

## MEDICINE

# Powdered Blood Plasma May Replace Blood Banks

Ready for Instant Use Without Typing, Plasma Can Be Transported and Stored Without Change; Has War Use

**A** POWDER resembling powdered milk but with the vital properties of red blood is the new life-saving aid U. S. Army surgeons hope to have the next time American soldiers go into battle. Supplies of this powder, made from blood plasma, will, if it comes up to expectations, replace blood banks for blood transfusions in both military and civil practise.

Fluid blood plasma has already been shown to be as effective as whole blood for transfusions, Dr. John S. Elliott declared at the meeting of the Association of Military Surgeons of the United States in Cleveland.

Plasma is blood to which an agent has been added to prevent clotting and from which the red blood cells have been removed by centrifuging, somewhat as cream is separated from milk. It is a life-saving aid not only for patients who have lost blood from wounds, but for those who have been severely burned and those who are suffering from or in danger of shock.

Shock, a baffling and dangerous condition, is a "state of collapse affecting all the vital functions." It is a frequent cause of death in accidents, after severe burns, extensive surgical operations, virulent infections and severe intoxications. It was such a constant danger to the wounded during the World War One that committees in all nations were appointed to study it.

The most outstanding single factor in the production of shock is the decrease in the volume of blood circulating

through the body, Capt. Douglas B. Kendrick, Jr., U. S. Army, said.

"Replacement of lost fluid is by far the most important form of therapy known to prevent shock," he continued. "Early replacement is essential."

Plasma is as good for this as whole blood, both he and Dr. Elliott stated. For use in war, it is infinitely superior, because it can be safely stored for long periods, and can be transported by motor car, airplane, wagon, and aboard ship without alteration. It is ready for instant use, without blood typing procedures, and can be injected fairly rapidly.

The high mortality from shock could be greatly reduced, with the saving of many lives, if plasma were used to treat casualties as far forward as the battalion aid stations, Capt. Kendrick said.

Dried, powdered blood plasma, which can be easily and quickly made ready for use by mixing with water, has been developed by Dr. Max Strumia at the Bryn Mawr, Pa., Hospital. It has the advantage of being even more easily transported than fluid plasma. Experiments in a number of centers are now under way to test it and efforts are being made to find a way of producing it in large quantities.

If these succeed, the powdered plasma will probably replace both blood banks and the new plasma banks which the English are now using and for which Dr. William De Kleine, medical director of the American Red Cross, is now planning to enlist voluntary donors.

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## PLAYS OLD RECORDS

*Antiquated cylinder phonograph records are given new interest by modern reproduction methods. Here Percy Grainger, musician, and Elmer O. Thompson, inventor, are listening to some old recordings made by Mr. Grainger in 1905 to 1908.*

ists hopefully recorded folk music and primitive songs—and then stored the records away silent, afraid to play them even once. But the engineers have succeeded in making the music sound as it really was sung 40 years ago, not the way the old tin-horn phonograph hoarsely croaked it out.

Among keenly interested participants in the demonstration was Percy Grainger, noted composer and pianist. Nearly 300 cylinder records of folk music from all over the world, which Mr. Grainger himself recorded, about 1905 to 1908, will be transcribed to launch the Library of Congress' new task of making old and silent records hearable. Mr. Grainger has kept his records unplayed.

The new machine, which will enable the American public to hear thousands of old American folk songs, Indian songs, and voices of personalities long deceased, is an invention from the Philco Corporation's laboratories. Produced in about two months' intensive research by Elmer O. Thompson, laboratory engineer, the machine transcribes the old cylinders without danger of scratching away valuable words or music, as ordinary needles would do in a few playings.

The machine represents another job found for the now familiar electric eye,

## PHYSICS

# Old Phonograph Records Get Back Their Voices

**I**N A PREVIEW in Washington, in a tiny, crowded room at the Library of Congress, engineers demonstrated that they can at last rejuvenate old wax cylin-

der phonograph records of 40 years ago.

Not merely have they found a way to play safely thousands of frail cylinders on which scientists and musical archiv-