

The sun rises in those latitudes at six o'clock. As its rays fell on the shores of Krakatoa, we saw them reflected from the surface of what we thought was a river, and we resolved to steam into its mouth if possible, with a view to disembarking. When we had approached to within three-quarters of a mile of that shore, we suddenly discovered that what we supposed was a river, was a torrent of molten sulphur. The smell almost overpowered us; we steamed away and made for the other side of the island, turning our bow to the windward. The lower of the two peaks on Krakatoa, had a crater, or cavity, for there were no real craters there, which as long ago as a century since had been reported in active eruption by a German vessel passing through the straits. It was the higher peak which was now emitting the

VAULT COLUMN OF FLAME

and pulverized pumice and steam which seemed likely to burn away the heavens themselves. The fires had already eaten into the edges of this peak so that it was now the lower of the two. In 1880, there had been earthquakes all along the shores of the straits, but Krakatoa showed no signs of awakening.

All the craters in that part of the world were, it is my belief, openings into a common submarine storehouse of volcanic energy. Krakatoa had been quiet until now for a hundred years, as far as I could learn.

This island, which will live in history with associations as lasting as those of St. Helena or Elba, was eight or ten miles long and four miles wide. A few fishermen lived on it, and on its mountain slopes remarkably fine rosewood and mahogany trees were found in abundance. Some of them were eight or ten feet in diameter, too big to cut. When we landed on the coast opposite to that along which the river of sulphur was discharging, we saw no signs of those inhabitants. The waves were washing the sandy shores. Four or five feet from the water-line rose a straight bank of powdered pumice-stone which was rained down constantly from the clouds that surrounded the column of fire. Everything human, everything natural, everything suggestive of life or growth had been annihilated from what had been a beautiful landscape. A hideous mask of burning stone and steaming ashes had been deposited over all. Trees three feet thick, and which must have been fifty feet high, were already nearly buried, their branches twelve inches thick sticking out here and there. Several of us landed, and I began walking inland. We sunk knee-deep in the loose pumice; it was the consistency of snow and hot. Our feet began to blister.

I climbed painfully up, walking inland in the direction of the crater, which I desired to measure with my sextant. At the third observation I made, I saw something trickling across the mirror of the sextant and discovered that the quicksilver had melted and run away.

I was more than half a mile now from the edge of the crater. My skin was roasting and cracking. The roar of the flames was so loud as to drown any other imaginable noise, save the detonations, now and then, of the bursting stones which would fly into fragments far up over our heads, it seemed, and sift their burning dust upon us. For the first three hundred feet from the edge of the crater, the ascending column was

ONE UNIFORM WHITE-HOT MASS

of clear flame of dazzling brightness, of such scorching energy as to blast us into a cinder did we dare nearer a perch. This column of flame was, as I have said, about one and a half miles in diameter.

I turned to retrace my footsteps and seek safety on the water. As I started to put my feet mechanically back into the prints they had made going up, I shuddered. The bottom of each footprint was red, aglow with fire from beneath. Here and there on the surface, I saw the tracks of a pig's feet, the creature evidently panic-stricken in its race for life. Every human being, every animal, every bird on the island of Krakatoa must have perished by that time, and if we had not increased our speed, the same fate might have been ours. At last we got aboard again, and from the steamer's deck I photographed that awful scene, the fire pump playing all around me the while, wetting down the rigging, keeping the double awnings moist, and saturating the side of the ship; it was the only way to keep her from taking fire. That had been necessary since daylight.

The steamer returned to Batavia, the roar from the great flame sounding continually in our ears, the glare from its fire gradually dimming in the distance. That roar and that glare lasted steadily day and night, until the 12th day of August. By that time everybody had gotten used to it and nobody spoke of it any more. We supposed Krakatoa would burn itself out after a while and rest again, perhaps for another hundred years.

In the meantime, I had taken up my residence in the city of Anjer, on the Strait of Sunda, west of Batavia. It had, with its surroundings from Merak Point to Bodjonegoro, about sixty thousand inhabitants. I lived in a villa, a mile back of the city, up the mountain slope. The city lay along the margin of the sea, the houses, of brick and bamboo, being nearly all one story high. Along the coast, at each side of the city, clustered groups of fishermen's huts, and their fishing boats by the score lay at anchor a short distance from shore. Over the low roofs of the city I could see far out over the strait to where the Krakatoa monster, thirty miles away, was belching out his

AWFUL AND NEVER-ENDING ERUPTION. It was Sunday morning. I was sitting on

the veranda of my house smoking a cigar and taking my morning cup of tea. The scene was a perfect one. Across the roofs of the native houses, I could see the fishing-smacks lying in the bay at anchor, the fishermen themselves being on shore at rest, as they did not work that day. The birds were singing in the grove at my back and a moment before I had heard one of the servants moving around in the cottage. As my gaze rested on the masts of the little boats, of which there were several score in sight, I became suddenly aware of the fact that they were all moving in one direction. In an instant, to my intense surprise, they all disappeared.

