



Stones Into Bread

SOIL erosion just now is the chief ogre of conservation-minded America. We hear with justifiable dismay of the inroads wind and water have been making upon our best farming, pasture, and forest lands. We spend millions of dollars and endless efforts of scientific brain and CCC brawn to check a process that has become a menacing waste of our national resources.

Yet erosion is a menace mainly in so far as man himself has made it so. Unwise stripping of forests off the hills, exposure of rangelands to the greedy denuding mouths of too many cattle and sheep, plowing and clean cultivating of slopes that should rightly be left in grass or at any rate terraced: these are our own sins, and nature is only imposing impartial penalty upon us for them.

Erosion in nature's own economy is for the most part a beneficent process, even when looked at through man's egocentric eyes. If there had been no erosion since the beginning of the world, there would be no soil for forests and

crops to grow in, no river valleys and pleasant lakes to supply fresh water and comfortable dwelling-places, not even any sand in which to play on the seashore.

Erosion is the natural complex of effects of wind and water, frost and summer heat, upthrust and gravity, on the massive lavas and jagged rocks that were the earth's only original endowment. Atmosphere inevitably brings about erosion. If you would see an erosionless world, look upon the atmosphereless moon. There have been no floods there, no washed soil, no dust storms for untold ages. Probably there never was any erosion on the moon at all. Yet if interplanetary transportation were available, it is extremely unlikely that there would be any emigration whatever to the moon, even from the most

erosion-scored lands of all the earth.

Life itself, even when lived less prodigally than man seems to know how to live it, is an agency of erosion, and benefits the plants and animals that take part in the process. Lichens growing on a bare rock, for example, initiate erosion. They secrete substances that dissolve a little of the rock face away and make a shallow foothold for these lowly plants. Then dust and debris gather, mosses come in, soil acids may eat a little deeper into the rock. Into crevices creeps water, freezing and thawing, and wedging fragments out. Slowly the once-forbidding hard rock pulverizes into soil.

Truly, the mills of God grind slowly, but they grind exceeding small. Through erosion, stones become bread.

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MEDICINE

Man-Made Radioactive Sodium Used to Treat Human Disease

FOR the first time a man-made radioactive substance is treating disease.

This became known when injection of radiosodium, an element totally uncreated a few years ago, into two human sufferers from leukemia was reported by Drs. Joseph G. Hamilton and Robert S. Stone of the University of California Medical School.

The clinical value of the radium-like treatments was pronounced inconclusive, but these experiments are expected to pave the way for further tests upon this disease and also cancer, which leukemia is like in some respects.

The radiosodium used was made by the bombardment of sodium chloride

(common table salt) with hearts of heavy hydrogen (deuterons) shot out by the powerful cyclotron or atomic "merry-go-round" devised by Prof. Ernest O. Lawrence in the University of California physics laboratory.

Radiosodium was seized upon for medical use because it promises to have the beneficial effects of radium and other natural radioactive substances without their dangers. Radium and its salts if injected into the human body become fixed in the body tissues and continue to bombard them until death is caused, usually in a few years. This is not possible with radiosodium as its activity is over in a few hours instead of continuing for many years. The half-life of radiosodium is only 14.8 hours. This short duration of radiosodium's activity made necessary speedy teamwork between the physicians and the physicists in the leukemia experiments just reported. Sodium chloride was bombarded, rushed to the hospital, dissolved in water, boiled, filtered, tested for activity, and then injected into the veins of the patients, who were men 29 and 23 years old.

It is expected that other artificially created radioactive substances will be used experimentally in disease treatment in the near future.

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