MEDICINE

Blood Processed Quickly

Almost instantaneous separation method uses continuous sterile centrifugation. Plasma and cells separated before donor leaves cot.

See Front Cover

➤ BLOOD DONATED to the American Red Cross for our fighting men or to hospital blood banks can be separated into plasma and red blood cells almost instantaneously by a new processing device announced recently.

Actually the plasma and cells are separated before the donor has gotten off the cot or table where he lay while giving the blood. And the quick separation is done in a way that keeps the blood sterile, or free from outside germs.

The saving in time is expected to make more quantities of blood fractions available in pure state. More and better blood medicines for various diseases may then become available because scientists will have more of these pure fractions for research into possible uses. Theoretically, it should also be possible to store red blood cells for longer than the present 21-day limit, because the quick separation will protect them from enzymes and other chemicals in blood plasma which now are believed the cause of the breakdown of the red cells.

The new blood separating device was designed by Charles A. Ellis, engineer of the American Optical Company. The need for such a device was first suggested by Dr. Edwin J. Cohn of Harvard, and Mr. Ellis worked in close collaboration with Dr. Cohn in designing and building the blood fractionator.

So far, only a pilot model has been built. It is now in Lisbon, Portugal, where Dr. Cohn will demonstrate it at the International Blood Transfusion Conference. It will be used as the model for a future production series, though these are not expected to be available before next year.

This pilot model is shown in the photograph on the cover of this week's SCIENCE NEWS LETTER. A series of trial tests with the device were made at the Bussey Institution of Harvard University before the equipment was shipped to Lisbon.

The device works on the principle of continuous sterile centrifugation. Blood from the donor as it is drawn passes through a tube where calcium is removed and clotting prevented.

It is then cooled and goes into a spinning glass bowl shaped something like an upside down fish bowl with flattened top. The flattened top provides a shelf on which the red cells are caught while the plasma runs down the sloping sides into the bottle for it. By changing the speed at which the bowl spins, the red cells are made to slide off the shelf into another bottle. The automatic timing device makes possible the separation of the different components.

Science News Letter, August 4, 1951

PHYSICS

Intense Radiation to Find Industrial Chemical Use

➤ TWO GLOWING, intensely emitting bundles of radioactive energy have in each of them as much gamma ray punch as all the radium (2.2 pounds) that existed before the last World War.

The AEC and Brookhaven National Laboratory have announced that these 1000-curie sources of gamma radiation, one made of cobalt 60 and the other of tantalum 182, will be available to industry for experiments that otherwise could not be made.

First tests expected will be to determine the feasibility and safety of using such radiation for killing bacteria and for initiating or accelerating chemical reactions. MIT, Yale and University of Michigan scientists will work on these problems.

New methods of food preservation with intense gamma radiation will be studied by Columbia University scientists, who will investigate the possible toxicity of irradiated foods.

Brookhaven scientists have used the radiation from a cobalt 60 source to produce a clear plastic compound without the use of heat, pressure, or catalysts usually used in plastics manufacture. Under intense gamma radiation bombardment some molecules break into parts and recombine in other ways, or they polymerize, which means build up large molecules out of small ones.

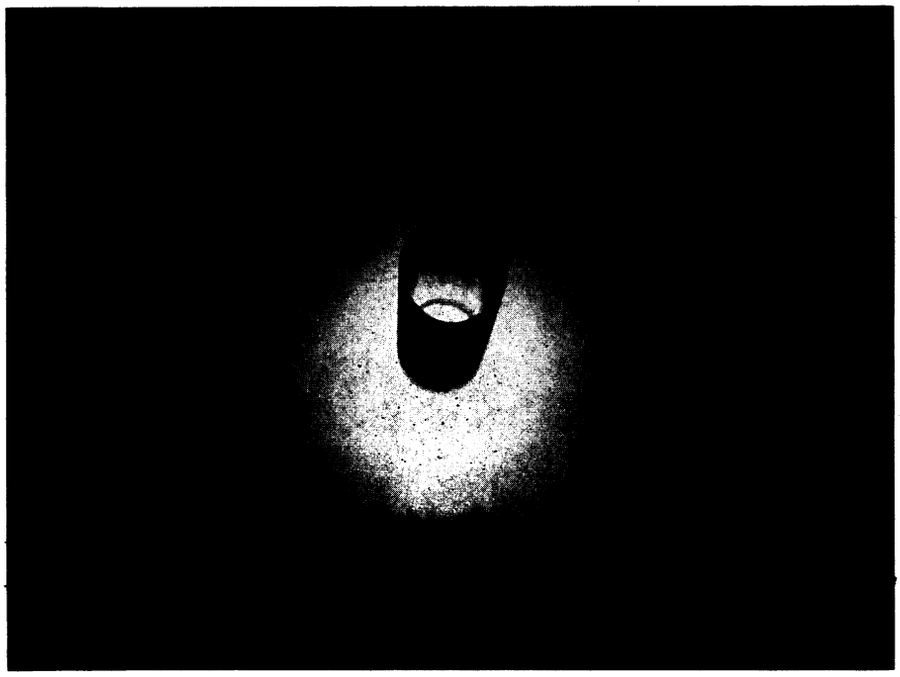
The gamma ray radiating materials are isotopes made in the Brookhaven atomic pile or nuclear reactor. Cobalt 60 has a half-life of 5.3 years, which means that half of its radiation dies out in that time, and tantalum 182 has a half-life of 117 days.

Science News Letter, August 4, 1951

Home Clothes-Drier Uses Electrical Heat

➤ CLOTHES-DRYING machine for the home is deep-freeze sized and uses electrical heat for drying. Patent 2,561,652 was awarded to John Thomas Dooland, Edmonton, Alberta, for this household aid.

Science News Letter, August 4, 1951



THOUSAND CURIE GLOW—Radioactive tantalum is shown here glowing under water, inside a steel pipe before transfer to protective lead shield. Water in this "canal" for radioactive materials provides a shield for technicians who use long, remote control tongs to lift the source into the pipe in the tray, lowered by the rope shown.