THE TOWER OF PELÉE

I

MARTINIQUE REVISITED AND A FOURTH ASCENT OF PELÉE

Nor quite a month after the first anniversary of the destruction of Saint-Pierre, I again set foot on Martinique soil. The silent city remained much as it was at the time of my last visit, nine months before. A little more ash had accumulated here and there, and some of it had been taken off elsewhere; but the ruins were the same battered, crumbling walls, unchanged save that they had gained in color through the washing off of the ash-mud that plastered and cloaked their vertical sides. In a few places excavations were being made to recover "treasure" or to locate sites, but the prowlers among the dead were few and what was recovered was in most cases insignificant. I turned over some rubble-masses beneath which "caked" and burnt papers were projecting, and found that I was dealing with a lesson in geology, and, strangely enough, with one that taught of volcanoes and volcanic phenomena—several pages of manuscript, possibly escaped from the Lycée or the Communal College, covered with teachings of Vesuvius, Cotopaxi and Etna (and of Pelée?). It may be that those papers were dictated by the impending storm of Pelée, but who can now tell? The fragment of one of the few books recovered from Saint-Pierre—whose precious brown pages I owe to a friend—deals likewise with volcanic phenomena. It is the "L'Enfant du Vésuve," supplemented with a very full account of the destruction of Pompeii and with a carefully rendered translation of both of Pliny's letters.

One significant change had come over Saint-Pierre. It was no longer an absolute desert, for little colonies of ants and other insects were inhabiting the ruins and the land-snail had come to live with them. Green creepers and many plants with bright flowers here and there hung about the battered masonry, and from some of the old gardens rose up stocks of the chou Caraïbien and the banana. And
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even the few trees that had been left standing on the surrounding heights, and thought to be dead, had sprouted out new leaves and given a new sunshine to the landscape. Well up on the volcanic slope, beyond the Roxelane, and quite to the Rivière des Pères, these signs of returning vegetation were apparent, and on one side of the Roxelane itself everything was green. But, after all, it was more the immediate foreground that gave these signs of resuscitation, for farther beyond, and below the hanging volcanic cloud, the grays were as gray as ever, and the valley of the Rivière Blanche, choked with the immense amount of débris that had been thrown into it, was white like snow with the new ash that is periodically being swept over its course.

At Morne Rouge, which fell in the storm of August 30, not a house remained inhabited. The beautiful church under whose partially lifted roof good Père Mary had sought refuge for nearly his last hours, still stands with its foot in the ash. My attendant climbed into the belfry and tolled the bells that hung uninjured from the posts. It was the voice in the wilderness, for there were none to listen to it but ourselves. Perhaps far away on the hill-sides, where specks of cottages appeared in the surrounding green, some may have recognized the beautiful resonant tones.

The exquisite woodland that previous to August 30 bordered most of the road between here and Ajoupa-Bouillon, stood out now as ragged tree-trunks, spectres in the destroyed landscape, with naked arms and upturned roots, begging, as it were, from the new sunlight that surrounded them. Here and there the eye fell upon the returning fronds of the tree-fern and clumps of bamboo, on the melastome and broad-leaved heliconia; but they were merely visions of what had been before. Miles away over the landscape the eye still caught the images of the wreck and ruin which that fearful blast of the late August day had wrought. Mountain slope and valley were swept alike, and even upon the ascending heights beyond the Capot the scars of destruction remained luminously implanted. A wayfarer at Ajoupa-Bouillon, who had lost all that was dear to him, pointed out to me a spot on the open road where five of the village inhabitants, who had taken refuge under a culvert, succeeded in weathering the storm, while almost everything about them was hurled to annihilation. I myself noted with considerable interest that many of the wayside shrines, whose faces were turned somewhat off from the direct path of the tornadic storm, retained their contents almost undisturbed. The goblets, though filled
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with ash, were intact, and the images were largely so. At this point, evidently, the destroying blast had lost much of its force, but on other lines, for far distances beyond, there would seem to have been little diminution to its power.

From another of the village inhabitants I obtained a graphic account of the awful hours that preceded the fatal explosion,—hours that followed immediately upon the time when my own little party left the upper volcanic slope,—of the black, but luminous night, the deafening roar of the volcano, and the final and terribly swift oncoming of the destroying cloud. I was especially interested in his description of the electric characteristics of this cloud, the short and rapid discharges and incessant crackling being, as the narrator stated, only comparable to feu d'artifice, an observation that had already before been made in connection with the Pelée cloud of May 8, and which only further confirmed me in the belief I have elsewhere expressed that electric discharges must have played an important part in the destruction of human life, both here and at Saint-Pierre.

