

of protoplasmic structure, which usually extends across the chromosome at that level. The type may change abruptly in passing from one region to another. In some places the protoplasm appears to have a smooth, undifferentiated structure, in others it is full of large or small cavities.

The two Carnegie Institution workers suggest that there may be qualitative chemical differences associated with the differences in structure.

Some months ago, one of the other investigators likened the disk-like structures to "temples of destiny" on the "streets" of heredity which are the chromosomes. If the analogy is to be pursued further, the inter-disk cavities found by Dr. Metz and Miss Gay might be called the rooms within the temples.

But as yet nobody has actually seen the powerful controlling goddesses who dwell in these rooms, the modern Fates, otherwise the Genes.

Science News Letter, December 29, 1934

ARCHAEOLOGY

Swedish Unemployed Rebuild Castle

WITH funds provided by the Swedish government, unemployed workers of Sweden are busily raising the walls and towers of historic Bohus Castle, of medieval fame.

Ruins of the castle have long been a landmark to travelers approaching Gothenburg from the sea. That the ancient stronghold was a center of Scandinavian military history from the time of the Middle Ages, has been familiar fact. Now the secrets of the castle, its dungeons, powerful fortifications, and state-vaulted baronial halls, are being uncovered by the relief workers.

In one tower, a small museum has been improvised by the archaeologists.

Science News Letter, December 29, 1934

In Science Fields

PALEONTOLOGY

Idaho Had its Rabbits 5,000,000 Years Ago

JACKRABBITS loped in Idaho five million years ago as they loped there today. Evidence to this end is presented by Dr. C. Lewis Gazin, in a new technical publication of the U. S. National Museum. Dr. Gazin describes four fossil hare species, three of them new, from the late pliocene, the geologic period preceding the last ice age.

Science News Letter, December 29, 1934

GEOLOGY

Oregon's Famous Crater Lake Not 1,000 Years Old

See Front Cover

BLUE Crater Lake, in the national park of that name, at last has divulged the secret of its age. Not all at once, however. A few facts it revealed to the geologist, a few more to the student of tree rings, others to the engineer. Putting two and two together, these various specialists have come to the conclusion that Crater Lake is young, not yet a thousand years old.

Crater Lake lies in a great volcanic crater, and from the floor of this crater rise two islands, results of the last puffs of volcanic action. One of these, Wizard Island, is a small volcano. On its shoulders it bears a mantle of tree life, the first that ever grew there, according to scientists. By counting the annual rings on cores of wood bored out of these trees, Dr. W. G. Vinal has found some of them to be nearly 800 years old.

Since observations by scientists and others of various volcanoes show that only a few years elapse between the

cessation of eruptions and the growth of plant life on volcanic slopes, it is estimated that the probable cessation of volcanic activity on Wizard Island occurred some 900 to 1,200 years ago. Since the rocks of the island do not show the characteristics of lava that has flowed into or through water, it is believed that the lake is younger than the island, or well under 1,000 years.

It is estimated that the lake, which now has an average depth of 1,500 feet, was built up to its present level over a period of 730 years. This estimate is based on the average annual precipitation of 70 inches at Crater Lake, an average evaporation of 50 inches a year, and an average of ten inches of precipitation lost through seepage. These figures are based on an average of rainfall and evaporation equaling the average of the past 50 years.

At present a balance appears to have been reached between precipitation on the one hand and evaporation and seepage on the other.

The lake, which has a diameter of six miles, lies 1,000 feet below the level of its volcanic rim.

Science News Letter, December 29, 1934

CHEMISTRY

Chemists Honor Discoverer Of Artificial Rubber

FATHER Julius A. Nieuwland, professor of organic chemistry at the University of Notre Dame, has been awarded the William H. Nichols medal of the New York section of the American Chemical Society. The honor, it is announced by the award committee, is for his "basic work on syntheses from unsaturated hydrocarbons." This means simply, Father Nieuwland's decade of research on artificial rubber.

Working on reactions possible with acetylene—the gas used in welding torches and in old-fashioned automobile headlights—Father Nieuwland made discoveries which subsequent research utilized in making the synthetic rubber known as duprene.

Duprene, while having the elastic properties of natural rubber, is highly resistant to the action of gasoline and other rubber solvents as the natural product is not.

While artificial rubber cannot be



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