



SAFE

Children's toys are now made of rubber, which won't scratch furniture, and are packed in a box which serves as a miniature stage.

in amount and crude in character".

Some of the Hebrew expressions are literal translations from Egyptian technical terms used in medicine, he pointed out. On the other hand, there are Egyptian medical expressions which have puzzled Egyptologists, but which can be explained from their Hebrew equivalents. Prof. Yahuda added that Hebrew terms for boils, blains, eczemas, tumors, scurvy, scabs and treatment of sick were formed from roots exactly corresponding to Egyptian stems from which names of febrile skin diseases and therapeutic terms were derived.

Science News Letter, March 22, 1941

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CHEMISTRY

Important Explosives Chemical Can Be Made From Petroleum

GLYCERINE, important industrial chemical used in the manufacture of explosives for America's defense program as well as in more peaceful pursuits such as the manufacture of resins for varnishes and lacquers and the processing of tobacco, can now be made from petroleum.

Members of the American Institute of Chemical Engineers, meeting in New Orleans, heard Dr. E. C. Williams, vice-president and director of research of the Shell Development Co., Emeryville, Calif., describe the new process.

At present obtained as a by-product from the soap and fat splitting industry, the price and supply of glycerine has been subject to wide variations. In 1917 it rose to 70 cents per pound and was difficult to obtain even at that figure. At that time it was made in Germany by a fermentation process, to the extent of about 13,000 tons annually, but this

method involved many commercial difficulties.

First step in the Shell process is the isolation of a gas, propylene, from the petroleum. Then comes a reaction with chlorine gas to form allyl chloride. This is treated with caustic soda to form allyl alcohol. In an alternate step, glycerine chlorhydrin is formed instead. The last step is the production of glycerine from one of the last two products.

In explosives manufacture, the glycerine is treated with nitric acid to form nitroglycerine. This is used to make dynamite and also some military explosives. The British explosive, cordite, also requires glycerine in its production.

Dr. Williams declared that the glycerine produced by the new method "is of excellent quality, meeting easily the specifications of the most rigorous user with whom we have yet come in contact."

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MEDICINE

Enzyme That Darkens Potatoes May Aid High Blood Pressure

DISCOVERY that a common enzyme, familiar for its part in causing potatoes to darken, will reduce dangerously high blood pressure in human patients and clear up the eye and heart symptoms in high blood pressure is announced by Dr. Henry A. Schroeder, of the Hospital of the Rockefeller Institute in New York. (*Science*, Jan. 31.)

The name of the enzyme is tyrosinase. It is found in many fruits and vegetables, for example, apples, mushrooms and bananas, as well as potatoes, and also in human and other animal tissues. Dr. Schroeder used tyrosinase from mushrooms, but a mushroom diet is not therefore to be considered a cure for high blood pressure.

A pure preparation of tyrosinase was injected under the skin of 17 high blood pressure patients daily for from three to four weeks. In all but one, Dr. Schroeder reports, "the blood pressure fell a significant amount." Even patients in a late stage of the disease were improved.

Tyrosinase may be the long-sought

curative remedy for high blood pressure, but Dr. Schroeder does not think so, although he does not know yet. He is still working on the problem, trying to find out whether tyrosinase will prove to be a cure for high blood pressure or whether following this clew in further research will lead to discovery of another more effective chemical.

Reduction of high blood pressure and relief of other symptoms of the condition in small groups of patients have been accomplished by other scientists by the use of kidney extracts. Tyrosinase, which is found in animal as well as plant tissues, might be the active principle of these extracts, Dr. Schroeder said, but he does not think it is. The exact chemical composition of the kidney extract, however, is still unknown.

When he stopped giving tyrosinase to his patients, their blood pressure returned to its previous high level within three to six days, Dr. Schroeder reports. Improvement in the other symptoms and in the eye condition lasted longer.

Tyrosinase was tried, first in rats and dogs and then in human patients, as a possible high blood pressure remedy because Dr. Schroeder believed the substance responsible for some varieties of high blood pressure may be a chemical

containing a phenolic group. This chemical group can be broken down by the mushroom enzyme. The results suggest, he says, "that some phenolic substance is altered."

