

GENETICS

New Food Yeast Strain

Treatment with camphor vapor produces from *Torulopsis utilis* a new strain with cells bigger and with double content of edible protein.

➤ A NEW STRAIN of yeast, with cells double the size of its parent species, has been originated at the British government's Chemical Research Laboratory at Teddington. The increased cell volume seems to be hereditary and permanent, for it has remained constant through the many cell generations through which the new strain has now been propagated, Dr. A. C. Thaysen and Muriel Morris state in a joint report. (*Nature*, Nov. 6, 1943)

Dr. Thaysen and Miss Morris were working on a species of "wild" yeast, known technically as *Torulopsis utilis*, which appears to have definite promise as a quick-producing source of edible protein when raised in great mass cultures in vats. They wanted a strain with bigger cells, just as a potato breeder might want a strain with bigger tubers.

First they tried a solution of colchicine, which has had astonishing effects in producing giants among larger plants.

Colchicine failed to work, as did also another heredity-changing chemical, alpha naphthylamine.

However, the experimenters recalled the statement of another researcher, who claimed that camphor vapor caused changes in cell size in ordinary yeast. They tried this on their *Torulopsis* cultures, and presently were able to isolate a strain with cells slightly longer and decidedly thicker than those of the parent stock, with a net content a little more than twice as great.

Analyses showed that the chemical constitution of the new strain was not substantially different in most respects. It did, however, show considerably higher phosphorous content. Also, what may be of considerable practical significance later, the individual cells grow to full size and are ready to divide in considerably shorter time, despite their double size.

Science News Letter, January 8, 1944

GENERAL SCIENCE

Science in Leningrad

Despite incessant bombing and the vicious attacks of two winters, report indicates that the scientific institutions remain in good order.

➤ DESPITE the incessant bombing that the Luftwaffe gave Leningrad, and the vicious attacks of two winters during which it was besieged, the scientific institutions and buildings of that city remain in relatively good shape. Soviet scientists are preparing, as the enemy is driven back, to resume normal scientific life.

The conditions in Leningrad were surveyed by Academician Leon Orbeli, vice-president of the Academy of Sciences of the U.S.S.R. and director of the Pavlov Physiological Institute, in a report prepared by the Soviet Scientists' Anti-Fascist Committee.

The main buildings of the Leningrad Academy remain in good shape, largely due to the work and care of the scientists who remained there during the war. The old academy buildings and the eth-

nological museum that formerly housed Peter the First's collection of curiosities are still standing.

Only the botanical gardens suffered heavily. A direct hit demolished the conservatory, destroying rare palms of great value and other tropical plants. It is difficult, Academician Orbeli reported, to estimate the damage done to the country's scientific findings in the field of botany. The herbarium and world collection of seeds, however, are safe, having been removed to a bomb-proof shelter in good time. The employees of the botanical gardens have begun to restore the gardens and are now growing new seedlings.

Work on plants for camouflaged airdromes, cultivation of various medicinal herbs and consultations with truck gardeners are among the war projects of

the Botanical Institute, named in honor of Academician V. Komarov.

In the autumn of 1941 a bomb struck a building of the Pavlov Physiological Institute, but scientists were able to continue their work, as every dog used for experimental purposes was saved. Even during the most difficult months of the siege and blockade, Leningrad authorities supplied these animals with sufficient food.

Ivan Pavlov's closest colleague, Prof. Maria Fetrova, who remained in Leningrad, is conducting experiments on these dogs to determine the influence of bombings and shellings on higher nervous activity.

The Koltushi Experimental Station, in which Pavlov spent so much time during the last years of his life, remains the same and continues its scientific work.

Looking toward the day when normal scientific life can be resumed in Leningrad, the scientists are beginning to take necessary steps to repair the buildings of the Leningrad Academy and scientific institutions.

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BOTANY

Dropping of Cotton Buds Caused by Dim Light

➤ SUSPICIONS that the money-losing premature dropping of flower buds and immature bolls by cotton plants is caused



COLD WORK — This winter scene shows a U. S. Bureau of Mines exploratory crew working on the snow-clad slopes of Mt. Pleasant, Utah.

by dim light in very cloudy weather is supported by experimental evidence at the Texas Agricultural Experiment Station as reported by Dr. A. A. Dunlap. (*Science*, Dec. 24, 1943)

Dr. Dunlap grew cotton plants in greenhouses where the light intensity could be closely controlled, and also placed black cloth covers over field-grown plants. Light intensities were cut down to a twelfth, and even nearly to a fortieth, of normal Texas cotton-field sunshine. The plants lost, on an average, three-fourths of their buds and green bolls, or squares.