As on my former visits, I made my head-quarters on the north-eastern side of the island, to windward of the volcano. The great sugar-plants of Vivé, Leyritz, and Basse-Pointe had once more set their wheels going, and it seemed that for some time at least a cheerful life might again replace the dismal depression which months of despair had brought on. The old score against the volcano was for the moment wiped out. The proprietors and gérants had tired of the uncertainties of volcanic action, and between abandoning their estates absolutely or transporting what little could be transported elsewhere, and remaining to face possible death from an uncertain eruption, they chose the latter course, as perhaps most persons in their unhappy position would also have done.

My window in the capacious Clerc mansion at Vivé opened out upon a clear prospect over the summit of Pelée, and at times when there was little "volcanic cloud" hovering about, which was much less often the case than the reverse, it gave a fine view of the surrounding giant obelisk. Several times during the nights of my stay I was tempted to pass to the window and follow with a powerful glass the activities of the volcano. There was, however, little beyond landscape prospect to reward the search, except on the evening of June 12, when the base of the tower, in its southwest corner, was brilliantly luminous, being fed with volcanic fire through the interstices and rifts that pene-
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trated the column. It was a beautiful spectacle. The fiery form appeared shortly after sunset, and it prompted me to make an ascent of the mountain on the following morning.

On June 13, in company with one of the officers of the French Scientific Commission, I made my fourth ascent of Pelée. The passing night promised everything. A few high clouds hovered about the blue and receding mornes that stretched off towards Carbet, but over the volcano itself there was nothing, and the great obelisk, its base fiery red with molten lava that was being poured into it, stood out in bold relief against the green-blue western sky. We left our quarters early, so as to gain upon the clouds that viscously gather about the summit; but the clouds had preceded us, and already at the breakfast hour, by which time we had reached the former summit, everything was wrapt in cloud and mist, and little was visible beyond ourselves. We succeeded in steering a course across what had before been the basin of the Lac des Palmistes, and in a few minutes stood upon the edge of the great crater. Everything was gray within,—not silent, however, for avalanches of rock were being precipitated and tumbled about in ruthless manner, and an occasional ominous roar told that the spirit of the mountain had not entirely departed. For the better part of six hours we vainly strove to penetrate the sea of cloud and fog that hung ahead of us. Each coming gust seemed to give us the chance for which we were waiting, but the rising crater-vapors kept the basin full, and even under a clear sky they allowed only “memories of a landscape” to escape. Although in no way unbearably hot, I found the crater rim uncomfortably warm and humid; it seemed to me more so than on my earlier visits. The actual temperature was only 85 degrees, however.

We found the entire depression of the Lac des Palmistes filled up and over by volcanic ejecta,—sand, pumice, and boulders, perhaps in greater part the product of the August 30 eruption. There was now a gentle and nearly uniform slope up to the crater-border, and what remained of the Morne de la Croix was hardly more than a rising knoll or knob. The split-boulders, or what have been called “bread-crust bombs,” were very numerous, measuring in all sizes from small balls to masses two and three feet in diameter, and were lying freely scattered around. What surprised us greatly were the swarms of a bottle-green coccinella that had made a home on the summit. The tiny insects appeared to be about in myriads, and in an
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instant almost our clothing was covered by hundreds. What they found on the barren summit to attract in this manner is one of those mysteries of nature which we found impossible to fathom. The species, which we failed to determine, was probably the common form of the island. More singular yet, we came across a stray bull-frog of large size, whose excursion to the top summit was equally inexplicable.

From the crater’s edge we could at times look down to the very bottom, but the shifting vapors were such as to give us only flashing vistas, and for many hours we could frame no distinctive picture of what we saw. Steam jets were issuing at many points, and with these curled out the blue puffs of sulphur. In a very rough way I estimated that the depth below where we were standing could not have been less than 300–350 feet, which is very nearly twice what had been assumed by some of the observers of the French Scientific Commission. A later photographic measurement would seem to confirm my determinations.

The clouds continued to move, to break, and to unite, and for a long time it seemed as though we should be obliged to miss the object of our search entirely. There were brief spaces of atmospheric lucidity, but they were in the wrong quarter for us, and only showed up with transcendent beauty the landscape that was back of us and down the mountain. We were quite close to the edge of the crater, hardly three feet intervening, and vainly peered through the sea of mist and vapor to obtain a single glimpse of the avalanches of rock that were being tumbled down ahead of us, seemingly in space and from space, whose roar went out like the distant flow of thunder. We listened and heard everything; we strained our eyes and saw nothing. Quelle mauvaise chance! uttered my associate, and I echoed it most heartily.

