

MEDICINE

Find New Clotting Factor

Fifth substance necessary to produce clotting has been found in blood. It is a protein which has already been successful against a rare bleeding disease.

► A NEW PROTEIN which plays an important role in clotting has been discovered in blood.

The new blood-clotting factor was described to the International Society of Hematology meeting in Buffalo, N. Y., by scientists from this country and Norway.

Dr. Paul A. Owren of the University of Oslo, Norway, reported that he found the protein in 1944. He called it the fifth coagulation factor. Working independently last year, American scientists located the clotting factor and termed it ac-globulin. The "ac" is for accelerator, because it is one of the triggers that sets in motion the clotting process.

Four previously known substances are all necessary to produce clotting in blood. Prothrombin, a blood protein, must be activated by thromboplastin, a substance present in tissues, and calcium to form thrombin. Thrombin is the intermediate substance that acts on fibrinogen, the fourth factor necessary in coagulation to form the blood clot.

How ac-globulin, the new fifth blood-clotting factor, helps produce prothrombin was explained by Drs. Walter H. Seegers and Arnold G. Ware of the Wayne University College of Medicine, Detroit.

Their work has been aimed at isolating the new factor in pure form in a laboratory

test tube. Although it is difficult to separate, they said that they are very near to getting the substance in purified form.

The Norwegian scientist who first discovered the new protein reported that he has successfully treated one patient with it.

Dr. Owren said the patient came to his hospital clinic with a very rare bleeding disease which the Norwegian doctor calls parahemophilia. After treatment with this new clotting factor, supplied from normal human plasma, the patient was relieved of her bleeding tendency.

Because the disease is so rare, physicians here said that at present they have no way of knowing how often it might occur. Only a few cases have been reported in the U. S.

Usefulness of the new factor in dicumarol treatment was investigated by Dr. John H. Olwin of the University of Illinois College of Medicine, Chicago.

Dicumarol is the anti-blood-clotting drug that comes from spoiled sweet clover. It is used for treatment of certain heart conditions where there is a tendency for the blood to clot in the veins.

Dr. Olwin said that ac-globulin appeared to have only minor importance in this type of treatment. But he described a new two-stage method which he has developed for safer handling of patients on dicumarol.

Science News Letter, September 4, 1948

They took the longest time to get back to normal—14 weeks.

In the first stage then, the blood cells which usually formed in the bone marrow disappeared. However, some radiation-resistant cells, called histoblasts, remained. These are the young cells, originators of all the cells that are found in the blood.

These multiply and within eight weeks the whole bone marrow becomes filled with young blood cells. However, there is a catch to this happy state of affairs. The cells don't grow up but remain in their baby state.

At this point transfusions are needed to tide the patient over into the third month when the blood-forming system reasserts itself and cells begin to mature.

Science News Letter, September 4, 1948

PUBLIC HEALTH

Proportion of Babies Born In Hospitals Increases

► A LARGER PROPORTION of new babies in 1946 were born in hospitals than ever before, figures compiled by the National Bureau of Vital Statistics revealed.

From 1935 to 1946 the number of hospital births jumped from 36.9% to 82.4% of the total births. In 1935, 50.6% of the registered live births were attended outside hospitals by doctors, and 12.5% were attended by mid-wives and others. In 1946, only 12.2% of births were handled outside hospitals by doctors. Only 5.4% were attended by persons outside the medical profession.

While almost all the white births were attended by physicians, for non-white births less than two out of three had physicians present and slightly less than half occurred in hospitals.

There was also a difference between births in urban areas and in rural areas. For city dwellers 92.5% of the registered live births took place in hospitals, compared with 67.1% for country dwellers.

Science News Letter, September 4, 1948

ELECTRONICS

Flawless Glass Produced By Electric Heating

► FLAWLESS GLASS by an electrical heating process is now being produced, using electrical equipment developed by General Electric, it was revealed. The electric current, passed through the glass, is converted into heat by the resistance of the material much as it is in the heating element in ordinary heaters.

Glass melting with electricity has been practiced in Europe for a number of years, but the product frequently was discolored or contained air bubbles. With the new American process these faults do not result and the product is glass of the highest quality. When the glass is melted, it can be poured and molded into desired shapes.

Science News Letter, September 4, 1948

MEDICINE

Infantile Blood System

The atomic bomb will reduce your blood-forming system to an embryonic state in first few months after radiation exposure, study indicates.

► THE ATOMIC BOMB will make a baby of you, not through fear alone but by its effect on your blood-forming system, the International Society of Hematology was told in Buffalo.

This picture of how a lethal dose of radiation will convert your blood system to an embryonic state was presented by Col. Elbert DeCoursey of Brooke General Hospital, San Antonio, Texas.

Col. DeCoursey made his study from material he picked up at Nagasaki and Hiroshima while a member of the Joint Commission for the Study of the Effects of the Atomic Bomb.

From this he made the unexpected discovery that when the cells in the bone marrow attempt to regenerate after killing

doses of radiation, they make plasma cells. These cells are of the same type as the cancerous lesions in multiple myelomas.

Col. DeCoursey described the blood picture as follows:

Lymphocytes, white blood cells from lymph glands, decreased within 48 hours, reaching their lowest peak after four weeks. They returned to normal in 12 weeks in the patients who lived.

Granulocytes, white blood cells from bone marrow, also decreased within 48 hours, reaching their lowest number within four weeks, but they returned to normal within eight to nine weeks.

Red blood cells decreased drastically some time during the first week, reaching the lowest point within six to eight weeks.