MEDICINE

Machine Measures Blood

➤ A NEW MACHINE that uses radioactive blood cells to determine the amount of blood in the body has been developed by Dr. Salomon N. Albert, clinical instructor in anesthesiology, George Washington University, Washington.

The "isotope univac" might save the life of accident or surgical cases by giving a quick and accurate estimate of how much blood is left in the body, Dr. Albert said, and now makes this life-saving knowledge quickly accessible to the ordinary hospital staff.

To find out how much blood a patient has, he is first given an injection of a salt solution containing red blood cells that have been tagged with radioactive chromium 51. About 15 minutes later, a small blood sample is taken from the patient's arm, put in a coiled plastic tube, and inserted into the typewriter-sized machine.

Within three to five minutes the machine has measured the radioactivity of the blood sample and computed the total volume of blood in the body. Then the answer turns up and can be read directly off the machine with no further calculations, Dr. Albert said.

Radioactive isotopes have been used before to make blood volume determinations, but the technique was extremely complicated and required "slide rules and calculators" as well as special training, the anesthesiologist explained.

"Our new machine now puts these valuable clinical data within the reach of ordinary physicians and hospital technicians," he said.

The machine will also prove a valuable aid to a number of lines of study in medicine and also in industries using radioisotopes for measurement, Dr. Albert said.

The specialized computer was developed by Dr. Albert and William O. Swann, a former electronic physicist. The work was made possible by a grant through the George Washington University.

Science News Letter, January 26, 1957

CONSERVATION

Man Outwits Mouse

➤ THE GOVERNMENT is trying to educate mice from eating animals out of house and home, trees out of the forests and taxpayers out of money.

To cure themselves of a serious headache, Government biologists are now trying to give field mice a serious bellyache. The educational program is designed to teach field mice that when they greedily eat forest seeds, they will become ill. The hope of the program is that the mice will learn to eat other food and let sleeping seeds lie.

The saga of "mice and men" was told in Washington by the U. S. Fish and Wildlife Service, which hopes to save the nation "millions of dollars" now being destroyed by hungry mice.

It seems that field mice have been eating more than their share of newly planted fir, spruce and pine seeds. Conventional control methods, the biologists report, were unsuccessful, mostly because when one population of foragers was eliminated, another batch nearby moved in to dine.

Even new methods that were thought up and tried failed. Repellents, for example, were seeded along with the seeds, but white-footed deer mice turned up their snouts and tails and continued to munch away on as much as 90% of the new seeds planted.

The biologists did not want to kill the mice, they explain. If they did, other mice would come along anyway. So, the scientists at the Service's Denver Research Laboratory hit upon the "education program."

They coated the tree seeds with a nonlethal dose of a poisonous chemical. A mouse which eats the coated seed does not die, but becomes sick to his little stomach. This, the scientists say, teaches him never again to eat those nasty little morsels.

In addition, because animals have a tendency to protect their own territory, the educated mice stay around to repel uneducated mice.

The biologists coat the seeds with four different chemicals. The "unhappiness pill" with its four-purpose seed coating contains the chemical which makes the mouse sick, is deadly to some insects, protects the seed against a fungus disease and makes it unattractive to birds.

Scientists and lumbermen are hopeful that treated seeds are the answer to reforestation problems that have plagued them.

Science News Letter, January 26, 1957

PHYSIOLOGY

Medical Device Shows Singer's Voice Range

➤ A TENOR or bass voice might not be tenor or bass at all, a voice and speech teacher reports.

He identifies singers' voices by looking inside their throats instead of listening to them.

By using a laryngoscope, a medical instrument for examining the larynx or voice box, William A. C. Zerffi, New School for Social Research, New York, reports he can spot a singer's voice even before the first note is sung. All one has to do is take a peek at the vocal cords to see how long they are, he reports. The shorter the cords, the higher the voice.

Voice identification has usually been left to the teacher's judgment, Mr. Zerffi said, but sometimes the teacher might decide a man is a tenor when he really is something else.

Misidentification like this comes from both bad singing habits and the human ability to imitate various sounds, Mr. Zerffi reported, and it can lead to improper training, bad singing habits and a short career.

If a singer is not taught to sing within his natural range, he must exert physical force to the vocal cords, and it is 'little short of criminal to apply such force to so delicate a mechanism," Mr. Zerffi said.

He reports his use of the laryngoscope in *Archives of Otolaryngology* (Jan.), published by the American Medical Association.

Science News Letter, January 26, 1957

MEDICINE

Blood Disease Brought Fall of Royal Families

➤ A STRANGE disease of the blood helped bring about the fall of royal families of Europe and change the face of history, Dr. Carroll L. Birch, University of Illinois College of Medicine, told the Society of Medical History of Chicago in Chicago.

The disease is hemophilia, or bleeder's disease, the rare condition in which the blood clots too slowly and victims of the disease can bleed to death from small cuts and bruises. Almost 90% of them die before they reach adult life, Dr. Birch said.

This killing and crippling disease swept across two major royal families of Europe and led to the eventual overthrow of the Spanish crown in Western Europe, and the rise of Communism in Eastern Europe, the medical professor said.

Queen Victoria of Great Britain introduced the disease into the royal family, and from there it spread by marriage to the Spanish and Russian monarchs, he said.

One of Queen Victoria's daughters was a carrier of the disease and she became the mother of Kaiser Wilhelm of World War I fame. Although he did not have the disease, at least one of his brothers suffered from it.

Another of Queen Victoria's daughters had a daughter of her own, Princess Alix, who carried the disease. After marrying Nicholas II, Czar of all the Russians, she became the mother of the ill-fated and hemophilic heir to the Russian throne. It was then that Nicholas and his wife called in the mad monk Rasputin. In the guise of curing their son, he worked his way into the most powerful position in Russia and touched off the history-making Russian revolution of 1917.

Still another of Queen Victoria's daughters had two hemophilic sons and a daughter who married Alfonso XIII of Spain, the last king of Spain. They had five sons, only one of whom was normal.

These defective princes no doubt influenced the overthrow of the Spanish throne, too, Dr. Birch said.

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