

CHEMISTRY

Prune Beer Is Newest California Beverage

PRUNE beer is expected to be placed on the market in western states soon.

Eberhard A. Klepper, brewmaster of a large San Francisco brewery, has been granted a patent on a process for the manufacture of prune beer, which he claims has a flavor almost identical with other beers, but a higher vitamin content.

Mr. Klepper is now negotiating for the construction of a brewery at Hollister, Calif., in the heart of the prune industry.

Orchardists are watching with considerable interest progress of plans for the manufacture of the new beverage. They state it would open a new outlet for small prunes, always a drug on the market.

Prune beer is practical from a commercial standpoint, Mr. Klepper contends, as it costs no more to manufacture than other brands, and the process is almost identical with the brewing of cereal beer, thereby eliminating the need of installing costly new brewing equipment.

Dried prunes are mixed with water and thoroughly cooked so that all of the flavor and juices are extracted from the fruit, Mr. Klepper said. Malt is added, and the mixture then is sent through crushing machines which prepare it for the mash tubs. It then is sent to the brew kettles.

The brew is kept boiling in the kettles from one to three hours before it is pumped through coolers to the cellar where it is aged, bottled and placed in kegs.

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BIOLOGY

Neutron Bombardment Fatal to Germ-Cells

BOMBARDMENT with neutrons (atomic particle discovered in 1932) so puts germ cells out of commission that they cannot function, an experiment on wasps, conducted with the aid of U. S. airmail transportation, has demonstrated (*Science*, July 17).

One of the important problems of science today is determining the effect that streams of neutrons have upon living things. One use suggested for them is the treatment of cancer and preliminary experiments offer the hope that they will be more effective than X-rays.

In a test conducted by Dr. P. W.

Whiting of the University of Pennsylvania, male wasps (*Habrobracon*) were sent to Berkeley, Calif., by airmail. There they were irradiated with neutrons from the giant cyclotron apparatus of Prof. Ernest O. Lawrence.

Airmailed back to Dr. Whiting's laboratory, the wasps were mated with untreated females. Because in the family life of these very small parasitic wasps all females come from fertilized eggs and all males from unfertilized eggs, the effect of the neutron irradiation could be determined by whether or not the number of females produced was smaller in the case of irradiated males.

The experiment showed that the neutrons had tended to put the male cells out of commission or, scientifically speaking, produced "dominant lethal genetic effects."

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PALEOBOTANY

Plants Crossed Pacific 200,000,000 Years Ago

EVIDENCE that plants migrated across the Northern Pacific Ocean nearly 200,000,000 years ago in the epoch of time that geologists call Lower Permian has been unearthed in Texas by Harvard explorers.

The discovery of two new species of *Tingia*, a genus of long extinct plants hitherto unknown in America but found in China, was announced by the Harvard University Botanical Museum where the specimens were studied.

Tingia are plants like cycads, a group that flourished for about a hundred million years (during the Mesozoic era) after the age of the discovery just made in Texas. Cycads living today in various parts of the world look like palms or ferns, with root-like trunks rising 20 to 60 feet crowned with leaves.

"This new discovery results in a much better understanding of international geological correlations in the Pacific provinces," declared Dr. William C. Darrah in commenting on the discovery.

The *Tingia* fossils occur beneath beds in which *Gigantopteris* plants were found and they were accompanied by plants known as *Callipteris* and *Walchia*. Finding the same fossils in both Western America and Eastern Asia is proof that there was free migration of them between the two continents. Harvard's Museum of Comparative Zoology field party has collected other fossil plants from a number of new localities in the Southwest.

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IN SCIENCE

ARCHAEOLOGY

Dawn of Civilization Traced in Honduras

EVIDENCE on the dawn of ancient America's highest Indian civilizations, which flowered in the tropics of Mexico and Central America, has been found in the jungle along the Ulua River in Honduras.

A joint expedition of the Smithsonian Institution and Harvard University, just returned, has discovered fragments of pottery which tell a significant story. Broken clay bowls and dishes were found scattered in layers of earth, one above another, showing a succession of inhabitants at several sites. The later people made pottery similar to the classical Mayan style, beautifully decorated in orange, red and black colors. The earlier folk had made simpler clay wares, but beautifully polished and incised. No trace of any earlier people has yet been found in this region.

Early evolution of the Mayan and other Indian groups that developed fine architecture, a writing system and astronomical knowledge in tropical America is a mysterious problem, that archaeological expeditions are eager to untangle.

Dr. W. D. Strong, leader of the expedition, stated that age of the pottery remains to be determined by geologic tests of the soil layers, and other devices.

Alfred Kidder 2d and Drexel Paul represented the Peabody Museum of Harvard on the expedition.

Ancient objects taken from the dwelling sites by the expedition have been deposited in the National Museum of Honduras at Tegucigalpa, to be preserved there for study.

The expedition explored also at Lake Yojoa, Honduras, finding there more evidence of old Indian dwellings lying in stratified deposits. They also investigated the earliest historical horizon at Naco, where the Spanish Conquistadores first encountered the Indians of Honduras. Fragments of pottery discovered at Naco suggest that this place was occupied by people of Aztec Indian culture who were late comers to this region south of Mexico.

