GENETICS

Plants Springing Up In Atom-Blasted Cities

➤ PLANTS, reported growing already on the sites of the Japanese cities blasted by atomic bombs, should be examined by trained geneticists for possible clues to the truth or falsity of the "death-ray" stories diligently propagated by the Japanese press and radio, seemingly as a bid for sympathy.

If the soil in which they are growing really was so impregnated with radioactive substances that it is still giving off secondary radiations dangerous to human and other life, effects should show up in the plants, as a higher-than-average occurrence of mutations or "sports"—sudden evolutionary changes appearing in seedlings from seeds that will be borne by the plants now growing.

Changes of this sort have been induced experimentally in the past, by bombarding the seed-forming organs of plants with X-rays, radium radiations, etc. If such changes do not appear, or are not unusually numerous, additional doubt will be cast on the Japanese "horror-ray" stories.

Science News Letter, September 15, 1945

ASTRONOMY

Evergreens Will Greet Visitors to Mars

➤ ADVENTUROUS travelers to Mars in the 21st century may welcome the sight of familiar evergreen plants which Prof. Gabriel A. Tikhoff of Tikhoff Observatory, Leningrad, believes exist on the planet.

In addition to the polar caps of ordinary ice and the moist green areas which flourish in early summer, there are other regions on the planet where plants grow that retain their color throughout the winter, Prof. Tikhoff states.

Replying to opponents of the theory that plants live on Mars, Prof. Tikhoff said that conifers reflect the infrared rays of the sun less readily than deciduous trees, which lose their foliage every year. Since conifers are believed to protect themselves from winter's cold by this reduced reflection of infrared rays, which carry considerable heat energy, he stated, this feature would probably be even more strongly developed on Mars. This would account for the absence of great brilliance in infrared photographs of the planet.

This winter Prof. Tikhoff plans to investigate further the plant life of Mars, he reported to the Soviet Scientists Anti-Fascist Committee. He will photograph the spectrum of various types of foliage from mountainous altitudes.

Science News Letter, September 15, 1945

CHEMISTRY

Peanuts Keep Best at Moderately Low Humidity

➤ PEANUTS and peanut candy spoil soonest when humidity is high, keep best when it is held at a controlled level of about 60%, Dr. J. G. Woodroof and associates at the Georgia Experiment Station have discovered.

Best thing to do with freshly harvested peanuts, they found, is to dry them rapidly. A current of hot air at 130 degrees Fahrenheit for about eight hours was found adequate for the purpose. After that, the moisture content of the peanuts themselves should be held as close to 5% as possible.

Best moisture percentages for various peanut products were found to be: roasted peanuts, 1.5%; hard peanut candies, 2%; soft peanut candies, 5%; peanut flour, 4%.

Salted peanuts, which are roasted in oil, keep better if the processing is done in fresh oil. Peanuts roasted in re-used oil tend to spoil more readily in moist atmospheres.

Science News Letter, September 15, 1945

CHEMISTRY

Rubber-Film Linings For Shipping Caustics

➤ SHIPMENT of caustic soda and caustic potash in metal drums or tank cars is made safer and more satisfactory by a simple process whereby they are given rubber-film linings, covered by patent 2,384,111, which was obtained by Dwight Means of Wadsworth, Ohio, assignor to the Pittsburgh Plate Glass Company.

It is customary to fill containers with the caustics in molten form, and to heat them again when preparing to empty them. In their heated state the caustics are highly corrosive, which not only increases risks in handling them but introduces iron from the container as an impurity in the chemical. Mr. Means remedies this by coating the inner surface of the container with rubber latex in which sulfur and other vulcanizing materials are already incorporated. When the hot caustic is poured in, the heat suffices to vulcanize the rubber into a firm, impermeable protective surface.

Science News Letter, September 15, 1945

IN SCIEN

MEDICINE

Old Indian Arrow Poison Tried as Polio Remedy

➤ THE USE of curare, the old Indian arrow poison, in the treatment of infantile paralysis is reported by Dr. Nicholas S. Ransohoff, of Long Branch, N. J., in the *Journal of the American Medical Association,* (Sept. 8).

The arrow poison was tried in four consecutive cases at Monmouth Memorial Hospital. "Striking improvement of the symptoms" was obtained, Dr. Ransohoff states.

Physicians do not ordinarily report on the value of a treatment that has been tried in only four cases, but Dr. Ransohoff states that he is making this "preliminary" report because "there is a great deal of infantile paralysis in the country at the present time and it is hoped that other observers will use this drug."

Science News Letter, September 15, 1945

METALLURGY

Process Promises Better And Brighter Tinplate

➤ BETTER and brighter tinplate, for cans, bottle caps and a thousand other uses, is promised by a new process on which U. S. patent 2,384,086 has been issued, to Charles E. Glock of Baltimore. The tin is deposited on the steel or black-iron sheet as the latter is passed vertically through an electrolytic bath in a continuous strip. After being coated, the sheet is cold-rolled at very high pressure—250,000 to 500,000 pounds are the figures given by the inventor—at speeds up to 2,000 feet a minute. The metal is slightly elongated during the rolling, increase in length being on the order of 5/32 inch for every 25 inches.

Because the plate is at no time brought into contact with oil, its surface is kept in good condition to take printing or lithographing, often used on can labels and bottle caps. During the process a film of water is maintained on the surface, to protect it against oxygen in the air and prevent incipient rusting.

