

# Mt. Taal Active Again

See Front Cover

► VIOLENT, explosive clouds of the erupting volcano Mt. Taal were similar in origin to those produced by thermonuclear explosions.

A series of superhot abrasive clouds spread out radially with hurricane force from the exploding crater, reported Dr. James G. Moore of the U.S. Geological Survey, Menlo Park, Calif. Dr. Moore had been dispatched by President Lyndon B. Johnson to make a special report on the volcano which erupted Sept. 28, 1965, killing over 200 persons.

Recent rumblings of the active volcano were reported this month.

"This renewed activity of Mt. Taal could be dangerous," observed Dr. Arturo Alcaraz, chief volcanologist of the Philippines.

Geologists and volcanologists studying the eruptive activity of this volcano have recommended that all inhabitants be evacuated from the island of Mt. Taal, about 45 miles south of Manila.

Studies of last September's eruption seen in this week's front cover showed

that abrasive clouds, like base clouds of thermonuclear bombs, were produced by the downfall and outward billowing of a mixture of blocks and fragments of rocks and ash suspended in superheated water vapor and gases.

The rock-laden clouds shattered and obliterated all trees within a radius of about 3,000 feet, Dr. Moore reported to members of the 47th annual meeting of the American Geophysical Union, Washington, D.C. (Cover photograph by U.S. Geological Survey was taken on Sept. 30, 1965.)

• Science News, 89:310 April 30, 1966

## METEOROLOGY

### First Real Man-Made Tornado Generated

► A TORNADO generated in a laboratory "cage" was demonstrated at the Catholic University of America by Dr. C. C. Chang, head of the department of space sciences.

It simulates, for the first time, some of the tornado elements responsible for such near-the-ground destruction as was seen in the Palm Sunday (April 11, 1965) disaster. On that one day, 37 Midwest tornadoes killed 271, injured 5,000 and caused over \$200 million in damage, in Iowa, Illinois, Wisconsin, Michigan, Indiana and Ohio.

The laboratory tornado is generated within a rotating screen six feet in diameter and nine feet high. A core of air is made to spin at 50 to 80 feet per second, creating a vortex like that of an actual tornado. A vortex is a whirling column with a hollow core such as is seen when water rushes down the bathtub drain.

In an actual tornado, this vortex tube is anchored to the ground and is pushed forward by a westerly wind at about 10 to 50 miles per hour. Its core, called "the clear eye," is quiet, but surrounded by a terrific rotating wind of 100 to 400 miles per hour.

The model resembles an actual tornado in two other elements: it has a strong suction at the core, and it has a boundary layer producing heavy pressures at ground level.

Dr. Chang said his model, "represents the first significant progress in generating laboratory tornadoes for study under controlled conditions." He said that no accurate measurements yet exist of actual tornadoes. The only available data are a few photographs, movies and some radar studies. "These," he said, "are insufficient to test theories of tornado dynamics which are themselves not well developed."

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U. S. Geological Survey

**VOLCANO - SHATTERED TREE**—The broken remains of a tree stand on desolate terrain laid waste by the explosion of Mt. Taal, 45 miles south of Manila. The violent, superabrasive volcanic clouds of Sept. 28, 1965, shattered or obliterated trees and buildings for several miles.

## GEOLOGY

### Small Ice Cap Once Topped St. George Island

► A SMALL ICE CAP covering about four and a half square miles once topped St. George Island, part of the Pribilof Islands to the west of Alaska, about 300,000 years ago.

At least two, and probably four, glaciers were present on the island during the Illinoian glaciation which was the third stage of the Great Ice Ages, said David M. Hopkins of the U.S. Geological Survey, Menlo Park, Calif., and Thorleifur Einarsson of the University Research Institute, Reykjavik, Iceland.

Snowbanks persisted on the island during the last great cold cycle, about 70,000 years ago, the scientists reported in Science, 152:343, 1966.

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