

latter activity of the gland and its hormone that keeps the skin, for example, from outgrowing the rest of the body. When the skin becomes thick and wrinkled because it is too large to cover the body smoothly, as happens in diseased

conditions, the skin has been freed from the growth-regulating factor and just goes on growing and growing, as tissue does when removed from the body and kept alive in a test-tube.

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## PHYSIOLOGY

## Finding New Lung Function Solves Human Blood Puzzle

**S**TUDIES which clear up a fifty-year old puzzle about human blood were reported by Dr. William H. Howell, emeritus professor of physiology in the Johns Hopkins University, at the autumn meeting of the National Academy of Sciences.

The puzzle was to find where the platelets of the blood are formed. These platelets are little flattened disks which are important because one of their functions is to make blood clot after it has been shed.

The platelets are formed in the lungs, Dr. Howell found.

This is an entirely new idea. Although the platelets were discovered more than 50 years ago and there have been all kinds of theories as to their origin, function and fate, no one has ever thought of looking in the lungs for their birthplace. Until now medical scientists have thought these important platelets were formed in the marrow of bones where the red blood cells and many of the white blood cells are made. The generally accepted view, proposed by Wright, is that they are produced in the marrow from a species of giant cell, to which Dr. Howell many years ago gave the name megacaryocyte.

Now Dr. Howell comes along with the experimental proof that the platelets are made in the lungs. The first evidence was finding that as the blood flows through the lungs it picks up platelets. The arteries always contain more than the veins.

Further evidence was obtained by examining bits of lung tissue under the microscope. By a special technique, the platelets were stained intensely, so that they showed up clearly under the microscope.

"I have been able to show," Dr. Howell reported, "that they are produced, as a sort of solid secretion, by the giant cells, megacaryocytes, of the lungs.

"Megacaryocytes," he explained, "have been found in the lungs by many investigators, but they are usually sup-

posed to be sort of accidental constituents, cells that have escaped from the bone marrow and have been caught in the capillaries (tiny blood vessels) of the lungs, there to undergo degeneration.

"But my observations show, on the contrary, that they are actively growing cells whose cytoplasm is composed of platelet material and which branches out into the blood capillaries sometimes for quite a distance. Then processes break off and are carried off in the blood stream and break up by fragmentation into the tiny platelets."

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## PHYSICS

## Hot Stars Provide New Evidence For Einstein

**V**ERY hot stars, with surface temperatures around 40,000 degrees, have provided the latest evidence in favor of the Einstein relativity theory.

Dr. Robert J. Trumpler, of the Lick Observatory, has found that the lines appearing in the spectra of those stars after their light has been analyzed through the prisms of a spectroscope, are shifted towards the red. This shift is greater than that shown by other stars closely associated with the hot ones. Dr. Trumpler expresses the view (*Publications of the Astronomical Society of the Pacific*, October) that this shift is similar to one found previously in the sun and other stars, and which was predicted by Einstein. It is believed to be due to the fact that the light waves are lengthened slightly when they leave such a massive body.

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The sturdy oak tree has more than 300 different insect enemies.

Until recently, Ethiopia's emperors always went to the holy city of Aksum for coronation.

## MEDICINE

## Find Highway For Germs Along Tongue Into Throat

**D**ISEASE germs that enter the mouth with food, drink or air are not all swallowed, Drs. Lloyd Arnold and Carroll W. Stuart of the University of Illinois College of Medicine have discovered.

Some of the germs stick in the mouth, and they have a definite preferred highway where they travel. Brushing and gargling with antiseptic washes won't budge them from this travel zone. They persist there, seeding themselves over and over again until they all finally die of anemia, which requires from two to four hours, depending on the species.

### Self-Disinfecting

The mouth has a good mechanism for defense against disease, Drs. Arnold and Stuart find. The cheeks and the edges and middle of the tongue can disinfect themselves. When foreign germs come in contact with these areas, they disappear within a few moments. But the surface of the gums near their juncture with the teeth, the palate, and the space between the edges and the middle of the tongue have no self-disinfecting ability. It is on these latter parts that the germs are retained and which they use as a highway for their travel into the throat.

They always travel down this highway, never up and forward of their own accord. If they come up from the throat, it is an involuntary projection, as in the sputum of a cough.

It was established several years ago in Dr. Arnold's laboratory that the line of the lips where the outer skin meets the lining skin is also a non-sterile area. The present investigation shows that foreign germs on this area likewise keep seeding themselves for several hours.

### Live on Lips

Consequently, if your lips touch the rim of an infected glass or other object, the germs stay on your lips for several hours and your tongue, coming in contact with the lips, provides another seeding place for the germs to pass down your throat. If the resistance of your body is depleted, then these germs may cause sickness.

When a tuberculosis patient coughs up germs, these germs likewise stay on the tongue and lips for several hours, and any one or anything coming in contact with the lips of such a patient in that time is liable to be contaminated.

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