Mr. Glock has assigned his patent rights to the Crown Cork and Seal Company.

Science News Letter, September 15, 1945

CE FIELDS

ASTRONOMY

Earth and the Universe Of About the Same Age

➤ THE EARTH'S crust solidified some three thousand million years ago when millions of galaxies, stars and stellar dust particles were closely packed together, estimates Dr. Harlow Shapley, director of the Harvard College Observatory. The age of the earth's crust is not at all insignificant compared with the creation of the universe, he believes.

Measurement of the ages of the oldest rocks on the earth is likewise a measurement of the total duration of the earth itself, Dr. Shapley states, for the earth quickly changed from the normal, hot, ionized, turbulent, gaseous state of stellar matter to the relatively cold, dead, crusted body of a small or medium-sized planet.

Any earth-sized gaseous or liquid body, isolated in sidereal space, would freeze into solid matter (rocks) practically instantaneously in terms of cosmic time, Dr. Shapley points out in the *American Journal of Science*.

Science News Letter, September 15, 1945

ENGINEERING

Compact Unit Makes Pure Water for Soldiers

➤ A STATIONARY unit capable of purifying 72,000 gallons of water a day can be shipped, knocked down, in eight large crates that fit into one-half of a box-car. Widely used to furnish our troops with drinking water, both at home and in the Pacific area, each unit is the equivalent of the average small town municipal water works.

Where it takes six months to a year to purchase and install the water supply plant for a small town, the Army unit of similar capacity can be set up, by unskilled labor, in two days, the War Department states.

The unit was developed under the direction of the Chief of Engineers three years ago to insure the purity of water at new camps. The Army already was using the portable type of purifier and the mobile unit, but the Engineers wanted a larger plant, capable of supplying a whole camp with potable water.

Exactly 72 hours after the rough sketch was drawn, the first unit had been manufactured, assembled and was operating. Within six days a new factory had been set up by Wallace and Tiernan of Newark, N. J., to manufacture the units.

Pupils in manual training classes, instead of enjoying a summer vacation, were hired as workers and their instructors as foremen. A three-shift day was established and the youngsters raced each other to see which shift could produce the most in eight hours. The contract was completed and the hundredth carload left the plant 44 days after the project was launched. Most of the workers went into the Army and many of them operated the plants abroad.

The unit requires five gasoline-driven pumps. Two "low lift" pumps pick up the water from the source, while two "high lift" pumps force it from the filter to the distribution system. A high-capacity pump backwashes the filter to remove the dirt taken from the water.

Alum, soda ash and chlorine are all added as soon as the water is taken from the source. It passes through flocculation baffles which mix it up. Floc formed by the alum traps foreign material in the water and it then passes to the filter which removes the remaining material. The water is again chlorinated to insure sterilization. Part of the clear water is stored for washing the filter which must be cleaned with pure water.

The plant has controllers, regulators and indicators to show the volume of water, amount of chemicals added and other features which make it practically foolproof.

Science News Letter, September 15, 1945

INVENTION

Modified "Iron Lung" For Polio Patients

➤ INFANTILE paralysis victims who require artificial aid in breathing are promised an improvement over the usual type of "iron lung," in an invention by Dennis R. Scanlan of St. Paul, Minn., on which U. S. patent 2,383,821 has been granted. Instead of enclosing the patient's body in a metal chamber, with only his head projecting, the new device encloses the torso only, and consists mainly of rubber or other flexible material, with only a metal breastplate through which the necessary respiratory movements are transmitted. The patient is able to move his limbs with considerable freedom, and to have his bed raised to varying reclining angles, thus escaping the monotony of lying flat on his back all the time.

Science News Letter, September 15, 1945

HERPETOLOGY

Garden Snake Litter Measures Over 32 Feet

➤ FIFTY-TWO offspring of a 36-inch garter snake, if placed end to end, would measure over 385.7 inches in length. Since common garter snakes in Ohio usually have from 14 to 30 young, a litter of 57, only three of which were stillborn—and two escaped before they could be measured—is quite unusual, John Thornton Wood of the Dayton Public Museum states in the scientific journal *Copeia*. While the average total length of the young snakes was 7.4 inches, the shortest was 6.65 inches and the longest 8.0 inches.

Science News Letter, September 15, 1945

ASTRONOMY

Passage of Meteors Recorded Automatically

➤ PASSING meteors or "shooting stars" can now be recorded automatically and their brilliance measured by an apparatus which includes two photo-electric cells in a balanced circuit. This is the first known electrical recording of meteors, according to Dr. C. W. Gartlein, of Cornell University, who designed the apparatus with Joseph C. Logue of the school of electrical engineering. In the past information concerning meteors was obtained from visual observations.

The photo-electric cells are "aimed" at different portions of the sky, and are so synchronized that when one cell intercepts light which is brighter than that being received by the other, a recording pen on the graph is set in motion.

The jagged line made by the pen not only records the presence and duration of a meteor in the field covered by the photo-electric cell, but also gives a reading of the brilliance of the light. This may be measured accurately by comparing it with the amount of light received by the other cell at the same moment.

Meteors recorded during a meteor shower this August were between zero and one magnitude of brilliance, or about as bright as the star Vega, which is overhead at this season.

The apparatus was designed in connection with the work being done at Cornell on the aurora borealis. Dr. Gartlein said it offers the possibility of counting meteors automatically, eliminating the necessity of observers, and also obtaining more accurate measurement of meteor brilliance.

Science News Letter, September 15, 1945