I ran out of the house, back up higher, to where I could command a better view, and looked out far into sea. Instantly a great glare of fire right in the midst of the water caught my eyes, and all the way across the bay and the strait, and in a straight line of flame to the very island of Krakatoa itself, the bottom of the sea seemed to have cracked open so that the subterranean fires were belching forth. On either side of this wall of flames, down into this subaqueous chasm, the waters of the strait were pouring with a tremendous hissing sound, which seemed at every moment as if the flames would be extinguished; but they were not. There were twin cataraacts, and between the two cataraacts rose a great crackling wall of fire hemmed in by clouds of steam of the same cottony appearance which I have spoken of before. It was in this abyss that the fishing boats were disappearing even as I looked, whirling down the hissing precipice, the roar of which was already calling out excited crowds in the city of Anjer at my feet.

The sight was such an extraordinary one that it took away the power of reason, and without attempting in any way to explain to myself what it was, I turned and beckoned to someone, any human being, to a servant we will say, to come and see it. Then in a moment, while my eyes were turned, came

AN IMMENSE DEAFENING EXPOSITION

which was greater than any we had heard as yet proceeding from Krakatoa. It stunned me, and it was a minute or two before I realized that when once more I turned my eyes toward the bay, I could see nothing. Darkness had instantly shrouded the world. Through this darkness, which was punctuated by distant cries and groans, the falling of heavy bodies, and the creaking disruption of masses of brick and timber, most of all, the roaring and crashing of breakers on the ocean, were audible. The city of Anjer, with all its sixty thousand people in and about it, had been blotted out, and if any living being save myself remained, I did not find it out then. One of those deafening explosions followed another, as some new submerged area was suddenly heaved up by the volcanic fire below, and the sea admitted to the hollow depths where that fire had raged in vain for centuries.

The awful surge of the maddened ocean as it rushed landward, terrified me. I feared I would be engulfed. Mechanically, I ran back up the mountain side. My subsequent observations convinced me that at the first explosion the ocean had burst a new crater under Krakatoa. At the second explosion, the big island, *Dwers-in-de-Weg*, had been split in two, so that a great strait separated what were the two halves. The island of Legundi, northwest of Krakatoa, disappeared at the same time, and all the west coast of Java, for fifteen or twenty miles, was wrenched loose. Many new islands were formed in that three, which afterwards disappeared. A map which I made not long afterward shows the change of the configuration of that part of the world.

I waded on inland in a dazed condition, which seemed to last for hours. The high road from Anjer to the city of Serang was white, and smooth, and easy to follow, and I felt my way along it in the darkness. Soon after I began this singular journey, I met the native postman coming down the mountain toward Anjer with his two-wheeled mail-cart. This carrier's vehicle was an iron box on an axle, running on two wheels, pulled by four ponies. I told the man what had happened and tried to get him to turn back, but he would not. I reached the city of Serang about four or five o'clock that afternoon, after having made one stop at a house on the way.

This residence loomed up on the side of the road, offering me, apparently,

A WELCOME REFUGE.

I rushed in thinking to find a relief from the intense heat under the shelter of its roof, but through the tiles of the flooring, little blue flames were flickering as I entered, and the house itself seemed like a furnace. The subterranean fires were at work even there, on the side of the mountain. Under the mass of flooring or masonry, I could not distinguish which, I saw the body of a woman in native garments. I rushed out horrified from this burning tomb. It was the residence, I learned afterward, of Controller Frankel, an officer of the government ranking immediately after the governor himself.

I staggered blindly on my way. When I reached Serang, I was taken into the garrison and nursed for two days. I was supposed to be a lunatic. I started up in my sleep a half-dozen times in the first night, uttering cries of terror. I was soothed by drugs and enabled on the third day to go to Batavia. Even then the extent of the calamity was not known in Serang. At Batavia I took the steamer for Singapore.

On my return, some time afterward, to the scene of this frightful experience, I learned further particulars of the force of the explosion. On Merak Point where the government had been blasting rock, were an engine and several boilers used for compressed air. All of these containing compressed air, had been hurled against the walls of the quarry, and absolutely flattened out like sheets of paper. In Lombok, on the southeast coast of Sumatra, a wooden man of war belonging to a Dutch Government, and two barks of two or three hundred tons each, one of them loaded with salt, had been thrown one hundred and fifty feet up the mountain side into the trees by the tidal wave which immediately followed the explosion. For days thereafter there was a thick coat of white ashes all over the island of Java.