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FIELDS

SEISMOLOGY

New Quake Strikes the Coast of Chile

AN EARTHQUAKE characterized as "strong" by scientists of the U. S. Coast and Geodetic Survey rocked the coast of Chile early Sunday, July 26, in the same region where an estimated half million dollars worth of damage occurred in the quake of July 13. Additional property damage, if not loss of life, seems probable.

The epicenter of the newest earthquake as calculated by government scientists from data wired to Science Service was 23.5 degrees west longitude and 71.0 degrees south latitude.

This location places the shock center near the towns of Taltal, Chanaral, Tocopilla and Copiapo. Time of the quake was 2:36.9 a.m. E.S.T., July 26. It is highly probable that the shock was felt at sea as well as on shore.

Seismological stations forwarding information to Science Service included: Georgetown University, Washington, D. C.; Fordham University, New York City; Dominion Meteorological Observatory, Victoria, B. C.; St. Louis University, St. Louis, Mo.; and the U. S. Coast and Geodetic Survey Station at Tucson, Ariz.

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ARCHAEOLOGY

Find 100-Room Ancient Fort in Arizona

FINDING ruins of a 100-room fort settlement on Black Mesa, Arizona, where Indians in the thirteenth century sought refuge and safety, is reported by the Rainbow Bridge-Monument Valley Expedition, now exploring in northern Arizona.

The ancient refuge is described by Dr. Ansel F. Hall, general director of the expedition, as consisting of a semi-circular structure two or three stories high on the crest of a hill, and smaller structures on the slope below.

Fragments of pottery collected at the ruins indicate to the archaeologists that Indians of the eastern and western Pueblo areas mingled there. This, Dr.

Hall explains, substantiates earlier discoveries pointing to a concentration of Indian peoples at defensive sites late in the thirteenth century. Soon after, the entire region was abandoned, probably due to effects of the Great Drought of that time.

Dr. Charles Del Norte Winning, of New York University, is field director of the expedition. Charles A. Amsden, of the Southwest Museum, Los Angeles, is chief archaeologist and is in charge of the archaeological camp in Tsegi Canyon. Dr. Clarence C. Clark, New York University, is chief of the biological group, which is working from a camp on Navajo Mountain. Dr. F. B. Loomis, Amherst College, is directing the expedition's geologists.

With new motor equipment, the expedition later this month will make a reconnaissance of parts of Monument Valley heretofore not crossed by motor. The reconnaissance will extend along the 110th meridian.

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INVENTION

Triggerless Machine Gun Shoots Without Powder

A CENTRIFUGAL machine gun which is intended to shoot bullets in rapid succession, on the same principle as that by which the sling used by David hurled the fatal stone which slew Goliath, is the subject matter of a U. S. patent (No. 2,043,117) recently granted to B. F. S. Baden-Powell, English inventor and army officer, who is known for his invention of the man-lifting kite.

The novel machine gun has no trigger and uses no powder to send its bullets against the enemy. Hence the familiar rat-tat-tat of conventional machine guns is eliminated. Centrifugal force, the same force that tilts a person riding in a car turning a corner, is the sole "explosive" which "fires" the deadly shell.

Mechanism of the centrifugal machine gun includes a barrel, which radiates from a pie-pan-like shaped chamber provided with a cylindrical wall. The barrel and its chamber spin around at high speed. Into the chamber a magazine carrying the shells drops the projectiles one by one at the proper time. The shells are spun around against the cylindrical wall of the chamber and are guided by a "pusher" mechanism into the breach of the gun. From here the shell is slammed into the barrel and is hurled out toward the target, like a stone from a sling.

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DENDROLOGY

War on Dutch Elm Disease To Save New England Trees

SPURRED by preliminary surveys indicating that the infestation of Dutch Elm disease is less this year than in 1935, Federal scientists are continuing their efforts to bring about the eradication of this dread affliction of elm trees. And their efforts will be backed by the new emergency WPA fund of \$1,125,000 recently made available.

Almost all of the near 4,000 Dutch Elm "scouts" now in the field searching for trees having the disease, or being trained for such work, will be employed in the critical battle zone—the area within a 50-mile radius of New York City.

But there are other regions now under suspicion besides the known disease center around the New York metropolitan area in the East. Maryland, Virginia, West Virginia, Tennessee, Missouri, Georgia, Alabama, Louisiana and Mississippi are also suspected.

The watchfulness in these states arises because the elm logs by which the tree disease originally was introduced into the United States came in through one of their seaports; or was used in veneer factories within the states; or because the logs traveled through them.

New York City, Boston, Baltimore, Norfolk, and New Orleans were the ports of entry for the diseased logs.

The only practical treatment for Dutch Elm disease now known, Department of Agriculture experts report, is the drastic one of prompt discovery and removal of every source of infection. Chop down the infected tree despite its size and beauty is the rule in the fight.

The present infestation of Dutch Elm disease came not from the Netherlands—as one might suspect from the name—but from special "burl" elm logs from France which are used as furniture veneer because of their ornamental, curly grain. While only a few shipments of logs are made each year, a careful watch is now kept on them, for no species of American elm seems to be immune to the ravages of the fungus growth causing the disease.

In 1933 infected trees were found in New Jersey counties near New York. In 1934 elm trees were succumbing at the rate of 200 a day.

Particularly worrisome has been the danger that the disease would spread into New England, where the elm is the most important shade tree.

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