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PALEOBOTANY

Ethiopian Climate Now Like Arizona's Long Ago

Forests in Early Dinosaurian Days Were Dominated By Great Tree Ferns and Relatives of Conifers

CLIMATIC conditions like those in parts of modern Ethiopia prevailed in the American Southwest 170 million years ago, when the long reign of the dinosaurs and their great reptilian kin was just beginning. This is indicated by fossil plant remains in one part of Petrified Forest National Monument in Arizona, studied by Dr. Lyman H. Daugherty of San Jose State College in California. Dr. Daugherty's report has just been published by the Carnegie Institution of Washington, along with a description of the geology of the region by Howard R. Stagner of the U. S. National Park Service.

The forests of Arizona in early dinosaurian days (Triassic, to geologists) were dominated by great tree ferns and relatives of modern conifers, Dr. Daugherty states. Higher flowering plants of the broad-leaved types were not to make their appearance for many millions of years. However, plant evolution was going on quite rapidly, as the saurians lumbered onto the scene.

Presence of tree ferns argues a warmer climate than that of present-day Arizona;

it was a warm-temperate or subtropical world. Conifer tree trunks show very sharply marked annual rings, indicating an abundance of rain during part of the year, followed by a severe dry season in which no growth took place. Great size of the petrified logs indicates a climate far better suited for tree growth than is the present climate of the Southwest.

Dr. Daugherty has come to the conclusion that in Triassic Arizona there were moist stream valleys with thick, jungle-like forests, the plateaus between them supporting lower vegetation with scattered trees. This kind of formation, called savanna by ecologists, is characteristic of parts of Ethiopia and other regions in Africa, as well as certain areas on the outskirts of the great central tropical forest mass in South America.

Evidence of forest fires in the ancient woods was turned in the form of boat-shaped log fragments crusted with fossil charcoal. However, no healed-over fire scars have been found, to indicate that trees suffered fire injury while living.

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ARCHAEOLOGY

Parts of Jerusalem's Third Wall Revealed at Last

WAR or no war, two archaeologists in Jerusalem are now methodically digging to clear up remaining mysteries concerning the Holy City's historic and controversial Third Wall.

This is the wall built by Herod Agrippa not many years after the death of Christ. St. Paul viewed this new and ambitious wall enclosing Jerusalem, in

the days when boldness of building such a fortification aroused suspicion that Jewish King Agrippa planned a revolt against Rome.

Starting last August, Professors E. L. Sukenik and L. A. Mayer of the Hebrew University resumed their investigation of the route of this long-buried Third Wall. Since 1925, these two, assisted by other

archaeologists, have pursued this digging project at intervals. Road construction in northern suburban Jerusalem offered the present good chance to inspect hidden depths of the city's past.

Digging in progress has revealed the foundation course of a wall and tower to the east of a modern American landmark in Jerusalem—the American School for Oriental Research.

Every foot of the buried walls of Jerusalem added to the map picture of the past is eagerly hailed by scholars because of arguments over true location of venerated sites. Especially keen is interest over the location of Jesus' tomb, which Biblical narrative places outside the city gate.

Discoveries of wall fragments in recent years have convinced some archaeologists that the famous Church of the Holy Sepulchre cannot be the site of Jesus' tomb, because they reconstructed the lines in such directions that the church would stand inside, not outside, the old Second Wall—the wall of Jesus' day.

The Church of the Holy Sepulchre owes its veneration to events in the fourth century when Emperor Constantine and his mother, Helena, took great interest in sites and relics relating to Christ and the location of the tomb was fixed where church and shrine stand.

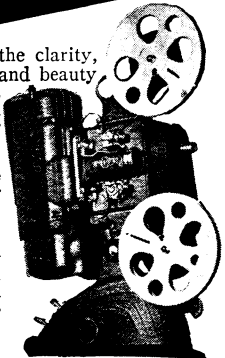
Unearthing even a fragment of tower

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