States had clear skies. The number of meteors actually counted does not represent the true number falling into the earth's atmosphere for the moonlight reduced the chances of seeing very faint ones. Astronomers can make allowances for this and arrive at an estimate of the total number of meteors in the shower.

Several local programs for the determination of the heights of the meteors by simultaneous observations from two stations were ruined by clouds but it is the hope of the American Meteor Society that western plans had more success although reports have not yet been received.

The Society believes that many thousands of people observed the Perseid shower this year and points out that popular interest in meteoric astronomy is continually growing.

Science News Letter, September 2, 1933

PALEOBOTANY

Fern Prints Left In Lava That Killed Them

MOLTEN LAVA, so hot as to destroy in a moment any living thing it flows over, has nevertheless become a record book of ferns that once grew on the slopes of the great volcano Kilauea. The story of these "volcano fossils" is told by John E. Doerr, Jr., naturalist of Hawaii National Park.

One hundred and one years ago, a lava flow broke out on Byron's Ledge, a wall-like isthmus separating the craters of Kilauea and Kilauea Iki. The shallow streams of lava running down the wooded slope into Kilauea Iki destroyed all vegetation in their pathway, leaving them covered with black, shiny tongues of the hardened material.

A recently made trail cuts through some of these century-old lava sheets, the thinner ones of which can be pried up in slabs. On the under sides of the slabs there are abundant hollow moulds of the stems and leaves of ferns, showing many fine details of their structure, even to the long narrow sori or fruiting-bodies. The vegetable tissue of course has long since disappeared, except for small charred flakes in a few impressions.

Mr. Doerr raises the question whether it might not be worth while to explore the deeper lavas left by older eruptions, for the print of a plant once impressed in the lava should be good for indefinitely long periods of time.

Science News Letter, September 2, 1933

ENGINEERING

Modern Rooms Redecorated By Flip of Light Switch

Three Scenes Are Painted on Same Wall, But, By Skillful Lighting, Only One Shows Up at a Time

VARIETY being the spice of life, modern scientific ultraviolet lighting and special paints have combined to make possible the complete redecorating of a room with a flip of a switch. The usual room setting may be changed at will to that of a luminous Japanese tea garden or again to a dimly lit winter scene in a Swiss chalet.

This is all possible right in the home by the use of special phosphorescent and fluorescent paints illuminated by ultraviolet light. Ordinary non-luminous paints are used for the formal common finish that forms the standard type of decoration. Over these paints it is possible for skilled artists to paint a scene of entirely different design with fluorescent paints of almost any color that will not show in daylight or with ordinary lighting fixtures. Still a third scene may be applied with phosphorescent paints that will glow in the dark.

When the visible light is extinguished and pure ultraviolet light is shone from concealed fixtures the fluorescent and phosphorescent pigments in the special paints begin to shine and the walls are lighted by a soft gentle light. When all the light, both ordinary and ultraviolet, is extinguished the phosphorescent pattern becomes visible. This new home luxury of changing scenes and relaxing atmosphere will soon be in demand.

As usual it is the advertisers who have gone ahead with these schemes. A visitor to the Century of Progress can see many commercial exhibits featuring this new use of the ultraviolet. Wall paper changes its design from a simple geometric pattern in the day to an aquarium design under artificial illumination. A single poster may have three different scenes painted on it. The surroundings of a group of children playing in sunsuits change from a beach in the middle of summer to a modern nursery equipped with sun lamps in the winter.

The development of the "black bulb" ultraviolet lamp brings these properties of certain pigments, known for more than 300 years, into commercial use. It is similar to the ultraviolet health lamps but is shielded by a dense purple glass that cuts off all the visible light. These lamps may be wired into the ordinary 110 volt electric light circuits and are small enough to be concealed in a hidden fixture. The invisible light that they generate may be directed upon the painted designs.

The phosphorescent paint stores up energy from the invisible ultraviolet light and glows more feebly than the fluorescent paint, so that it does not interfere with the second design. When all the light, both ordinary and ultraviolet, is turned off the phosphorescent paints will continue to shine in the dark in much the same way as luminous dials of watches.

Science News Letter, September 2, 1933

From Page 149

their atomic hearts are different. The H may be either hydrogen isotope of mass one or hydrogen isotope of mass two and the two common types of oxygen are isotope of mass 16 and isotope of mass 18. Light water or nearly all pure ordinary water is made up of the lightest hydrogen isotope one and the lightest oxygen isotope 16. (*See Next Page*)