

MEDICINE

Giant X-Ray Tube Proving Its Worth in Cancer Cases

FIRST reports of the results of treating cancer by powerful gamma rays from the giant 900,000 volt X-ray tube of the California Institute of Technology have been made by Dr. Albert Soiland, chief of the Soiland Clinic, Los Angeles.

"Encouraging" and "hopeful" are the words Dr. Soiland used in describing the results obtained with patients suffering from advanced cancer. Before the five-year treatment period is over, Dr. Soiland and associates feel, as do all scientific cancer workers, no definite conclusions can be drawn. No statistics of scientific value can be established before this period has passed, he stated in a report to the Oklahoma City Clinical Society.

For the past four years, however, a group of advanced cancer patients have been undergoing treatment at the institute in Pasadena where the giant tube is housed and at Dr. Soiland's clinic where there is now a similar tube.

"We have seen results in a few advanced patients with cancer which had not yielded to treatment with our lower voltages," is Dr. Soiland's conservative way of reporting the results of the first four years' work.

The shorter wavelengths of the rays from the big tube permit more of them to penetrate to the deeper layers of the body, he explained. This accounts for the following three distinct advantages over treatment by lower voltages. The period required for treatment is shorter; there is less skin irritation; and unpleasant stomach sensations are largely avoided.

Science News Letter, December 8, 1934

SEISMOLOGY

Equatorial Earthquake Recorded at Many Stations

A STRONG earthquake almost on the equator, on the other side of the world, was recorded by a number of observatories in the United States and its territories on Tuesday, Nov. 27, at 1:14 a. m., eastern standard time. Deciphering radio and wire messages sent to Science Service, seismologists of the U. S. Coast and Geodetic Survey located an approximate epicenter, apparently under the sea, in latitude 1 de-

gree north, longitude 127 degrees east. This is near the coast of New Guinea.

Stations reporting to Science Service were those of Manila Observatory, Manila, P. I.; of the Jesuit Seismological Association at St. Louis University, St. Louis, Mo.; Canisius College, Buffalo, N. Y.; and Georgetown University, Washington D. C.; and of the U. S. Coast and Geodetic Survey at Honolulu, Sitka, and Tucson, Ariz.

The earthquake that shook Manila on Monday, Nov. 26, was apparently a submarine disturbance. A radiogram received by the U. S. Coast and Geodetic Survey from the Manila Observatory states its epicenter was about seventy miles southwest of the city, as nearly as could be determined. It does not seem to have been a shock of major severity, since no other observatories have reported detecting it.

Science News Letter, December 8, 1934

PALEONTOLOGY

Real Sea Serpent Swam Ancient Virginia Sea

REAL sea serpents once swam in the offshore waters near the present site of the national capital. They were, apparently, at least as large as the biggest living land snakes. But they never scared anybody, or got stories about themselves in the papers, because they lived sixty million years ago, long before the first human beings appeared.

Evidence for the existence of these ancient sea monsters has been turned over to the Smithsonian Institution in the shape of a single fossil vertebra, or backbone joint, picked up on Belvedere Beach, Va., by Dr. W. Gardner Lynn of the Johns Hopkins University. By comparing this one bone with those of living serpents, Dr. C. W. Gilmore of the U. S. National Museum has been able to make a size estimate of the extinct sea serpent. He judges it to have been perhaps about 25 feet long, and thick in proportion. That is about as big as a really large modern python, of which this Virginia sea serpent may have been a remote cousin, though not an ancestor.

Dr. Gilmore has named the monster *Paleophis virginianus*, which is Greco-Latin for "ancient Virginian serpent." It had some contemporaries almost as large as itself, two of which have been found in New Jersey and one in Alabama. They were all sea dwellers.

Science News Letter, December 8, 1934

IN SCIEN

VETERINARY MEDICINE

Operations on Dead Animals Save Unborn Young Alive

CAESARIAN operations performed successfully on wild animals by an amateur at veterinary surgery, are reported from the San Diego Zoological Park.

The young animals thus brought forth prematurely into the world included two wood rats and three rabbits, it was revealed when Walter P. Terry of National City, Calif., offered his specimens to the zoo.

Several months ago, Mr. Terry said, he shot a rabbit and discovered she was carrying four unborn young. With his pocket knife the hunter obtained the babies. Three were raised by his wife with an eye dropper and milk-soaked cotton. Later, he related, he shot a wood rat in the same condition and saved two of the young.

"This sort of operation has been performed on dogs and cats, but I never heard of it before on wild animals," said Mrs. Belle Benchley, director of the Zoological Garden. The former pets of Mrs. Terry will be placed on display.

Science News Letter, December 8, 1934

ASTRONOMY

200-Inch Telescope Disk Successfully Poured

A SECOND 200-inch telescope mirror disk to replace the one cast last March, was poured on December 2 at the Corning Glass Works at Corning, N. Y. The event with its fiery furnaces and ladles of red hot glass was not witnessed by the public during the time of the actual pouring, which was a complete success.

The 200-inch disk when finally completed will be installed in the world's largest telescope to be located on Mt. Palomar, a site only recently selected, in southern California. Final grinding and polishing to an accuracy of a millionth of an inch will be done at the California Institute of Technology.

