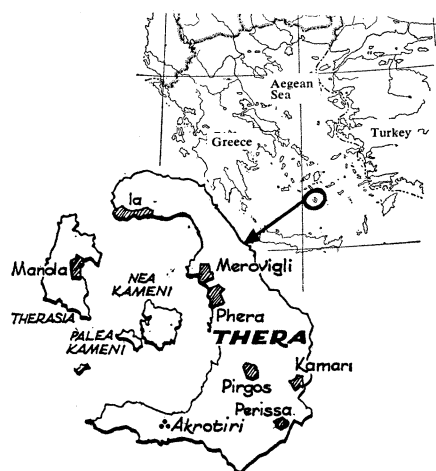


# Atlantis Beneath the Vineyard

*Cities died, myths were born  
when an eruption destroyed Santorin.*

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Vineyards on Thera thrive over a bed of volcanic ash, beneath which lies a city buried in 1500 B.C.



Ancient volcano burst on Thera.

In the Sea of Crete, some 3,500 years ago, a volcano rumbled, an island shuddered, an entire population took to boats, grabbing up whatever was precious and small enough to carry.

Whether or not they survived is a fact lost in time, but a rich city they left behind, entombed in ash for 3,500 years, is coming to life again on the island of Thera in the Aegean Sea. Its discovery is hailed as the most important archaeological find since Pompeii.

The immense explosion that blanketed Thera not only destroyed the powerful Minoan empire, it probably sank the continent of Atlantis, created huge waves that smashed coastal towns around the Mediterranean, caused the collapse of prominent ancient cities thousands of miles away in India and Turkey, and ironically, may have paved the way for the Golden Age of Greece.

Proof of the devastating eruption came to light this summer as Greek and American scientists discovered a ghost city of many tall buildings sealed beneath thick layers of volcanic ash near

the modern sea village of Akrotiri on the southern coast of Thera, some 60 miles north of Crete.

Digging in an area a half-mile square, scientists uncovered remarkably preserved houses two and three stories high. Handsome frescoes were uncovered on upper floors, and painted pottery jars for oil and wine were found in the basements. Although remains of wild and domestic animals were unearthed in the area, the absence of human bones and of gold and treasure indicate that the Minoans on that island may have had warning and escaped, taking what they could carry. Some authorities believe the Minoans fled to less-civilized Greece where they introduced their art and alphabet and helped bring about the Golden Age, thus influencing all Western culture.

The existence of the Minoan ruins had been suspected nearly 100 years ago, when parts of ancient buildings began appearing as workers cut out blocks of hardened ash—called tephra—for building material. The size and scope of the eruption became more ap-

parent when volcanic debris was charted in wide areas on the floor of the eastern Mediterranean, first by a Swedish oceanographic expedition in 1947-48, then in the mid-1960s by the *Vela*, vessel of the Lamont Geological Observatory of Columbia University. In 1966 seismic and magnetic profiles were made of areas surrounding Thera from the Woods Hole Oceanographic Institution ship *Chain*.



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Excavators uncover Minoan ruins.

From these oceanic probes and archaeological excavations, scientists have pieced together part of the story of the Thera eruption.

There may have been a cluster of active volcano cones on what was then called Santorin, in about 1500 B.C.—as many as a dozen, says James W. Mavor Jr., geologist at Woods Hole who recently returned from a summer's excavation at Thera. These cones erupted at different intervals of time and in different places, he says, drawing his conclusions from the various layers of tephra and pumice found throughout the island, sometimes as deep as 140 feet. The entire volcano finally erupted with a roar that may have been heard as far away as Scandinavia. It exploded and collapsed, part of it sinking into the winedark sea, leaving a 1,300-foot-deep lake or caldera about eight miles in diameter, around which stand three jagged islands today—Thera, Therasia and Aspronisi. The volume of ash, lava, gas and dust expelled by Santorin has been estimated to be five times that of Krakatoa, perhaps the most devastating volcano eruption in history. Krakatoa blew up in 1883, destroying nearly 300 Indonesian towns and killing some 36,000 people.

