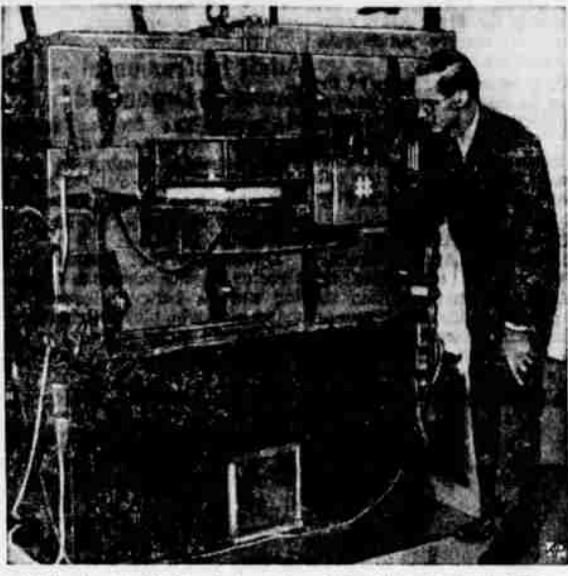


FOCUS ON CANCER: POLE-SHAPED X-RAY IS NEW TREATMENT



AIM—Model of patient's head is aligned for treatment

GUN—Dr. D. W. Kerst, inventor of betatron, looks it over

Powder Concern To Locate in KF

Wilmington, Del., Nov. 1 (AP)—The Hercules Powder company announced tonight it will build a pilot plant at Klamath Falls, Ore., for study of the chemistry of western woods. It may be a forerunner of extensive expansion in the west.

Property of some 50 acres was bought for the project from the Weyerhaeuser Timber company. It includes several small buildings, a powerhouse, railroad sidings, fire lines and a water tower.

Hercules has been conducting research on western woods for two years and further process research is planned at the new location.

"The western woods contain a number of interesting organic chemicals," A. E. Forster, a director of the company said. "These include some of commercial value."

"Hercules will make use of extensive experience in the extraction of chemicals from the wood gained in the southeastern United States. Depending upon the results of the pilot plant work in Klamath Falls, Hercules may require, at some time in the future, substantial manufacturing facilities in the western states."



Files Suit—Arthur R. Van Wyke of Los Angeles, financier, and an associate filed a damage suit in Los Angeles federal court asking \$72,100,000 from an oil company and various individuals. He charges a metallic lubricant in which he is interested was adulterated, resulting in huge losses for the product. (AP Wirephoto.)

Chicago—The University of Illinois College of Medicine has a beam of X-rays the shape of a pole.

This is something new in beams of any kind. Other beams are fan-shaped. This beam is used to treat cancer and comes from a betatron, a new high-energy electrical machine producing 25-million volt X-rays.

The rays are invisible, but photographic film reveals their peculiar formation.

The betatron is a box, higher than your head, sheathed in metal, none of the inner works visible. Shoulder high on the betatron face is a round hole, big as your wrist. A yard in front of the hole Dr. John S. Laughlin sets up a target, a sheet of photographic film.

When the film is developed, it shows a round, black disc, the same size as the hole in the betatron's face. The edges of the black spot are sharp as if cut by a knife. The X-rays went through bunched, as rigid as if they had the form of a long, round pole.

This betatron beam reaches a cancer with the accuracy of a surgeon's knife.

The rays drive so hard that they pass through skin and surface tissues without causing much damage. As they hit the tissues the rays produce electrons, but these too travel so hard and so fast that they cause little surface burning.

The greatest burning effect is deep below the skin. This makes the pole-shaped beam a new cancer tool.

Aiming this invisible beam is difficult. The target is an unseen place inside the body. The bullets are invisible. Only the patient can be in the room when the betatron fires.

Models of the cancer patient have to be made for aiming.

To date marksmanship has been only on heads and necks. The model heads are exact reproductions of the patient's lines and contours, perfect enough to be prize-winning sculptures. The model is set in the position the patient will occupy, and surveying fixes this position down to the smallest fraction of an inch.

Phantom heads are made of scores of thin layers. Between each layer is a sheet of photographic film. The beam is shot into this phantom, and the film records the X-ray strength and damage at every depth.

The patient sits or lies in the measured position. He feels no pain, in fact he doesn't feel the ray at all. But he cannot wear a collar button. He must not wear his glasses. Because either metal might become radioactive.

Occasionally when these 25-million volt rays strike something they are captured some-

for the treatment was completed, but an autopsy showed the cancerous tissue almost completely destroyed, without apparent damage to surrounding tissues.

what like a billiard ball in a corner pocket. In this capture they often transmute the atoms they strike. This is the same transmutation as done in atomic piles, and creates the same kinds of radioactivity.

Because of this the walls of the betatron room are covered with materials that do not transmit readily. This induced radioactivity is no risk to the patient, but could interfere with accuracy in the instruments.

Dr. Roger A. Harvey, radiologist in charge of treatment, refuses predictions. Four persons have been treated. The first was at the University of Illinois, Urbana, where Dr. Donald W. Kerst, inventor of the betatron has several of these machines. There a 22-million volt beam was focused on a deep brain cancer upon which conventional X-ray surgery had failed. The patient died of another cause be-

for the treatment was completed, but an autopsy showed the cancerous tissue almost completely destroyed, without apparent damage to surrounding tissues.

Festival Scheduled For Salem Heights

Salem Heights—The annual harvest festival of the Mother's club of the Salem Heights school will be held at the Salem Heights school Friday evening at 7:30 o'clock, along with open house.

Each room at the school will participate in the festival along with the Salem Heights Woman's club, the Little Garden club of Salem Heights, Boy Scout troop 19, cub pack 18, Camp Fire girls and Bluebirds, and the Salem Heights Community club. The Mothers' club will have charge of the kitchen. This is open to the public and all parents and friends are invited.

The adult frog breathes by swallowing air and has no ribs.

Farmers' 1950 Net Income Expected to Show Decline

By DILLON GRAHAM

Washington, Nov. 1 (AP)—Farmers' realized net income may drop 13 per cent next year, government economists say.

Agriculture department economists checked over crops and prices and trends and come up with this prediction for 1950.

A 15 per cent decline below 1949 would be almost as big a drop as occurred this year, the department's report said.

But, it cheerfully pointed out: "This still would be more than two and a half times the average 1935-39 net income."

And—

"Lower net income probably would be offset in part by somewhat lower living costs in 1950."

Of special interest to Iowa, where most of the hogs are raised (and whose farmers lead the country in income) is the forecast for:

1. More hogs.
2. Lower prices for pork and hogs.

The report also said: Farm costs in 1950 are likely to decline moderately, but more than this year.

The cost of labor, expenditures for feed and livestock, depreciation charges and rents may be lower.

But other outlays, such as taxes, farm mortgage interest, and fertilizers, may be about the same or even a little higher. There'll be more meat but

Capital Journal, Salem, Ore., Tuesday, November 1, 1949—11

"Farmers' actual expenditures on buildings, machinery and other equipment are already declining in 1949 and are likely to be down substantially in 1950," the report said.

"Farmers' net cash available for family living after deducting actual cash expenditures for production purposes, will show smaller declines in both years than their realized net incomes."

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