Science News Letter, December 8, 1934

CE FIELDS

HORTICULTURE

New Hybrid Potatoes Resist Late Blight

POTATO late blight, one of the most serious of crop diseases, causing millions of dollars' worth of loss in wet years, bids fair to be eradicated if experiments now being conducted by Dr. Donald Reddick, plant pathologist of Cornell University, are finally successful.

Returning from a survey trip in the highlands of central Mexico, Dr. Reddick brought back several close relatives of the potato that are immune to the disease. These plants, grown in the University's greenhouses and gardens, were used as parents for crosses with the common potato.

About 200 blight-immune hybrids are being carried along in Dr. Reddick's experiments. From this list a dozen were selected that had the appearance of domestic varieties and bore from six to nine tubers of commercial size, white and smooth.

Science News Letter, December 8, 1934

ASTRONOMY

Moon's Surface Made Of Ash and Pumice

VOLCANIC ash and pumice. That is what the moon's surface is made of, if a Carnegie Institution of Washington committee of scientists have the correct evidence.

Green cheese has never been considered moon material except in nursery rhymes, but scientists have wondered whether the lunar landscape is made of dark, solid rocks like most of the earth's surface.

The reflected sunlight that reaches earth one and a quarter seconds after leaving the moon brings a message to scientists. Because it is relatively little polarized or set to vibrating in one direction, as it would be if it came from dense dark rocks, it is concluded that the moon rocks are like the light, translucent rocks and materials found around volcanoes here on earth. The rapidity with which the moon drops in tem-

perature when the eclipse shadow of the earth sweeps over it also argues for a moon surface largely made of silica and produced by volcanism.

While the moon was once the scene of great catastrophic movements and crustal movements, it is "dead" in comparison with the earth. It is without air and water, and no protective blanketing atmosphere softens the impact of the sun's rays and prevents the escape of heat. Temperature fluctuates violently. Moon craters make earthly volcanoes dwarfs in comparison. Moon mountains are unlike earth mountains and geologists have difficulty understanding them. Moon mountain heights reach 25,000 feet and the deepest crater has a depth of 24,000 feet.

Four miniature moons have been prepared by the committee chairman, Dr. F. E. Wright of the Geophysical Laboratory, Washington, D. C. to facilitate the latest study of the moon. These globes are the world's first spherical photographic negatives, specially coated and fashioned for this research.

Science News Letter, December 8, 1934

RADIO

New Short Wave Station Opened at Harvard

A NEW short wave station, equipped with a beam antenna which allows the broadcasting of radio waves in a straight line, has been constructed on the roof of the physics building at Harvard University by Prof. Harry R. Mimno.

The experimental station operates on a wavelength of five meters. Its antenna can be elevated or depressed on a horizontal axis as well as turned from side to side. At present it is carrying on communication with the short wave stations at Blue Hill Observatory, Mass., and West Hartford, Conn.

Because short waves travel in optical lines, that is, in lines similar to beams of light, it was thought until recently that such waves could not go more than fifty miles due to the blocking effect of the horizon. Very rarely do short waves reflect from the Heaviside layer, according to Prof. Mimno. When it was recently found that the station in West Hartford, more than eighty miles away from Boston and across a range of hills, could receive the signals, new evidence was provided that indicates the short wave theory needs revision.

Science News Letter, December 8, 1934

BACTERIOLOGY

Babylon's "Solid Beer" Bacterially Brewed

"SOLID beer" was a standby of the Babylonians and ancient Arabs when they went on a long journey. Just what this stuff was, and how it was made, has been traced by Prof. Paul Lindner, Berlin bacteriologist, with the assistance of Dr. Engelbert Huber, student of the history of brewing.

The early Arabs, according to ancient texts, knew the "solid beer" under the name of "saviq"; their predecessors the Babylonians, gave it the more bubbly title of "hubur bulug gar." It was not sold by liquid measure, but in lumps by weight, and was carried wrapped up in packages on camel-back. When the caravan made camp, some of the lumps were soaked in water, which quickly fermented into a refreshing drink of low alcoholic content.

The lumps of "solid beer" appear to have been made of a special kind of bread, in which barley malt was a prominent ingredient, and frequently containing also a considerable proportion of sweet date pulp. This bread was baked at a moderate temperature on hot stones, and then packed up.

The quick fermentation, Prof. Lindner is convinced, was due to the action not of yeasts but of a species of bacterium which he himself discovered and identified some years ago, known as *Termobacterium mobile*. It is found in warm regions throughout the world, and plays a leading part in the quick fermentation of the milder beers made of palm sap and other ingredients by primitive peoples. Prof. Lindner believes that this bacterium would either be left unkilld by the mild baking of the "saviq," or that it would readily find its way into the mash made by soaking it in water.

The art of making "saviq" has apparently been lost by the town-dwelling Arabs of the Near East, but it may possibly survive among the nomadic tribes of the desert. Prof. Lindner therefore has appealed to scientists who may be in contact with such tribes to obtain a small sample of the solid for him, or even a few drops of the fermented liquid, so that he may examine it for the presence of *Termobacterium*.

"Even a few drops, concealed if necessary under the stamp on a postcard, would serve the purpose," he says.

Science News Letter, December 8, 1934