

GEOLOGY

Volcanoes Constant Threat

World has 450 active volcanoes, each of which is as potentially destructive as Hibok Hibok that erupted on the Philippines' Camiguin Island.

► ABOUT 450 active volcanoes exist in the world today and any one of them can potentially perform destructively as has Hibok Hibok volcano on the Philippines' Camiguin island.

People who live in the vicinity of volcanoes known to be active in historic times often spend lifetimes of fear that the earth around them will let forth death and ruin.

Many years often pass without an eruption or any real sign of activity. Then suddenly the pent-up forces within the earth may break loose.

To geologists volcanoes are a surface phenomenon, even though they erupt with tremendous violence. The origin of their heat and energy is at most 25 to 30 miles below the surface of the earth, and many experts think that the changes in rock structure that give rise to the activity are much closer to the surface.

If the modern superlative for big explosions is the atomic bomb, the volcano is a super-superlative. A volcano lets loose with far more energy than anything man can set off. Even a small volcano like Paricutin in Mexico, closest active volcano to the United States, has the energy of many atomic bombs, and it keeps at it day and night, with repeated eruptions.

A great explosive eruption, like that of Krakatoa in 1883, throws many tons of dust into the air. That outburst actually caused red sunsets for two years all over the world due to the dust in the atmosphere. There is thus the possibility that volcanoes, in addition to causing destruction in their eruption, will actually affect the weather of the whole earth.

Both steam and molten rock enter into most volcanic eruptions. One theory is that relatively close to the earth's surface, compared with the diameter of the earth itself, pressures keep basaltic rocks molten. They rise to the surface as the earth's crust adjusts, perhaps taking many years to travel the score of miles upward, penetrating through breaks in the crustal layers. Finally they may break out in a blister that is the volcano, spreading lava over the surface.

Chemical changes in the rocks, crystallization and radioactivity have been called upon to explain how heat and molten matter can occur even nearer the surface to cause volcanoes. Steam, which is water heated highly, can cause great explosive forces, such as accompany eruptions. The water may be remnants of the original material of the earth or surface water that has found its way into the depths of the earth.

An old volcano that explodes anew is likely to be a cinder cone built by a previous eruption. The old vent is a chimney of hardened lava, which is plugged up. Liquid lava bubbles up, generating gas, which creates the explosion.

Hibok Hibok volcano seems to be an old cinder cone that blew up in some such way. Later investigations will show just what happened and what is likely to happen in the future.

Science News Letter, December 15, 1951

PUBLIC HEALTH

Difference Between Man And Worm Hint to Control

► TWO POINTS in the complex chemical process by which the trichinella tapeworm differs from its host may pave the way toward controlling trichinosis, the disease you get from eating improperly cooked pork.

Dr. Clark P. Read, zoologist at the University of California at Los Angeles, has found these two vulnerable points in both

the trichinella tapeworm and the rat tapeworm. In his experiments he was searching for a way in which the energy-building activities of the tapeworms differed from those of the animals they lived in. Two such points were found at which the parasite could be attacked without injuring the host.

Experimentally, the parasites appeared to be conquered when attacked at these two points, said Dr. Read who termed the outlook for controlling them "very promising."

More than 21,000,000 Americans are said to be suffering from trichinosis. The rat tapeworm is also sometimes found in man.

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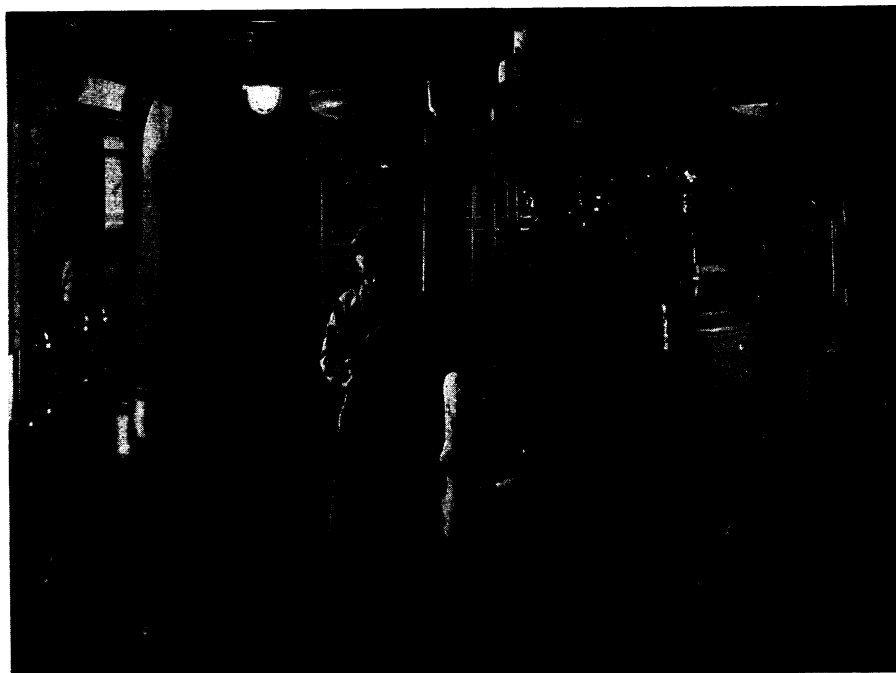
INVENTION

Tinsel-Placing Tool Aids Christmas Tree Trimming

► WITH CHRISTMAS approaching and the tree trimming job ahead, a simple tool to use in placing tinsel on the branches is an invention of interest. It is a time-saving device, but more important it eliminates the need for a stepladder or chair.

This simple tool is made largely of twisted wire, looped at its center with the two ends forming tines like those of a large fork. The loop itself makes a handle. The total length can be as great as desired. In use a number of pieces of tinsel are hung over the two tines which are far enough apart to straddle a twig of the tree. Inventor is Charles L. Poganski, St. Cloud, Minn. Patent 2,577,360 was his award.

Science News Letter, December 15, 1951



PILOT PLANT—The two-story-high plant at Battelle Memorial Institute is used for evaluating the commercial possibilities of processes for manufacturing organic chemicals.