

## The Volcano Cabinet

Di Tom Gidwitz



In December, 1903, living on a small trickle of royalties from his electric motors, Perret took a room in Torre del Greco, a town of 30,000 on the Bay of Naples's eastern shore. It is one of more than two dozen towns and villages that ring Vesuvius like beads in a necklace, a chain of humanity that the mountain continuously

destroys. Herculaneum is two and a half miles northwest of Torre del Greco; Pompeii lies six miles southeast. Beyond Herculaneum, in Portici, on a street corner in the middle of town, Perret could read an ominous carved marble plaque set on a monument of volcanic stone.

It had been erected fifty years before Pompeii's discovery, in January, 1632, on the order of the viceroy Emmanuel Fonseca y Zunica, Count of Monterey. The previous June, Vesuvius had awoken from a 500-year nap. After six months of earthquakes, the mountain indulged in two days of death, flooding towns with hot ash and killing six thousand. Set in the midst of the then still-smoldering landscape, but now almost lost in swirling traffic, the viceroy's chill warning still stands:

Descendant, descendants  
It is about You  
Today illuminates tomorrow with its light.  
Listen:  
Twenty times since the sun rose if  
History does not lie,  
Vesuvius burst into flames  
Always exterminating those who tarried.  
I warn you so that it does not catch you  
wavering.  
This mountain's womb is heavy with pitch  
Alum, iron, sulfur, gold, silver,  
Saltpeter, water.  
Sooner or later it catches fire and, with the aid  
of the sea, it delivers.  
But before delivering  
It shakes itself and it shakes the ground  
It smokes, reddens, flares up;  
It horribly ravages the air  
It howls, roars, thunders, chases its neighbors  
away.  
Run away while you still have time.  
Here is flashing, exploding, vomiting,  
Liquid matter mixed with fire  
Which flows headlong, cutting off escape for  
those who falter.  
If it reaches for you, it is over: you are dead  
Killed by a fire that seems to become more human  
as it becomes more  
Superabundant.  
If feared, it despises; if despised,  
it punishes the incautious and greedy  
who care more for their houses and furnishings  
than their lives.  
If you are wise, listen to the voice of this  
stone.  
Do not care about your home, do not  
worry about belongings, run away without delay.

Perret paid no heed. He surrendered to Vesuvius as soon  
as he laid eyes upon it. As he trudged its rough hide  
or watched it from afar, his mind's gears meshed. He  
was, at last, at home.

Perret strove to decipher the autobiography that Vesuvius wrote in layers of lava, pumice, and dust. When he made his first trip to the mountaintop in January, 1904, he looked down into a crater nearly five hundred feet deep, divided in two by a low wall of stone, with a pool and fountain of lava at the bottom and intermittent explosions that lofted ash one hundred feet over his head. At night, during his first months, he mused on the halo of colored flames that danced just within the crater rim - blue green as they burned hydrogen, hydrogen sulfide, carbon monoxide or methane, and here and there flashed sodium's tell-tale yellow.

Vesuvius is a geological marvel with which Neapolitans have formed a strained but near-familial bond, as if it were some sort of rogue relation, a 4,203 feet tall cousin of graceful beauty and deadly fits. It lies to the east of Naples, where it catches the sunset light and commands one's attention as might any large, moody creature to which humans will be forever beneath notice. Bounded by the shore of the Bay of Naples to the south and west, it is cupped on its northern quarter by a sloping crescent of ruined mountain called Monte Somma. Monte Somma curves around Vesuvius like a cowl, a 3,700 foot high remnant of an older mountain that had stood upon that very spot until 79 AD, when the eruption that destroyed Pompeii blew most of it away and built the present cone.

Perret liked to call Vesuvius "the cabinet volcano." It is a specimen convenient for study thanks to its relatively small size and proximity to Naples - even before the invention of the motor car one could reach the summit and return to the city in a day.

Vesuvius has a well-documented history, and its lava lies in the mid-range of volcanic viscosities: sometimes thick and pasty enough to plug its vent until the pressure mounts and an explosion blows it open, at other times thin enough to flow readily for years. In Perret's day it provided a full repertoire of volcanic behaviors - flaming gas, steaming vapors, explosions,

lava jets, ash clouds - in an endlessly varied show perfect for a budding volcanologist.

Vesuvius is part of the most famous and well studied volcanic landscape in the world, a geologic war zone where the earth slowly bubbles like a pot of boiling stone. The region has been bursting with volcanic activity for at least two million years. It is crisscrossed by a diagonal mesh of countless earthquake faults, lines of weakness where lava punches its way to the surface.

At the time of the dinosaurs the region was the floor of an ancient sea whose sunken shells and fish bones now form a thick subterranean limestone layer. When Vesuvius erupts the rising gas and magma ripping through this bedrock strips free hunks of limestone and tosses fossil shells into the air with the volcano's red hot ash.

West of Vesuvius, on the Bay's arching northern shore, is the Campi Flegrei, the "Phlegrean Fields," named from a Greek word meaning "to blaze." The ancient Romans said this crater-pocked zone was where giants, dislodged from the clouds by bolts of lightning, fell to ground; buried beneath the surface, they bled hot, sulfurous waters. The Solfatera, a shallow six-hundred yard wide crater that seethes with bubbling gray pools of boiling water, is but one of dozens of volcanic vents that the Romans used for spas and baths. All around are temples and villas, including that of Nero himself. In another crater by the shore lies Lake Averno, once said to be the entrance of Hell and so poisonous that birds flying through its vapors fell dead from the sky. Averno was wide enough to serve as a harbor for the Roman navy after the Roman general Agrippa carved a canal through the crater walls to the Mediterranean in 37 BC.

Magma surges and sinks beneath the Campi Flegrei, and the surface swells and falls in response. Near the shore in Pozzuoli, at the Bay's western end, sit three marble columns on a broad flat platform. Known as the Temple of Serapis, the original twelve-column structure

was eighteen feet above the sea when built in about 100 AD. In the last two thousand years these columns have sunk as deep as fifteen feet and returned to their original height. The surviving pillars are now ringed with three broad bands that can only have formed underwater, including a seven-foot wide strip of holes bored by hungry seaworms.

Three miles east, during two September days in 1538, a stretch of seashore suddenly bulged twelve feet in the air. As the waters retreated, residents scooped up flopping fish stranded on the sand, and royal decrees promptly gave the territory to court favorites. But two days later the little hill's top blew open, and Monte Nuovo, a new volcano, was born. For five days it smoked and vomited hot rock, growing large enough to consume a village, a castle, and the local spa. It was a mountain three miles around when it breathed its last. Monte-Nuovo-page



Every few thousand years there are eruptions so large here that the magma reservoir deep beneath the earth empties and collapses to form a volcanic landform called a caldera, a relatively flat bottomed sunken pit with sides that can be straight as a bucket's. Two calderas cradle the Campi Flegrei. The largest is more than eight miles across and formed in the midst of the last Ice Age, when the earth split and so much magma showered out -- nineteen cubic miles -- that a patch of ground four times the size of Manhattan collapsed in a

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depression almost half a mile deep. Another, smaller eruption twenty thousand years later draped the landscape with a distinct yellow stone called Neapolitan Yellow Tuff. You can see it in quarries, spread through the ground like a humongous layer of icing in a gigantic cake. It covers 386 square miles, in places hundreds of feet thick. The locals have cut out countless tons of it to wall the buildings that glow so warmly in the Mediterranean sun.

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