MEDICINE

Live To Be 125

Serum made from the bone marrow of cadavers is believed by Russian scientist to be possible weapon against old age, cancer and high blood pressure.

➤ FIRST-HAND reports of a Soviet scientist's efforts to develop a weapon against cancer, high blood pressure and premature old age by a special kind of serum which has proved useful in stimulating wound healing are brought to American medical scientists in *American Review of Soviet Medicine*. (December)

The serum, called anti-reticular cytotoxic serum, ACS for short, was developed by Prof. Alexander A. Bogomolets, director of the Institute of Experimental Biology and Pathology which has been moved from Kiev to Ufa for the duration of the war.

It is made by inoculating horses with the cells of the spleen and bone marrow taken from a human cadaver. Cadavers of persons who died a sudden death and had no infectious disease are most suitable. Details of preparing and testing the serum are given in the same issue of the medical journal by P. D. Marchuk of Prof. Bogomolets' staff.

Unlike anti-diphtheritic serum and other serums developed against specific diseases, ACS does not act as a weapon against specific disease germs or their poisons. Instead, Prof. Bogomolets explains, it acts to stimulate the reactivity of the connective tissue in the body.

This connective tissue, as the name implies, binds together and supports various structures of the body. The layman recognizes connective tissue in the bones and cartilage, but it is found in many other structures. According to the modern view, this connective tissue is not merely a kind of skeleton or framework for the body structures but has other functions as well.

Prof. Bogomolets takes the view that the physiologic system of the connective tissue is the arena in which disease processes develop. Keeping this system on a sufficiently high level of activity he therefore considers one of the most important problems in treating disease. That is what his serum is designed to do and that is why he believes it can be a weapon against such diverse conditions as scarlet fever, childbed fever and other infections; cancer; high blood pressure; the mental disease schizophrenia; and the deteriorations of premature old age.

Forestalling premature old age has been the chief aim of Prof. Bogomolets' scientific investigations, according to a biographical note by Miss Dorothy A. Halpern, managing editor of the *American Review of Soviet Medicine*.

The usual life span of man, he believes, should be 125 to 150 years, since the life span of an animal is five to six times longer than its period of maturation. His serum was developed to stimulate the physiologic system on which, he believes, rests man's ability to resist infection and other disease processes like cancer which shorten the life span.

The war has curtailed his experiments on longevity and all activities of his Institute are now directed toward producing enough of the serum to meet the needs of the battlefront, where Soviet physicians and surgeons have found it useful in stimulating wound healing and the union of fractured bones.

It would be desirable, Dr. Henry E. Sigerist, editor of the *American Review of Soviet Medicine,* states in a note on Prof. Bogomolets' report, to have experiments with the serum carried out in this country. Any institution interested in the matter can obtain additional scientific reports from the medical journal's editorial offices.

Science News Letter, January 8, 1944

MEDICINE

Sulfa Drugs for Colds Are Disappointing

➤ LATEST REPORT on the much-discussed question of whether sulfa drugs should be given for the common cold is again disappointingly negative.

This time Dr. Russell L. Cecil, Maj. Norman Plummer, M.C., A.U.S., and Dr. Wilson G. Smillie report (*Journal,*

SOLUTION—Dynamite is the new answer to the problem of how to remove a drill broken off in a crankshaft. In this method, devised by Nels Sorenson, right, of the Ohio Crankshaft Co., a small amount—less than a thimbleful—of dynamite is pushed into the hole and set off with a fuse. The pressure of the blast is said to follow the drill flutes to the bottom of the hole, there reversing itself to drive the drill free. A plank laid over the hole stops the drill as it flies out.

American Medical Association, Jan. 1) their results of a careful study at New York Hospital and Cornell Medical College of 72 colds in 66 different persons. Small doses of sulfadiazine were given by mouth daily for four days to 48 of these cold victims, while 24 served as controls.

The treatment did not shorten or alter the course of uncomplicated colds, they report. No striking benefits were seen in the complicated colds. The number of germs, other than the cold virus itself, at the back of the nose above the soft palate decreased uniformly under the treatment and the growth of disease-causing germs, such as pneumococci and hemolytic streptococci, was checked. The cold virus itself is known not to be affected by sulfa drugs.

The physicians therefore are opposed to routine use of sulfa drugs for the common cold but favor their use in a few selected cases as protection against severe secondary infection or complications. Giving sulfadiazine by mouth is simpler and more dependable, they found, than trying to apply a sulfa drug directly to the nose and throat.

Science News Letter, January 8, 1944

MEDICINE

Leukemia Conquest Hope

Resistance to this fatal malignant disease is apparently related to the endocrine glands, studies with animals reveal.

➤A NEW LEAD in the search for a way to conquer leukemia, fatal malignant disease characterized by increased number of white cells in the blood, appears in a report by Dr. James B. Murphy and Dr. Ernest Sturm, of the Rockefeller Institute for Medical Research. (*Science,* Dec. 24, 1943)

Resistance to leukemia, their studies show, is apparently related to the glands of internal secretion. These glands include the pituitary, thyroid, thymus, adrenals and sex glands. Exactly which of these glands are involved and how the scientists do not yet know, but their evidence implicates both the thymus and adrenal glands.

The studies so far have been made with rats. Removal of the adrenal glands greatly reduced the resistance of these animals to a highly malignant form of transplantable lymphatic leukemia. Less than half, 46.9%, of a group of these animals from a strain very receptive to this transplantable leukemia developed the disease upon inoculation, but almost all, 90.3%, of a group of animals of the same receptive strain developed it when inoculated after their adrenal glands had been removed.

The disease in these animals is characterized by extensive invasion of the thymus gland, which other scientists have found is greatly stimulated by loss of the adrenal glands. Lack of these glands and their hormones apparently upsets the normal balance between the various endocrine glands in such a way as to make the animals more susceptible to this form of leukemia.

Further work along this line, it is hoped, will show what specific glandular imbalance may be responsible for lack of resistance to leukemia. If this can be learned, and if the rat findings apply also to man, it may be possible to find a way of stimulating leukemia resistance so as to prevent or cure the disease. The work is still a long way from that hoped-for, life-saving stage, but is believed to be at least a step in that direction.

Science News Letter, January 8, 1944

PUBLIC HEALTH

Insect Disease Carriers Critical Health Problem

➤ THE PROBLEM of introduction of insect carriers of disease is one of the most critical now facing health authorities of the U. S., Brig. Gen. James S. Simmons, director of the preventive medicine division, Office of the Surgeon General, U. S. Army, declared at the American Public Health Association meeting in New York City.

Malaria, the diarrheas and dysenteries, and venereal disease are the three big disease problems of the Army, he found on an extensive tour of theaters of operations.

Typhus fever, which a few years ago would have been the fourth big plague threatening the Army's health and would have been put first 50 years ago, is not now giving any worry at all. The new anti-louse powder the soldier shakes into his clothing, methyl bromide to delouse clothing he has been wearing, and the Cox anti-typhus vaccine are the three weapons which have protected the American Army from this former war plague.

On the controversial question of atabrine versus quinine for malaria, Gen. Simmons said in his opinion atabrine is as good as quinine and is "thankful to God" we have developed atabrine production in this country so we can supply ourselves and the world. Critical research studies, moreover, have established that it can be safely given to flying personnel.

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