Shortly before two o’clock the opportunity for which we had so impatiently waited seemed finally to arrive. Clouds and vapors died down to one side, and the great tower, its crown hanging at a dizzy height above, began to unfold. Piece by piece was added to it—purple, brown, and gray—until at last it stood abreast of us virtually uncovered from base to summit. “Look!” I shouted to my companion, and my words failed me for the magnificence of the view that presented itself. The spectacle was one of overwhelming grandeur, and we stood for some moments awed and silent in the shadow of this most impressive of mountain forms. Nature’s monument dedicated to the 30,000 dead who lay in the silent city below, it rose up a huge monolith, 830 feet above the newly constructed summit of the volcano, and
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5020 feet above the Caribbean surface,—a unique and incomparable type in our planet’s wonderland.

We spent about two hours and a half on the summit after the first rifting of the clouds, and had thus a full opportunity to study from most sides, even if not absolutely close at hand, the general characteristics of the giant tower and of its setting. M. Guinoiseau, who had at this time made the ascent of the volcano perhaps more than twelve times, was as enthusiastic over the scene as I was myself; but he reported that the volcano was in an unusual state of eruptivity, a not exactly comforting assurance to the plain folk who had already come to know the burning mountain. However, we saw little to disturb us in our studies, and it was rapidly nearing five o’clock when we began our descent of the cindery slopes. Shortly before seven o’clock we again entered the hospitable portals of the Usine Vivé.
II

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No other name, it seems to me, more appropriately conveys the picture of the giant core of rock, nearly 1000 feet in height at the time of its greatest development and 350-500 feet thick at the base, which Pelée had bodily lifted and pushed out from its summit during a period of a full year and more. This extraordinary obelisk of lava, like a veritable “Tower of Babel,” whose apex at the time of my visit, the middle of June, 1903, reached a position 5020 feet above the sea, transfixed the newly-formed cone of the basin of the Étang Sec, and rose to all purposes vertically above it, the two structures, products of the eruptions beginning in April, 1902, having a full height of approximately 2300–2400 feet. As seen from the east-northeast, or the quarter of Assier and Vivé, it presented the aspect of an acute pyramid; seen from the south or southwest it gave the appearance of a conical spire, complicated by secondary spires, needles, or fingers, and showing a split or indented apical summit; while from the northeast and north it rose up a gigantic and nearly parallel-sided tower or fortress. From whichever side seen, it was an object of sublime magnificence; and in its condition of vapor clouds blowing out from its base and from the cone that supported it, with blue sulphur smoke curling its way along with these, it presented a spectacle of almost overwhelming grandeur and one of terrorizing effect which could hardly be matched elsewhere. None of the grand scenes of nature which I had before seen—the Matterhorn, the Domes of the Yosemite, the colossus of Popocatepetl soaring above the shoulder of Ixtaccihuatl, or the Grand Cañon of the Colorado—impressed me to the extent that did the view of Pelée’s tower, from the crater-rim, on the afternoon of June 13.

The tower was arched slightly in the direction of Saint-Pierre,—i.e., towards the southwest, where the surface was scraggy, and apparently scoriaceous or slaggly, the result, doubtless, of the numerous basal eruptions which took place at or near the point of contact with the supporting cone. The surface on the opposite side—that turned
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towards Assier—was, on the other hand, smooth, almost polished in places, and longitudinally grooved from base nearly to summit. This smoothness and graving of the surface were certainly due to attrition against the encasing rock or “mould” which formed the wall to the channel of exit, and the curving over of the mass to one side would seem to point to extrusion from beneath a somewhat vaulted or curved casing. One could well compare the structure and its method of escape to a core of paint issuing by pressure from an oil-tube. The general surface-covering was in color ruddy gray, brown and purplish in part, but on the smooth face it was nearly white, a condition probably in some way associated with the rubbing on that side.

As to the fundamental and inner construction of this remarkable volcanic appendage our knowledge remains in a measure conjectural. As seen with a powerful glass from a point of nearest approach, perhaps 700 feet, the rock appeared “burnt-out,” like a furnace-product; and the noise given out by the falling particles and boulders was generally like that of falling clinkers, which might have led to the supposition that the mass was on the whole cavernous. But its rigid adherence and resistance to a prodigious crushing strain lend little countenance to this view. The noise from the more imposing discharges of dejecta was like that of rolling thunder, at times barely distinguishable from the roar of the volcano itself, and could hardly have been produced otherwise than by the avalanching of compact rock.