The Santorin eruption, by filling the atmosphere with dust and gas, may have changed the climate drastically, making agriculture almost impossible. One of the cities at Troy was abandoned about that time, as well as highly developed cities of Harappa and Mohenjo-Daro in the Indus Valley of India. More precise dating is still needed. The Greek Government, under the Archaeological Society of Athens directed by Dr. Spyridon Marinatos, is undertaking a 10-year program for further exploration.

Scientists already seem convinced that the sunken Santorin is the famed Lost Atlantis which Plato described in his Dialogues, "Critias" and "Timaeus." Plato took his material from Egyptian records that had been made from the words of Solon, a Greek poet who had visited Egypt in exile some 200 years before Plato. Plato described the circular island as having three naturally formed rings of harbors. Recent oceanographic probes indicate a suggestion of these inner harbors at Thera. For some obscure reason, Plato calculated dimensions of Atlantis too large to be located in the Mediterranean—so he assumed the land must have sunk beyond the "Gates of Hercules" or Gibraltar in the "Ocean Stream." By reducing Plato's dimensions of the city by a factor of 10, scientists found Atlantis would fit in the hole left by Santorin. Other parts of Plato's text confirm that the island was located in the eastern Mediterranean. ♦

#### SPARROWS AND EAGLES

### Airlines: a Massive Le Mans

The most prestigious auto race in the world is the 24-hour French marathon known as Le Mans. It is open to big cars and small, and the top speeds of the big machines that always win are often twice those of the cars in the smallest classes. Yet for years there have been those among the world's ranking drivers who have steadfastly refused to race at Le Mans, and even those who race and win hate the event and call it a death trap.

They object to the very diversity that gives the race its color. Hurtling at 190 miles per hour down a straight-away dotted with other cars moseying along at half that speed is insanity, the holdouts declare.

A similar problem exists in the air, where 600-mph jetliners share the sky with spidery, single-seat prop jobs and other miscellaneous craft that outnumber the big birds almost 50 to one. Of course there are regulations, designed to protect the sparrows and the

eagles from each other, but every now and then they get together, and then the regulations are not always enough.

On July 19, an eagle and a sparrow came together and killed 82 persons. That one of them was U.S. Navy Secretary-designate John T. McNaughton may or may not have triggered the resulting furor, but within five days after the Piedmont Airlines 727 jet collided with a private, twin-engine light plane near Hendersonville, N.C., House investigators last week were prying into the whole story of in-flight collisions.

And a frightening story it is. July 19 was a bright, sunny day over western North Carolina, yet the accident occurred. Radio transmissions from the smaller aircraft indicated that the pilot thought he was heading northwest of the field just before the crash, yet the collision took place southeast of the airport (one report said the plane was "12 miles from where it should have been"). Since there was no radar—only 113 of the 547 U.S. airports used by the airlines have radar to keep track of the spacing between aircraft—regulations called for controllers to keep at least three miles laterally or 1,000 feet vertically between planes, yet both were cleared to or above 6,000 feet. The crash occurred 6,132 feet above sea level.

The piles of statistics describing sky traffic, all point in the same inescapable fact: the airways are fast becoming as crowded as the highways, and something will have to be done. Not only are four out of five airline-used airports without radar, but more than half of them don't even have control towers.

In addition, the sparrows are having a population explosion. In 1956, there were 62,886 private, corporate and other aircraft registered in the U.S. under general aviation, plus 1,802 commercial airliners; a decade later there were 107,085 general aviation craft and 2,379 on commercial lines. In other words, the sparrows multiplied by 70 percent while the eagles increased by almost a third.

The chances of getting in one another's way are bound to increase almost as rapidly unless somebody moves to untangle the mess. One approach is an electronic device called a collision avoidance system, which would automatically tell the pilots of approaching aircraft to go up, down, right or left. Unfortunately, such systems would be expensive—possibly up to \$50,000 per plane—and probably too big and heavy for use in lightplanes. The airlines' national organization, the Air Transport Association, has been concerned enough about collisions and near misses between airliners that last January it formed a task force of half