MEDICINE

X-Ray Spray Gives Better Treatment For Leukemia

Nobel Prize Winner Announces New Treatment for Invariably Fatal Ailment; Patients Live Longer

OPTIMISTIC progress in combatting chronic leukemia was announced at the meeting of the American Medical Association.

A better method of treating patients with this invariably fatal ailment was reported by Dr. William P. Murphy, of Boston, who shared the Nobel prize in medicine in 1934 for his work leading to the liver treatment for saving patients with pernicious anemia.

Dr. Murphy has not succeeded in curing leukemia, but he reports that with the treatment he developed patients live a little longer and much more comfortably. The women in his series of cases were able to continue with household duties, one of the men continued his ministerial duties, and most striking of all, perhaps, a bus driver who had arthritis as well as leukemia was able, after treatment for both conditions, to do hard labor for three or four years without undue fatigue.

The treatment Dr. Murphy advised fellow physicians to adopt consists in "spraying" the body with small doses of X-rays from a distance. X-ray treatment has long been used for this condition, but the rays have generally been directed in large doses to the spleen and bone marrow, where blood cells are formed.

Leukemia is characterized by excessive numbers of white cells in the blood. The intensive X-ray treatment has usually made the patients so miserable with nausea and loss of appetite and weakness due to sudden decrease in number of white blood cells that they usually dread the treatment and wait until they are in desperate condition before taking it. Smaller doses of X-rays given more frequently and by the "spray" technic over large areas of the body is not so hard on the patient and controls the disease better, Dr. Murphy found. The frequency of treatment, he said, should be determined by blood tests and the patient's general condition.

Chronic leukemia, he believes, results from a lack of some substance necessary for the maturing of white blood cells or their origination in much the same manner as pernicious anemia results from a deficiency of some substance concerned in red blood cell production. This is shown by the way in which the white cells respond to X-ray treatments of small dosage. The deficient factor in leukemia is supplied in some manner by the X-rays in small doses, probably less satisfactorily by large doses which may also destroy cells.

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ERRATA, Vol. 37, Nos. 1-26, January-June, 1940

PAGE	TITLE BEGINS	CORRECTIONS
8	Salmon Taken For a Ride	Par. 1, lines 5-7 *to read*: below the Rock Island Dam, in the Grand Coulee area, to favorable points for laying their eggs in the upstream waters of 4 streams emptying into the Columbia River below Grand Coulee Dam.
9	Ancient Eskimos	Line 1, Alaska *for* Canada
20	Federal Health Service	Line 9, R. Cox *for* E. Cox
24	Three New White Dwarfs	Heading: *Read* Per Cubic Inch
35	Find New Weapon Against	Line 4, *Delete* initial B.
36	Find New Weapon Against	Col. 1, *Delete last paragraph*
36	Discovery Refutes Report	Par. 9, line 5, acids *for* aciods
56	Anti-Bleeding Property	See *SNL*, Mar. 9, 1940, p. 153.
58	Five Evening Stars	Par. 2, line 4, *read* turning from west to east.
60	Diesel Airplane	Par. 2, line 2, *delete* and Holland,
		Par. 3, line 3, air-cooled *for* new liquid-cooled
79	Oil Discoveries	Line 1, To *for* So
88	Gas from Apples	Par. 3, line 8, *after* ethylene *period. Delete rest of sentence*
105	Metallic Sodium	Line 6, *to read*: exposed to water the hydrogen produced often bursts into flame.
		Par. 2, line 11, oxygen *for* hydrogen
122	Planets Still Bright	Col. 3, line 13, 1752 *for* 1758
135	Ideas	Caption, Dr. Floyd C. Turner *for* Dr. Floyd C. Taylor
143	Power House	Par. 2, line 1 *to read*: Discussing for the American Institute of Electrical Engineers
154	New Written Language	Col. 3, *delete* Par. 2
185	Press in Airplane Plant	Line 10, *after* stretched *insert* is clamped between two rows of jaws. A form of the desired shape
232	Bomb Sight is Patented	Par. 2, line 4, Estoppey *for* Estoppy
255	Physiology	Head should read Psychology, Psychiatry
277	Academicians	Caption, line 15, F. Jones *for* R. Jones
299	Virus Disease	Line 4, *read*, traced to either a virus origin or a genetically transmitted abnormality
303	New Theory	Col. 3, line 3, 10 billion *for* 10,000
307	What About Atomic Power	Col. 2, par. 4, line 5, F. Joliot *for* J. Joliot
344	Armor for British Tommy	Line 7, Kenneth *for* Kenenth
		Par. 2, line 5, Winston *for* Winton
380	Negro's Ability to Stand	Par. 8, *delete* line 4. *After* explained, *insert* the man is "usually on the verge of exhaustion."
319	Telefact	*Tortoise not mammal. Shown for comparison.*

PHYSICS

America's 16th Cyclotron To Be Built At Illinois

AMERICA'S sixteenth cyclotron will be built at the University of Illinois.

The new machine at Illinois will be rated at 10,000,000 to 30,000,000 electron volts acceleration. An older Illinois cyclotron is rated at 1,000,000 volts.

The new cyclotron will be somewhat smaller than any of the 15 others now in operation or under construction, but roughly equivalent to any in results. It will send out atomic particles at speeds of 20,000 to 40,000 miles per second. That is more than one-tenth the speed of light.

A cyclotron is used for studying the composition of matter by smashing atoms. It is also used in the production of artificially radioactive substances. These are used in research in physics, chemistry, and biology.

Prof. P. Gerald Kruger, who built the University's small cyclotron in 1936, also is in charge of the new machine. Its bulkiest part will be an electromagnet with a 60-ton iron core. The magnet will be wound with two miles of copper bar which will weigh 10 tons. It will be supported on a 37-ton concrete foundation.

Construction will take at least a year. The machine will cost $31,500. Radiations from it will equal those from 300,000 grams (600 pounds) of radium, which would be worth, if it existed, $6,000,000,000, nearly equal to the value of all the homes, personal property, and passenger automobiles in the State of Illinois.

Prof. Kruger spent the last half of 1939 working in the University of California at Berkeley laboratory of Prof. E. O. Lawrence, who was awarded the 1939 Nobel prize in physics for his development of the cyclotron. There Prof. Kruger studied the effect of cyclotron-bombarded materials upon cancer.

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