

Pennsylvania's last scrap of virgin timber, 4,000 acres in extent, was acquired by the U. S. Forest Service, to be kept as a wilderness area.

Chemistry

The heavy isotope of neon, mass 22, was concentrated to 99 per cent. purity by Dr. Gustav Hertz of Berlin.

Work by Prof. F. W. Aston, Cambridge University, has indicated some 20 new isotopic varieties of chemical elements, bringing the total number of known isotopes to 247 stable varieties among 79 of the 92 elements.

First definite proof of the existence of a super-heavy element beyond No. 92 in the periodic table was obtained by Dr. Aristid V. Grosse, University of Chicago.

With an improved mass spectrograph Prof. A. J. Dempster, University of Chicago, obtained, for the first time, evidence of the existence of isotopes of gold and platinum.

Because atomic weights depend on the proportions of the various isotopes of the element present, further work in this once-important chemical field was held useless by Prof. Harold C. Urey, Columbia University.

By "boiling down" 75 tons of water over a period of a year, ten drops of precious liquid containing a high concentration of the rare hydrogen isotope of mass three was obtained at Princeton University.

Heavy water, made of ordinary hydrogen combined with the heavy isotope of oxygen, was announced by J. B. M. Herbert and M. Polanyi, Manchester University, England.

Using heavy water molecules as "tracers," Prof. George von Hevesy and E. Hofer, Freiburg University, Germany, showed half the amount of any drink of water is still in the human body after nine days.

Evidence of "lost" chemical elements no longer present on the earth was found by Prof. George H. Henderson, Dalhousie University, Halifax, Canada, from study of halos in mica formed by radioactivity.

New discoveries about the chemical structure of vitamin B, by Dr. R. R. Williams and his coworkers at Columbia University, led to hope that it may be synthesized.

Huge reserves of carbon dioxide gas, from which "dry ice" is made, were discovered near Imperial Valley in California.

A chemical method of plasticizing rubber in place of more expensive mechanical chopping and crushing was developed by Ira Williams and C. C. Smith, E. I. duPont de Nemours and Company.

A new process of purifying potash developed by chemists of the U. S. Bureau of Mines holds the hope of freeing America from the necessity of potash imports in event of war.

A mixture of di-phenyl and di-phenyl oxide, chemical cousins of the synthetic geranium perfume, is being used to replace water in steam boilers for increased efficiency, C. G. Brown, G. A. Gaffert, P. H. Konz and D. S. Ullock, University of Michigan, reported.

Earth Sciences

The entire northeastern part of the United States felt, on Nov. 1, an earthquake that centered near Lake Nipissing, in northern Ontario.

A series of destructive earthquake shocks damaged Helena, Mont., during the last ten days in October.

A local earthquake was felt at the Grand Canyon of Arizona on Jan. 15.



CHRISTMAS TREE'S ANCIENT KIN
This might have been a Christmas tree, if there had been any Christmas, or children to celebrate it, 250 million years ago. Despite its almost palm-like appearance, it is a remote relative of modern spruces and pines, that lived during the Coal Age. This synthetic restoration is on display in the Field Museum of Natural History, Chicago.

A total of 25 earthquakes was recorded by seismographs in the United States.

Disastrous earthquakes, killing thousands of people, visited Formosa a few days before Easter, and northern India on May 31.

Correlation between the position of the moon and the occurrence of deep-focus earthquakes was demonstrated by Prof. Harlan T. Stetson, working at Harvard College Observatory.

Mauna Loa, Hawaii's loftiest active volcano, erupted a stream of lava on Nov. 23, but caused only minor damage.

Vesuvius was in eruption, emitting streams of lava.

A volcanic crater in the Pinacate region in Sonora, Mexico, just across the U. S. boundary, was reported in eruption in January.

An expedition of the Carnegie Institution of Washington studied volcanoes in Central America.

The U. S. Weather Bureau's hurricane service was reorganized, with three stations at San Juan, P. R., Jacksonville, Fla., and New Orleans, La.

A total of 5 hurricanes was recorded from Southern waters.

Florida was twice swept by destructive hurricanes.

The record-breaking Great Drought apparently ended; precipitation decidedly above normal caused serious delays both in spring planting and in fall harvesting; and there

were serious floods on some of the Plains rivers.

Dust storms again raged in the West, during early spring.

A persistent fog over almost the entire East and Midwest held up all air traffic for nearly a week in January.

Two villages were destroyed by an ice-avalanche in northern Russia, with a loss of 88 lives.

The establishment of a central Governmental map-making body, combining the work of a number of scattered bureaus, was recommended by the Science Advisory Board.

A remarkable series of educational films illustrating geological processes was made, as a cooperative enterprise of the U. S. National Park Service, the University of Chicago, and Erpi Picture Consultants, with the aid of C.C.C. workers.

Preparations were made for digging a ship canal across northern Florida.

The Great Geysir of Iceland, prototype of all geysers, resumed eruptions, after a quiescent period since 1914.

Mysterious Easter Island and "Robinson Crusoe's Island" in the Juan Fernandez group were set aside as national parks by the Chilean Government.

An expedition from the Hawaiian Academy of Science climbed Mauna Kea, the highest peak in the islands, and spent a week at its summit.

Soviet expeditions penetrated the Arctic Ocean north of Russian territory, discovering a number of islands and breaking a path through to Bering Strait.

Lincoln Ellsworth, noted explorer, made several new discoveries in Antarctica, but appeared to be lost in an attempt to cross the frozen continent by airplane.

Seismic soundings by the Byrd Expedition determined the thickness of the ice sheet over parts of Antarctica.

A large air photo map, comprising the entire state of Connecticut, was completed.

The American Geographical Society of New York completed the first of a series of Northern Labrador map sheets that embrace 5,000 square miles.

The one to one millionth map of Hispanic America by the American Geographical Society of New York, the largest mapping enterprise by a non-governmental organization, was brought to a conclusion after 15 years of work.

Addition of daily airplane flights to 15,000 foot altitude at about 20 locations allowed the U. S. Weather Bureau to combine air mass analysis with other methods of weather forecasting as recommended by the Science Advisory Board.

Mammoth and Dixon Caves in Kentucky were demonstrated to be part of the same cave complex, by Dr. E. R. Pohl, technician of the Emergency Conservation Work.

Lunar tides in the solid earth, altering the distance between Europe and America by as much as 63 feet in a year, were shown to exist by Prof. H. T. Stetson, astronomer, and Dr. A. L. Loomis, physicist, working in the latter's private laboratory at Tuxedo, N. Y.

A device for taking sample cores of sea-bottom was developed by the Carnegie Institution of Washington, the Geological Society of America and the du Pont Powder Company.

Fossil-bearing rock specimens, picked up by dredging off the northern Atlantic seaboard, upset the long held belief that the sea bottom in this region has had a long period of stability. (Turn to page 394)