

MEDICINE

Mystery of Fatal Blood Disease Now Nears Solution

THE MYSTERY of agranulocytosis, a new and fatal disease of too few white cells in the blood, seems nearer solution as a result of studies reported by Drs. Francis P. Parker and Roy R. Kracke of Emory University, Ga., to the American Society of Clinical Pathologists.

The disease is apparently caused by certain popular headache remedies and pain-relieving drugs which contain a chemical group known as the benzene ring, investigators have found. That discovery, however, did not entirely solve the mystery of the disease because so many persons use these drugs in large quantities while comparatively few develop the disease.

Benzene's effect of reducing the number of white blood cells may take place by reducing the amount of a sulfur-containing substance found in blood and bone marrow, the studies now reported indicate. This substance is glutathione and it is thought to be responsible for speeding up cell division in the bone marrow where blood cells are formed.

Examination of the bone marrow in cases of granulopenia showed that the rate of cell division was slowed up. Consequently Drs. Parker and Kracke believe the relation between the benzene and the glutathione is at the basis of the disease.

It is not yet possible to say whether the benzene reduces the glutathione and thus slows up cell division and consequent production of new white blood cells, or whether it works the other way around and persons with less glutathione develop the disease when they start taking the benzene-containing drugs.

The changes in glutathione content of the blood of patients suffering from various blood diseases was studied. The results suggest that depletion of the reduced form of glutathione in the bone marrow or blood stream may lead to reduction of white cells in the blood.

Liver extracts, which are used to treat conditions of too few white cells, like agranulocytosis, contain a large amount of reduced glutathione, which may mean that it is this substance that is responsible for the improvement obtained with liver treatment of these diseases. Another substance used to treat these conditions, pentnucleotide, contained only a trace of the reduced glutathione.

The disease is twice as common among women as men. First observed in 1922, it seems to have been on the increase in recent years. It caused thirteen hundred deaths in the United States during the three years 1931-1934. It starts suddenly with fever and sore throat and usually ends fatally in spite of vigorous treatment.

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GENETICS

Epilepsy In Mice May Give Light On Human Disease

INHERITANCE of some forms of epilepsy in humans may be explained as a result of the discovery of hereditary epilepsy in a species of American mouse, it is suggested by Dr. Lee R. Dice of the Museum of Zoology at the University of Michigan.

Dr. Dice has just reported his discov-

ery that epilepsy is a hereditary trait in the species of mouse known as *Peromyscus maniculatus artemisiae* and found in Franklin County, Washington.

A typical epileptic fit occurs in this mouse when it is subjected to sudden or disagreeable sounds or a change in surroundings. Sometimes the fit is severe enough to kill the mouse. The mouse is probably born with some faulty development of the nervous system which makes it impossible for the animal to adjust to unusual conditions which would not affect ordinary mice, Dr. Dice explains.

Further study of the disease in these mice will, Dr. Dice hopes, shed light on the inheritance of some forms of human epilepsy.

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AERONAUTICS

Balloon to be "Surveyed" To Check Its Altitude

THE NATION'S system of topographical surveys, criss-crossing the country like an invisible giant fish net, will help check the altitude of the Explorer II, giant stratosphere balloon of the National Geographic Society-U. S. Army Air Corps when it takes the air.

In unprecedented degree the altitude of the flight will be accurately checked from a multitude of ground stations along the path of the aerial trip by a corps of volunteer surveyors who will take up stations at the Federal "bench marks." These bench marks are bronze markers spaced 30 miles apart throughout the Plains region. They are the key points in the nation's system of topographical survey. The exact positions of the markers are known with great accuracy and from them the surveyors, with transit telescope, will be able to make measurements on the altitude of the balloon every fifteen minutes while it is in view.

Equipped with automobiles having radios, special code signals will be broadcast every fifteen minutes, at which time all the surveyors in sight of the balloon will take readings on its stratospheric positions. By trigonometry these readings can be translated into elevation above the surface of the earth. These observed altitudes can be checked with the sealed barographs aboard the Explorer II and thus check the accuracy of these instruments at high altitudes.

A third check on altitude at every instant will be the great aerial camera taking photographs of the ground below the balloon at frequent intervals.

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