

MEDICINE

Plasmin Dissolves Clots

Plasmin, an enzyme in blood plasma, from human donors has been successfully used in animal experiments to dissolve blood clots.

► HUMAN PLASMIN has successfully dissolved blood clots in the blocked arteries of experimental animals.

This may lead to a possible solution to the difficult problem of blood clot formation during surgery of the arteries, Drs. J. Leonel Villavicencio and Richard Warren of the Department of Surgery, Harvard Medical School, speculated at the meeting of the American College of Surgeons in Chicago.

The team of doctors induced arterial clots in the animals and then injected the human plasmin, an enzyme in blood plasma. Blood flow appeared within from 11 to 27 minutes after the injection.

In several cases new clot formations were noticed when the injections were discontinued.

Additional progress in attaining a satisfactory replacement for a cancerous or damaged windpipe was also outlined at the meeting by Lt. Col. William H. Moncrief Jr. and Capt. Joseph E. Salvatore of the Walter Reed Institute of Research and Walter Reed Medical Center, Washington, D. C.

The synthetic trachea prosthesis must meet these standards: Permanency, proper fit between the cut ends of the windpipe, enough rigidity so as not to collapse on intake of air, and yet enough elasticity to provide some "give."

What had been expected to be an ideal plastic replacement was found to lose its elasticity after three months of implantation, the Walter Reed team reported.

The substance is a liquid plastisol, polyvinyl chloride, that can be fused at temperatures of 350 to 400 degrees Fahrenheit. It is flexible enough but tough. However, new methods of prolonging the elastic life of the substance will require further investigation.

So-called plasticizers can be added to produce pliability, but these tend to leach out, leaving a non-pliable material.

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OBSTETRICS

One of Every 15 U. S. Births Is Premature

► ONE OF EVERY 15 babies now born in the United States is premature, but each has a chance for survival today.

Nevertheless, one-fourth of these babies, particularly the smallest infants, face life with some degree of brain impairment.

Only 20 years ago, a baby born three months early had little chance of survival. Today, the same baby has a 25% chance to live, despite the fact that he probably weighs less than two pounds. Babies weighing two or more pounds have a 72% chance of survival.

Some of the more important factors involved in the care and treatment of premature babies include supplying the correct amount of oxygen to prevent brain damage, special nourishment for underdeveloped digestive tracts, prevention of jaundice due to

underdeveloped liver, a supply of heat and a regulated temperature control for the incubator itself, and a strict antiseptic atmosphere.

Much of the progress in solving these problems that has led to a higher survival rate for premature infants has been the result of the work of Dr. William A. Silverman, director of Babies Hospital nursery for premature infants in New York. The American Academy of Pediatrics will award Dr. Silverman their highest honor in Chicago on Oct. 21.

Presently, Dr. Silverman is probing into the answer to the question of proper temperature conditions for the premature. A report of the Columbia-Presbyterian Medical Center has described Dr. Silverman's part in determining that oxygen can cause eye damage. He also found that administration of sulfa drugs to premature infants threatened by infection actually produced brain damage.

By coming into the world too soon, the premature infant has rolled back a curtain to reveal some of the hitherto impenetrable mysteries of the development before birth.

Defects recently thought to be the result of the immutable genes are now known to be caused by environmental accident.

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● RADIO

Saturday, Oct. 25, 1958, 1:35-1:45 p.m., EDT "Adventures in Science" with Watson Davis, director of Science Service, over the CBS Radio network. Check your local CBS station.

Dr. William E. Davies, geologist, U. S. Geological Survey, Washington, D. C., and recently president of the National Speleological Society, will talk on "Exploring Caves".

SEISMOLOGY

Record Waves From Blast 7,000 Miles Away

► A SEISMOGRAPH can detect a nuclear explosion even when it takes place nearly a third of the way around the earth.

In what "is apparently the first report of surface waves (from nuclear blasts) at large distances from surface or elevated sources," Drs. Jack Oliver and Maurice Ewing of Columbia University's Lamont Geological Observatory, say that Observatory seismographs recorded surface waves from nuclear test blasts in the Marshall Islands, more than 7,000 miles away.

There is a great similarity between natural and nuclear explosion-generated earthquake waves, the scientists point out in the *Proceedings of the National Academy of Sciences* (Aug.). Studies of one should provide information about the other.

Earthquake interference prevented detection of one explosion. However, explosion-generated waves from another test shot were identified in spite of earthquake interference.

All the information gathered at the Observatory was from explosions on or above the earth's surface, the scientists report. No surface waves were recorded from the underground explosion in Nevada September, 1957.

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SEISMOGRAPH STUDY—Dr. Maurice Ewing, director of Columbia University's Lamont Geological Observatory at Palisades, N. Y., checks seismograph records at the Observatory.