THE GROUND WAS HOT

and crumbled to the touch. Every leaf and bit of vegetation had been consumed, and every creeping thing and living creature blasted and burned up. Six hundred

miles away it was necessary to burn lamps all day, and in the cities of Batavia, Samarang, and Soerabaya, the carriage lamps were needed out of doors, and gas indoors, for some time.

My investigations showed that there was one hundred feet of water where the city of Anjer had been, so short a distance from my villa, and that the coastline was just one and one-half miles further inland. It is there that the city of New Anjer has been built, and where all vessels for China, Japan, and Australia report to the regular telegraph station. Part of Prince island, about one-third of it, I should say, was obliterated, and the entire northwest coast of Java, including the fishing villages, was gone as far as St. Nicholas Point. It seemed to me to be a very moderate estimate, that one hundred thousand lives were lost in Java, and one hundred thousand more in Lombok bay, on the coast of Sumatra, just opposite. Several entire towns were washed away there. In Lombok bay the pumice-stone floated so thick upon the water that it reached a height of thirty-feet, and steamers could not penetrate it; so that it was some time before the news of destruction along the Sumatra shores was received in Batavia. The Brooklyn, an American man-of-war, came steaming into Anjer two days after, to report that from her decks thousands of broken bamboo houses, carbonized bodies, and floating masses of pumice-stone had been observed. At that time, the northwest coast of Java was buried under six or seven feet of ashes. A year later, an immense lump of pumice-stone, undoubtedly cast up by this explosion, was found floating in the Mediterranean, covered with barnacles. Pulverized pumice and ashes are known to have been carried many thousand miles, and to have been held in suspension in the atmosphere for years. The atmosphere over the American continent was filled with minute particles, which for weeks floated in the air. It would be folly to say that human intelligence will ever arrive at the accurate solution of the causes of this dread event, or even form a fair idea of its tremendous circumstances.—Jean Theodore van Gestel, in the *Cosmopolitan*.

Gown with Double Skirt.

The neat little figure is wearing a handsome camel's-hair gown with a double skirt.



and accentuations of velvet ribbon exceedingly becoming.—*Toronto Ladies' Journal*.

Intelligent Fish.

Fish have many times been taught to perform tricks and it would appear as if they had much more intelligence than is attributed to them. A gentleman we know once had two brook trout in a small aquarium in his private residence that would jump out of the water and take flies held between the forefinger and thumb, and would also ring a little bell when they required food. They would also leap over little bars of wood placed about two inches above the surface of the water.

It was a very simple matter to teach the fish these tricks. At first a little tower, containing a tiny, sweet-toned silver bell, was fastened to the ironwork of the aquarium, with a piece of string attached to the tongue of the bell extending into the water where the trout were. On the loose end of the string an insect or other tempting morsel was placed, which the fish would at once seize, and pulling the cord, the bell in the tower would naturally tinkle. After this had been repeated several days the fish were left without food for some little time until they made the discovery that they could obtain it by pulling at the string to which the delicacies had been attached. This they did ever afterward when they were hungry, and as that was nearly all the time, the little bell was constantly tinkling as the fish were continually pulling the cord. It was quite a pretty and novel sight.

Enamelling Process for Boilers.

The proposed plan of preventing the incrustation or corrosion of boilers by means of a certain enamelling process has for some time engaged the attention of engineers, and favorable results are said to have attended its use. According to the account given of this method, the interior surfaces are coated with a deposit in the form of a smooth black film or enamel, similar to an electro deposit thick enough to protect the metal underneath from corrosion, and so thin that the boiler loses none of its steam generating power; the application is entirely simple, the material employed being injected into the boiler through a cock of lubricator pattern at such times as desired, the surface below the water level thus becoming coated with the enamel. It is claimed for this process, amongst its various advantages, that the enamel is impenetrable by acids, protects the boiler from the corrosive agents contained in almost if not all waters, prevents incrustation, does not harm the boilers, and is but of slight cost.

MR. AND MRS. BOWSER.

"I wish," said Mrs. Bowser as she helped Mr. Bowser on with his overcoat the other morning, "I wish you would drop this postal card in the box on the corner as you go out."

"Um!" replied Mr. Bowser as he received it. "Who is Mrs. White of 172 Larkins Avenue?"

"I want her to help me clean house for three or four days."

"Clean house, eh? How many times do you clean house in a year?"

"In the Spring and Fall. What's the matter?"

