

## CHEMISTRY

## Earth's Temperature Mild When It Was Young

► THE EARTH was mild in temperature when it was extremely young and still growing.

Upsetting ideas that go back almost a century to Lord Kelvin, Dr. Harold C. Urey, Nobelist in chemistry at the University of Chicago, told the American Physical Society meeting in Chicago that the earth was not formed at high temperatures.

Instead of a fiery earth during its formation, Dr. Urey concludes from the elements now existing in the earth's crust that the accumulation of the materials which eventually formed the earth must have occurred at low temperatures.

The more volatile elements, such as mercury, arsenic, cadmium and zinc, have been retained in the earth's crust in about cosmic proportions. This could not have been the case had condensation occurred at high temperatures, such as 1,200 to 1,500 degrees Centigrade. They would have gone off in space.

"The formation of the earth was a complicated process," Dr. Urey declared, "and different temperatures existed at different times and in different regions."

With a hot earth at birth, all the iron should be present as a free, metallic element, as it is in meteorites. As it is, iron exists as oxides and sulfides as well.

Dr. Urey visualizes the loss of the great mass of the earth's original hydrogen, inert gases, most of its water, nitrogen, carbon as methane and some of the rocky silicate material when the earth was widely distributed in space.

After this, the earth accumulated out of planetesimals, little planets, some of them hundreds of miles across, but this was a sufficiently slow process not to raise the temperature very high.

Science News Letter, December 11, 1954

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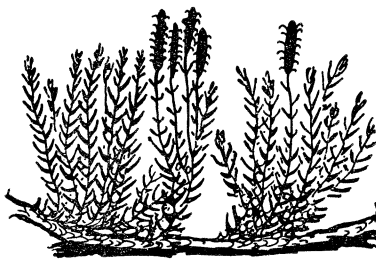


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Ground Pine

► IT LOVES to grow in the rich, mossy places, this curious little plant with its tiny, sharp-pointed green leaves, looking for all the world like an odd fairy pine tree. It is only a few inches tall, yet it has inordinately large cone-like fruit.

But the ground pine is not really pine. It is not even closely related to the common evergreen trees. It is more in the nature of a surviving great-great-granduncle, a black sheep in the family tree which gave rise to the conifers in dim ages long ago.

Ground pine is really a member of the fern family, belonging to that peculiar branch of the ferns known as the club-mosses. Its air of being a plant from another world is not entirely out of place, for it belongs by rights to the remote age when the world's coal was being made.

Then its ancestors were proud giants, standing yards high where ground pine now stands inches, with trunks several feet around and leaves a foot long. The kinds of trees we know today did not exist then, and these were the stuff of primal forests.

But times changed, new climates came in, and the tribe of seed-bearing plants arose. The early aristocrats, these dinosaurs of the plant world, could not hold on. Only the dwarfs and the fingerlings of the ground pine family escaped, surviving by hugging the forest floor.

With its taller neighbors in the winter woods, however, ground pine now shares the honors of Christmas pageantry and decoration. Christmas wreaths in the shop windows are built pretty largely on a foundation of this fine green stuff with its needle-like leaves.

Like the holly it often accompanies, ground pine has suffered because of man's holiday spirit. It has long been over-used, and wide areas that once produced it in quantity have been stripped bare for the Christmas markets. Only mountain tops and reaches of country remote from the roads still have it in quantity.

For ground pine is extremely difficult to transplant and cultivate. It was a king of the forests once; now it struggles to survive. It is almost as if it looks back to its days of glory, refusing to be tampered with by man, a recent and puny force compared to the great changes in weather which made it what it is.

Science News Letter, December 11, 1954

## MEDICINE

## Heart Beats Long After Breathing Stops

► THE CASE of a heart that went on beating for two hours and 40 minutes after its owner had completely stopped breathing is reported in the *Journal of the American Medical Association* (Nov. 27).

The patient was a 46-year-old man who had been under treatment for several years for high blood pressure and kidney disease. He was brought to the Bryn Mawr (Pa.) Hospital one morning almost unconscious from a massive brain hemorrhage. At 4:35 that afternoon his breathing suddenly stopped.

Because his heart was still beating, the intern gave artificial respiration for about ten minutes, followed by nikethamide, a stimulant drug. He had been getting oxygen through a tube into his nose at the rate of about 14 quarts a minute. This was continued. He never breathed again but his heart continued to beat until 7:15 that evening.

The case is reported by Dr. William Dale Beamer of Bala-Cynwyd, Pa.

Science News Letter, December 11, 1954

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