

PHYSICS

Medical Research Aided By Genius of Col. Lindbergh

THE MECHANICAL genius of Col. Charles A. Lindbergh has been enlisted in the Rockefeller Institute for Medical Research investigations, one of which is the problem of keeping portions of the animal body living indefinitely in a test tube.

As the result of months of work in the famous laboratory of Dr. Alexis Carrel, Col. Lindbergh has devised a new apparatus for washing red blood corpuscles, an operation that physiologists and bacteriologists must perform many times each day. Scientists who have studied the brief report and sketch of the centrifuge designed by Col. Lindbergh are of the opinion that the new apparatus and technique will find immediate practical use in laboratories.

The kidnaping of the Lindbergh baby rudely interrupted Col. Lindbergh's collaboration with the Nobel prizeman, Dr. Carrel, who is famous all over the world for his tissue culture work. Although Col. Lindbergh's modest report was not published in *Science* until April, it was prepared in February before the kidnaping and it is understood that Col. Lindbergh had begun work on another problem.

The Lindbergh centrifuge for washing red blood cells is a conical glass vessel which is whirled rapidly so that force upon the blood within it is 650 times that of gravity. Leading into the conical glass chamber is a glass tube connected to a reservoir of liquid to be used in washing the red blood cells. This apparatus allows the blood cells to be washed free of blood plasma at the same time that they are separated from the rest of the blood. A test made by Col. Lindbergh showed that in 15 minutes all but a fraction of one per cent. of the original fluid was removed by the washing process.

The conventional method of performing the same operation in the laboratory is separating the corpuscles by centrifuging and then washing them as a separate operation. Col. Lindbergh does both at the same time.

Col. Lindbergh's investigations at the Rockefeller Institute were kept secret until the publication of his report. Dr. Carrel when questioned on the rumors

that he had Col. Lindbergh for a collaborator would neither deny nor confirm the report, but said:

"While publicity about scientific discoveries is useful, publicity about the men who are expected to make these discoveries is just the opposite. Intellectual creation requires solitude and silence. If any celebrated man wishes to give research the aid of his imagination or technical ability, he should be entitled to the same privileges as any scientific worker."

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BACTERIOLOGY

Bacteriophage Used In Treating Blood-Poisoning

THE ALMOST hopeless outlook in one of the commoner kinds of blood-poisoning has been considerably brightened as a result of a new type of treat-

ment using the bacteriophage or bacteria-eater, Dr. W. J. MacNeal and Dr. Frances C. Frisbee of the New York Post-Graduate Medical School and Hospital reported to the joint meeting of the American Association of Pathologists and Bacteriologists and the American Association of Immunologists.

A bacteriophage able to destroy the staphylococcus germs found in the circulating blood in this type of blood-poisoning was used to treat patients suffering from this usually fatal disease. Out of a series of fifteen patients, eight died and seven recovered.

"There is reason to expect even further improvement in the death rate as greater skill is acquired in the use of this newer agent," Dr. MacNeal said.

The bacteriophage preparation in this series of cases was applied to open wounds and was injected into the tissues under the skin and into the circulating blood.

"Although the bacteriophage may completely destroy the bacteria in the test tube," said Dr. MacNeal, "it evidently is far less effective in the living tissues. Its successful use requires great care and the course of the disease eventually leading to recovery is prolonged and beset with many dangers."

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ASTRONOMY-METEOROLOGY

Shooting Star Trails Show Direction of Upper Air Winds

BRIGHT trails of meteors, or "shooting stars" tell scientists the direction and speed of winds in the high atmosphere, miles above the earth. Data thus obtained are valuable in the understanding of the behavior of radio waves and for our control over them.

At the meeting of the American Geophysical Union in Washington, Dr. E. Ö. Hulburt of the U. S. Naval Research Laboratory summarized what has been done to date and pointed out how amateur star watchers as well as professional astronomers can help in filling the gaps that still exist in our knowledge of these phenomena.

All the observations thus far on record were obtained in North America and Europe, plus a few made on shipboard on the North Atlantic. They indicate in general that the winds at levels from somewhat under twenty to about fifty miles blow toward the west

during daylight hours at least. Meteor trains observed at night were at higher levels—fifty to eighty miles up—and showed winds blowing in the opposite direction.

Not all the trains drifted in the "orthodox" directions, however; some were observed at various levels that indicated cross-currents, eddies or calms.

The total number of accurately observed meteor trains is still small, Dr. Hulburt said, because relatively few observers have taken the trouble to make even moderately accurate records of them. Elaborate equipment is not necessary, however, for obtaining data of this kind, that may prove invaluable to radio and other lines of scientific work. A small telescope, equipped with graduated scales to give celestial latitude and longitude, and capable of quick maneuvering, is all that is required.

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