Mr. Bowser removed his hat and gloves and overcoat in a very deliberate way and then replied:—

"We don't want Mrs. White of 172 Larkins Avenue to assist in house cleaning."

"But I—I—want—"

"And we are not going to have this house turned wrong side out for a couple of weeks. Not being very busy at the office, I'll do all the work for you this forenoon."

"Why, no one can clean house in half a day."

"Can't eh? We'll see about that. I'll get my old clothes on and show you a trick or two about housecleaning. This idea of fooling around for a week or two is all nonsense."

"Mr. Bowser, please listen to me," she pleaded. "All the furniture must be rubbed over, the pictures taken down, the woodwork wiped, the carpets swept with salt and the ceilings brushed. It will take two women—"

"It will take two women two weeks," he interrupted, "while a man can do the same amount of work in two hours. It's all in knowing how to go at it. Even my mother, whose spirit is now in Heaven, had no method in housecleaning."

"I—I think we'll let it go till Fall," stammered Mrs. Bowser.

"No, we won't. I'll be with you in five minutes, and if we don't have this house shining like a new dollar from top to bottom before noon I'm no hustler."

"But—"

"That will do, Mrs. Bowser; that will do," he said as he turned on her. "I own this house. I run this house. I am the head of this family. I was helping to clean house before you had cut your first tooth. I'll be down in five minutes and begin on the parlor."

When he came down, after getting into his old suit, the cook informed him that Mrs. Bowser had run across the street to see a sick neighbor, but that he could go right ahead with his work. She brought him up the stepladder, and as he stood it in the middle of the parlor and spat on his hands and looked around he chuckled:—

"I'll say thirty minutes to clean this room spick and span and give the old lady a surprise party!"

He seized the sofa and rushed it into the back parlor, followed by the chairs and stands, and in seven or eight minutes the floor was clear. Then he placed the stepladder to take down the first picture. He had just lifted the wire off the hook when the ladder slipped, and there was a crash, and a smash, and a jingle which brought the cook up stairs to find Mr. Bowser lying in a heap on the floor and to exclaim:—

"Goodness to mercy, but I thought the whole house had fallen into the cellar! How did it happen, Mr. Bowser?"

He slowly got up, looked from the stepladder to the floor and felt the back of his head and firmly replied:—

"I stepped off. Bring me salt, and a broom and a rag."

By the exercise of due caution he got the other pictures down without accident. The girl brought the things and stopped for a moment to say:—

"Nobody would ever suspect that ye knew how to clean house so beautifully. Don't them winder curtains come down before you swape and dust, and shan't I hold the ladder while ye climb up?"

Mr. Bowser said he could manage alone, and the cook retired to her kitchen. Mrs. Bowser had said the carpets must be swept with salt. The cook had brought a pail holding six quarts, and he sowed it all on to the last ounce to make a good job of it. She had said the furniture must be rubbed. He hunted around and found a bottle of sewing machine oil, thinned it down with witch hazel and went over every piece of furniture in six minutes. All the window curtains needed was a little dusting, and getting a firm grip on the broom handle he proceeded to pound and whack until satisfied that they were thoroughly cleaned.

The cook came up with a feather duster, and Mr. Bowser decided to begin his dusting on the mantle cabinet. He placed the stepladder and climbed up and lifted the ornaments with one hand and worked the duster with the other. He had mentally decided to finish with the cabinet in just one minute, devote two minutes to the ceiling, two more to sweeping the carpet and 30 seconds to running in the furniture, when he lost consciousness. He had a faint recollection of seeing the parlor floor suddenly jump up six or eight feet, and of feeling that he had been hit, but he wasn't really sure of anything until he heard the voice of the cook saying:—

"Don't blame me, ma'am. The Doctor was not at home, and I had to wait 15 minutes."

Then he heard Mrs. Bowser inquiring:—

"Doctor, do you think he will be a cripple for life?"

"It's hard to say," replied the Doctor. "He struck on his head and came down with his legs bent up under him, and the spine may have been badly injured. What on earth was he prancing around on top of a stepladder for?"

"He was doing housecleaning. Poor man! I can't lay it up against him that he's nearly ruined my curtains, broke a chair, smashed the cabinet, destroyed nearly all the breakable ornaments and has given me a week's work to clean the furniture and carpets."

"Is this the Bowser I read of in the newspapers?"

"Yes, sir."

"Always blaming his wife and threatening to get a divorce?"

"Yes."

"Well, I'll do all I can for him, but he's been served just right! Keep him as quiet as possible. If he says anything about his lawyer seeing your lawyer, alimony, custody of the child, put up job to kill him off, etc., pay no attention to him, as he will not be in his right mind for the next ten days!"