

society as a whole had set its approval. Our riches were without limit, they thought. Let each man take what lies within his reach.

"Harsh experience has dispelled this pleasant indifference. We have learned that our land, as well as our forests and minerals, must be conserved. We have learned that this is a group, not an individual, problem."

To our forefathers, the text goes on, the idea that some day there might not be enough land for everyone seemed absurd. They felt that "there will be land for the hundredth and the thousandth generation."

To the homesteaders the forest was a bitter enemy. It had to be destroyed before they could work the farms which would make them independent and comfortable. They believed the land and the forests to be endless.

Yet even in early days, the land was not endless. Thousands of pioneers were forced to settle on poor land, or on good land periodically worthless from lack of water, because other men had preempted the most desirable acres. It is the problem of their descendants and successors, in the furrowed hills of the Southeast, on the sun-blasted plains of the Northwest, that has become a national burden today. On our ability to meet and solve it as a national problem will hinge, very largely, our ability to survive as a national entity.

Science News Letter, August 8, 1936

ARCHAEOLOGY

"Pie Crust" Graves Found in Kentucky

"PIE crust" graves, an extraordinary burial fashion of ancient America, have been found in an Indian mound excavated near Lexington, Ky., by Dr. W. D. Funkhouser, professor of anthropology of the University of Kentucky.

The 16 skeletons were found each resting on a baked clay layer and covered by another. The clay was pressed together at the edges in pie crust manner, according to Dr. Funkhouser's report just published.

One skeleton was found accompanied by copper bracelets and rings. Others had buried with them awls, celts, arrow-points, and stone gorgets.

The mound is unique in Kentucky, and is believed to represent Indians influenced by the Hopewell or Adena mound builders, if not actually belonging to one of those Indian cultures.

Science News Letter, August 8, 1936

CHEMISTRY

First Compound of an Enzyme Discovered in Yale Research

NEW and important knowledge of enzymes, those mysterious chemical agents which play a part in reactions ranging from digestion of food to brewing of beer, has been gained by the discovery of a new compound which contains an enzyme as one of its chemical components. This discovery was made by Dr. Kurt G. Stern of Yale University.

The discovery upsets the still widely held theory that enzymes never enter into chemical reactions, although they exert some force which brings about these reactions, many of which are vital to life. Now Dr. Stern has evidence that at least one of the enzymes does enter into direct chemical reaction.

Catalase, the widely distributed enzyme he studied, breaks down the hydrogen peroxide which the body may form, to harmless water and oxygen. But nobody has been able to study the mechanism of this reaction; for one thing, it

went too fast. Dr. Stern replaced one hydrogen atom in hydrogen peroxide with a heavier radical which is the base of ordinary alcohol, and which is called an ethyl group. The catalase breaks down this material, but at a much slower rate than it breaks down hydrogen peroxide.

Using an instrument called a spectroscope, which detects minute amounts of chemicals by their effects on a beam of light passed through them, Dr. Stern found that the enzyme combined chemically with the material it decomposed. His observations show that the process is: Catalase and ethyl peroxide combine to form a new compound, which breaks down to form catalase, aldehyde, and other products. The production of aldehyde from a peroxide may provide a clue for the function of catalase in animal and plant tissues.

Science News Letter, August 8, 1936

PHYSIOLOGY

Fresh Green Grass Juice is Newest Growth Promoter

ADD to sauerkraut juice, tomato juice, and other juices that are good for what ails you—grass juice.

Drs. C. A. Elvehjem and E. B. Hart of the University of Wisconsin have discovered that the growth-promoting properties of milk can be markedly enhanced by adding fresh grass juice. Juice squeezed out of lawn clippings was added to the daily milk ration of young rats, causing them to gain weight much more rapidly than "control" rats that got just plain milk.

Liver and brain tissue were also found able to promote growth when added to winter milk.

This finding, if it proves applicable to human nutrition, may point to the desirability of fortifying winter milk with materials containing the growth factor which it lacks. Such additions will not be necessary with milk produced in summer, for cows having access to pasture give a product which is potent in promoting growth.

Just what is the nature of the growth factor with which winter milk is inadequately supplied is not definitely known. The fact that brain and liver apparently contain considerable amounts of it suggests it may be vitamin B₄, but this is not certain.

The fact that the search for materials to improve the quality of winter milk resulted in failure with many substances narrows the possibilities of what the unknown growth factor may be. Vitamins B and B₂ proved of no value in trials at the University of Wisconsin. Since carotene, cod liver oil, orange juice, and irradiation all failed to improve milk as far as the growth factor is concerned, evidently it is not A, C, or D.

Science News Letter, August 8, 1936

Wistaria vines have been known to live for more than a century, and a vine may spread over a thousand feet of wall area.