when Mount Katmai in Alaska blew its top off a quarter of a century ago. The famous cliff of petrified trees in Yellowstone National Park shows on its face a dozen such eruption-whelmed forests, each growing above its predecessor's graveyard.

Wood thus buried decays very slowly indeed—molecule by molecule. And as each bit drops away the woody stuff is replaced, molecule by molecule, with mineral from the waters that trickle through the ash.

Thus even the minutest detail of inner structure is replaced in exact duplicate by stone of flinty hardness and often great beauty of color. It is ideal material for the petrographer's grinding apparatus.

Reduced to transparent flakes, these petrified woods can be identified by the microscopic details, just as wood from living trees can be identified by timber experts, without the aid of leaf or flower or fruit.

It is easy, for example, to tell whether these trees that lived when dinosaurs still trod the earth were related to pines and spruces and other evergreens, or whether their next of kin were broad-leaved trees like oaks and elms and maples. The distinguishing mark of the evergreen or conifer series are the curiously constructed openings from one long wood-cell into another, called border-pits. These are never found in the wood of broad-leaved trees.

Botanists hesitate to call exceedingly ancient petrified wood pine even though it looks like pine. So they compromise by calling the genus *Pinoxylon,* which is Greek for "pine-wood" or "pine-like-wood." There are quite a number of these extinct species which have been given names ending in the Greek *xylon,* meaning wood. But the scientist who named *Callixylon* must have seen something especially fine through his microscope, for that name means "beautiful wood."

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Science News Letter, June 19, 1937

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BIOPHYSICS

Molecules of Visual Purple Measured at Columbia

VISUAL purple, the chemical compound that enables us to see, has had its molecules measured for the first time, in the biophysical laboratory of Prof. Selig Hecht of Columbia University. (*Science,* June 11). Working with Prof. Hecht in the research were Drs. Aurin M. Chase and Simon Shlaer.

Indirect physical methods and mathematical inferences had to be used in the measurements, because the molecules of visual purple are far too small to see with any possible microscope. They have a most probable diameter of a little less than a hundred-thousandth of a millimeter. (A millimeter is approximately a twenty-fifth of an inch, or about the thickness of the lead in a pencil.)

At that, the molecules of visual purple are very large—for molecules. Their molecular weight is calculated at something like 800,000, as contrasted with weights of a few hundreds or even under 100, for most common substances. In both size and weight, the molecules of visual purple resemble protein molecules.

Visual purple is a reddish-purple liquid found in very small quantities in the finer structure of the retina, or light-sensitive film that lines the eye and is the essential organ of vision. Visual purple fades to colorlessness when exposed to light and recovers its color in the dark. Recently Prof. Hecht published a method for extracting visual purple from the eyes of frogs, and accomplished the color reversals outside the living eye, in a glass tube.

Science News Letter, June 19, 1937

SEISMOLOGY

Watch Great Dam for Quakes; Lake's Weight May Bend Rock

WILL the 41,518,125,000 tons of water backed up into Lake Mead by Boulder Dam cause earthquakes?

This question was raised before a meeting of the Seismological Society of America in St. Louis by R. R. Bodle of the U. S. Coast and Geodetic Survey.

The Colorado River in its lower course flows through a region where many violent earthquakes have occurred in the past, some of them comparatively recently. Scientists have wondered whether the vast weight of water that will be concentrated along the 115 miles of Lake Mead will put sufficient additional strain on the crustal rock layers to set off disturbances.

Mr. Bodle has devoted considerable study to the question, but stated that the data available are not sufficient to justify a positive answer one way or the other. He suggested that several seismograph stations be set up in the region, so that a better informed watch may be maintained over the earth's slow movements at this important place.

Machine-made indoor earthquakes were used at the Massachusetts Institute of Technology to test instruments intended for use in earthquake regions, called accelerometers. They are so designed that they remain "asleep" until a strong earthquake wakes them up. Then they go into action and write a curve that records what happens.

The accelerometers were tested on a "shaking table," which is a platform so mounted that it can be moved back and forth in any horizontal direction, giving a very fair imitation of an earthquake. The tests were made by H. E. McComb of the U. S. Coast and Geodetic Survey and A. C. Ruge of the Institute staff. The records thus obtained will be useful for comparison with records made by the same instruments when they go through a real earthquake.

A Restless Deity

Indians in one earthquake-tortured part of the Republic of Colombia used to believe that the disturbances were caused by a great god who slept under the Andes. When he turned over in his bed, the earth shook.

This early theory of the cause of earth-

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