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## Under an 1815 Volcano Eruption, Remains of a 'Lost Kingdom'

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One of history's most violent volcanic eruptions blasted the island of Sumbawa in the East Indies in 1815. The sulfurous gases and fiery ashes from Mount Tambora cast a pall over the entire world, causing the global cooling of 1816, known as the "year without a summer."

The explosions killed 117,000 people on the island, now part of Indonesia, and wiped out the tiny kingdom of Tambora, on the volcano's western flank. The fast-moving avalanche of pumice and ash buried the town under 10 feet of debris, with only 4 of its estimated 10,000 residents surviving.

A team of American and Indonesian scientists has now found remains of what it says is the "lost kingdom of Tambora."

In an announcement yesterday by the Graduate School of Oceanography of the University of Rhode Island, the scientists reported uncovering bronze bowls, ceramic pots, fine china, glass, and iron tools in gullies running through the jungle growth 15 miles from the volcano.

Preliminary excavations, they said, exposed the carbonized framework of a house about 20 by 33 feet in size. The log beams, even some of the bamboo siding and thatch roof, are charcoal black, but the original shape of the house is preserved. Skeletons of two adults lay where they died, one of them clutching a large knife.

"There's potential that Tambora could be the Pompeii of the East, and it could be of great cultural interest," said Haraldur Sigurdsson, a geophysicist at Rhode Island who specializes in the study of volcanoes.

The volcano is dormant, not dead. Twice since 1815, it has rumbled to brief life, mere burps compared with the destructive eruption that cost the mountain more than 3,000 feet of its height, reducing its elevation to 9,354 feet. The summit crater still smells of sulfur venting from the depths.

Dr. Sigurdsson said in a phone interview that Indonesian archaeologists had examined the artifacts and were planning systematic excavations this year. Their first impression of the material suggested that the Tamboran culture was linked by ancestry or trade to Vietnam and Cambodia. Other archaeologists have yet to assess the find.

The many bronze pieces and historical evidence from Dutch and, briefly, British colonial days, Dr. Sigurdsson said, supported the belief that Tamborans were "not poor people at all, but actually quite well off."

Dr. Sigurdsson and researchers from the University of North Carolina and the Indonesian Directorate of Volcanology made the discovery in late 2004. While they were conducting research on the volcano itself, a local guide told them of gullies where people were picking up strange objects.

A six-week survey with ground-penetrating radar, capable of revealing material to depths of 30 feet, showed the outlines of boulders, terraced fields and the house. Spot excavations yielded more pottery and bronze, some bones and teeth, knives and a whetstone, even carbonized rice.

The site on the volcano slope is about three miles from the coast, conforming to an island tradition of settling inland, a safe distance from seagoing pirates. Such towns were usually ruled by a king who lived in

the largest house, a few of which have survived elsewhere in the islands.

Next year, Dr. Sigurdsson expects to extend the radar survey, searching for traces of the rest of Tambora and perhaps the king's house. If Tambora is indeed like Pompeii, which was buried in an instant by the erupting Mount Vesuvius, the scientist said, "all the people, their houses and culture are still encapsulated there as they were in 1815."