It has been surmised, or at least suggested, that the interior of the tower might have been hollow, with fluidal lava, hidden from view by the massive outer walls, contained within. This condition is not conceivable. Had such a chimney with an enclosed flowing magma really existed, there would certainly have been lava overflows at one time or another. On the other hand, that the tower was rifted and had irregular passages through it or through parts of it, into which lava was at times injected, is certain; and the members of the LaCroix mission on more than one occasion noticed areas and lines of incandescence in the basal portion of the core, which they associated with flowing lava-masses. On the night preceding my fourth ascent of the volcano, June 12, 1903, the southwest base of the tower was resplendently luminous, made so either by actually rising lava or by a partial remelting of that portion of the structure. From a distance of a few miles, whence this magnificent spectacle was seen, my powerful glass failed to determine which of the two conditions existed,—a matter
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of little consequence, as in either event molten lava was in close association.

That some of the rifts completely traversed the tower from base to summit, I had the opportunity fully to satisfy myself, for on the morning of June 15, when skirting the northern and western shores of the island, a thin steam-pennant could be seen to be continuously issuing from the apical summit; in other words, the volcano was gently "smoking" at the top. The issuing vapor was perfectly white, and it seemed to carry little or no ash with it. From the same apical summit a number of incandescent balls are reported to have been shot out on the night of March 26, 1903.

The ascent of this remarkable core of rock, the general nature of which was first determined by Prof. Lacroix, was due to processes similar to those which produce the outwelling of lava in the ordinary form of volcanoes,—i.e., to interior volcanic stress. Despite its colossal dimensions, the tower was heaved bodily upward, receiving new accretions of matter almost entirely from below. The most cursory examination of the relations existing would immediately point to this form of growth and development, but the carefully conducted angle-measurements and observations of contour made by the representatives at two stations of the French Scientifio Commission leave no possibility for doubt in this matter, and they further furnish us with data touching the rate of growth. The consideration of the depth to which this giant monument descended solid into the volcano would be interesting were there any way of reaching the problem, but for the present there would seem to be none such. It is perhaps enough to say at this time that this depth must have been considerable, otherwise the column could not have stood through the exploding condition of the mountain; the depth, again, may have been very great. On the other hand, the problem cannot lose sight of the fact that molten or incandescent lava did at times rise quite to the level of the insertion of the monument in its base.

It is a matter of some importance geographically to know when this great tower of rock first appeared and to ascertain through this fact its relation to the great eruptions of May, June, July, and August (1902). Prof. Lacroix, in an article published in the Dépêche Coloniale (April 30, 1903), states that the basal cone of the volcano had been terminated by a needle since the middle of October, and presumably this is about the period when it was first seen by him. But there can
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hardly be a question that its formation or first appearance was of much earlier date, for on August 24, 1902, almost a week before the second death-dealing eruption, a vertical (although comparatively short) needle was distinctly seen by me from the southwest side, and it appears in my photographs taken on that day. Indeed, I remark in my report,* that it seemed to me likely that the two glowing masses of fire which shone down from the summit, like red beacon-lights, in the morning of August 22, emanated from the two (incandescent) horns that capped the summit of the mountain. One of these protruding masses, or “horns,” as I have called them, was seemingly set at a broad angle to the other.

In an earlier report on my observations and experiences,† published shortly after my return from my first visit to Martinique, use is made of a drawing of the crater by Mr. George Varian, an artist associate who was with me when we first reached the rim of the still very active crater, and whose extreme faithfulness in the delineation of nature I frequently had occasion to admire. In this drawing a great core of rock is made to appear centrally in the crater and rising somewhat above the crater’s rim. In my own description (p. 365) I refer to these points in the crateral structure as “the central core of burnt-out cinder masses, topped by enormous white rocks, whose brilliant incandescence flashed out the beacon-lights which were observed from the sea some days after the fatal 8th, and even at our later day illumined the night crown of the volcano with a glow of fire.” When at that early day we stood on the crater’s edge, the activity of the volcano was still such that we could obtain but momentary glimpses of the interior of the crater and of the crater-walls, and it was impossible to shape constructively the relations of the parts as they passed before us in fleeting shadows. After seeing one of my own photographs and the photographs of investigators who were on the volcano after I had left it, I became doubtful as to the accuracy of Mr. Varian’s drawing, the more so as it depicted a structure that could not be brought into relation with any known volcanic feature, and in my later publication I thought fit to omit the illustration. There is no doubt in my mind at this time that the sketch of my artist associate was an accurate one, and that “the central mass of jagged white

* “Mont Pelée and the Tragedy of Martinique,” p. 163.
† McClure’s Magazine, August, 1902.