

## PHYSIOLOGY

# Tissues, Rather Than Blood, Fight Invasion by Germs

Discoveries That Reverse Usual Medical Thought Bring \$1,000 Prize to Professor Kahn of University of Michigan

EDITOR'S NOTE: The annual \$1,000 prize for a notable paper delivered before the American Association for the Advancement of Science at its winter meeting just closed in Boston was awarded to Dr. Reuben L. Kahn, director of the Laboratories of the University Hospital and assistant professor of bacteriology at the University of Michigan, for his paper entitled, "Tissue Reaction in Immunity: The Specific Reacting Capacities of Different Tissues of an Immunized Animal," which is reported herewith.

Prof. Kahn has already received previous honors for his internationally known Kahn test for syphilis. He was born 46 years ago at Kovno, Lithuania, and is a naturalized citizen.

**A** NEW idea of how the human body fights its defensive battles against disease invasions was presented to the American Association for the Advancement of Science by Prof. Reuben L. Kahn, of the University of Michigan, who reported evidence that skin, muscles and other fixed tissues, and not the blood, are the "shock troops" in our continual struggle to keep healthy.

Usual medical thought considers the protective forces against germ invasion centered largely in the blood and other body fluids in which are found phagocytes, or bacteria-eating cells. Skin and muscle are usually considered hypersensitive to the same germ that, because of protective immunization, is subdued by the blood.

Experimenting with rabbits treated with much the same sort of serum that is so successfully protecting thousands of children against diphtheria, Prof. Kahn finds that skin and muscle as well as blood receive immunity when the living body is given protective treatment. In fact the skin, probably because it has been the armor of the body throughout the ages against attack by germs and other harmful agents, is ten times as effective as muscle, brain or blood in combining with and subduing the invading material.

Immunity is an ability to detect and then anchor, or combine with, an invading substance; and the great serv-

ice rendered by a tissue is this combining with the dangerous substance in order that it may not spread throughout the body with disastrous results. Prof. Kahn explained that in a germ disease this combining capacity of the tissue may determine whether the trouble is localized or whether the organisms run riot throughout the body. Sometimes the ability to protect is not evident from the blood yet the skin is on its protective job. This is the case sometimes in Malta fever and in boils caused by staphylococci.

The inflammation of infection, as in a boil, is really something to warrant rejoicing because it means that the invading organisms are being destroyed and eliminated.

Further studies by Prof. Kahn promised to explain some puzzles about infection and give information that physicians may be able to use in actual treatment of disease, enabling them to fight germ diseases more successfully than at present.

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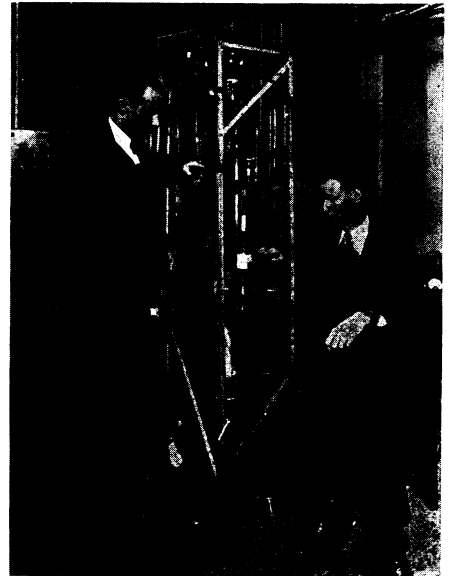
## HEREDITY

# Only 48 Ancestors Really Count in Your Heredity

**O**F ALL your ancestors, no more than 48 really count so far as your hereditary traits are concerned, it appears from a discussion of the contribution of genetics to anthropology given by Prof. C. H. Danforth of Stanford University at the meeting of the American Association for the Advancement of Science.

"It used to be thought that all of one's ancestors in any generation contributed about equally to his heredity," Prof. Danforth said.

"It now appears that, on account of the limited number of human chromosomes, at least one grandparent of the



## PLENTIFUL PROTONS

*Drs. Lamar (left) and Luhr (right) examine their apparatus which makes protons nine times more abundantly than previous devices.*

## PHYSICS

# Proton Production Improved For Bombardment of Atom

**A** PLENTIFUL supply of atomic bullets for shooting at other atoms in the hope of transmutation and atomic energy release is assured by a recent Massachusetts Institute of Technology discovery.

A source of protons that (Turn Page)

sixth generation back contributes nothing whatever and may as well not have existed so far as direct heredity is concerned.

"Following this line of reasoning we are led to conclude that those racial groups which show a high degree of uniformity or the frequent recurrence of particular types have really descended from only a few genetic ancestors, however numerous their genealogical ancestors may have been."

The influence of genetics on anthropology may be seen in the change in attitude toward the origin of racial differences, Prof. Danforth pointed out.

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