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ORNITHOLOGY

Giant Firecrackers Aid In Taking Bird Census

► WITH a ten-cent aerial bomb firecracker as a stimulant, male pheasants in a given five-mile area crow "present" to the census taker in a novel method of determining pheasant populations in game areas. H. Elliott McClure of the Nebraska Game, Forestation and Parks Commission describes this newly developed procedure. (*Journal of Wildlife Management*, January)

During a recent study on the calling of pheasants, Mr. McClure explains, it was noted that these birds responded by crowing following thunder, blasting, or shotgun explosions. Even such noises as the slamming of a car door or banging on a metal tub would stimulate them to crow. This peculiar response is the basis of Nebraska's pheasant-counting technique.

In taking the census, the census taker drives through the specific area from dawn until an hour after sunrise, the hours found to be best for pheasant response. At five-mile intervals, bombs are dropped and the responses counted.

One important weather restriction must be observed. Wind can spoil this method by carrying the sound of the bomb away or by preventing the distant calls of the pheasants from reaching the observer. The simple rule to be followed, therefore, is not to attempt to stimulate the birds by these bombs when there is a wind strong enough to blow out the match used to light the fuse.

"This method," Mr. McClure declares, "shows promise as compared with other methods of pheasant censusing, and when restrictions on the use of fireworks have been lifted, should be worth attempting in various states where the pheasant is important as a game bird."

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PHYSIOLOGY

"Resuscitators" Dangerous

Warning issued by Yale University physiologist that new devices, like old "pulmotors," impede natural breathing and may be fatal.

► WARNING that thousands of lives are in danger because physicians are being misled into promoting the use of "resuscitators" for victims of carbon monoxide or other asphyxia is issued by Prof. Yandell Henderson, of Yale University. (*Science*, Dec. 24, 1943)

One of these devices, which Prof. Henderson had tested and given an adverse report on to the American Medical Association has been "accepted" instead of disapproved by that association, Prof. Henderson states. In this respect, he says, the medical association is in direct antagonism to the American Red Cross.

His objections to "resuscitators," which he says represent only a slight change from the old "pulmotors," are that the rhythm of the "resuscitators" does not correspond to that of the patient's natural breathing but opposes and impedes it, and that in severe cases of asphyxia if the pull and suck part of the apparatus is turned off and the inhalational part turned on the victim's death warrant is signed because the mask and valves are such that much of the carbon monoxide coming out of the lungs is re-inhaled instead of being eliminated.

An inhalator for reviving asphyxiated patients has been invented by Prof. Henderson and his associate, Prof. Howard W. Haggard. This device has never been patented, nor its manufacture, sale or use limited in any way. It provides a method of resuscitation by inhalation of oxygen with enough carbon dioxide to induce a maximum minute-volume of respiration.

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Navy Uses Prone-Pressure

► THE NAVY'S Bureau of Medicine and Surgery, it was learned, has adopted the policy, in accordance with recommendations of the National Research Council, of emphasizing the Schafer prone-pressure manual method of artificial respiration to resuscitate victims of drowning, carbon monoxide asphyxia and the like.

The Bureau's policy is that no mechanical resuscitator should completely re-

place training of Navy personnel in the manual method of artificial respiration. Otherwise, it is felt, there might be a tendency to neglect training in the manual method and lives would be lost if personnel did not know this method at times when the mechanical resuscitators were not available because of destruction by bombing, for example.

The Bureau's policy statement also points out that with some types of mechanical resuscitators there is danger of injury to the lung tissue. The Bureau favors non-automatic inhalators to be used after breathing has been started by the manual method of artificial respiration. It favors the use of mechanical automatic resuscitators only if used by medical personnel in certain complicated cases such as patients with abdominal wounds for whom the prone pressure method might not be suitable.

Science News Letter, January 8, 1944

MEDICINE

Special Operation For "Jeep Disease"

► A METHOD of operating for "jeep disease" which cuts the time the average soldier-patient must stay in the hospital from 68.4 to 22.6 days is reported by Maj. Paul N. Mutschmann and Lieut. George A. Mitchell, M.C., A.U.S. (*Journal, American Medical Association*, Jan. 1)

"Jeep disease" is the name given by another surgeon to pilonidal disease. This condition of cysts and sinuses at the base of the spine is greatly aggravated by vigorous military training and conditions of mechanized warfare.

The operation described by Maj. Mutschmann and Lieut. Mitchell is not a new one but a modification by which the operative wound is only partly closed instead of being sewed up tightly. With this method, they report, the soldier patient can be up and about on the sixth to ninth day after operation and back on duty in about 22 days. Compared with a previous method of operating, this method saved 2,392 days of hospitalization for 52 patients.

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