

## MEDICINE

# Green-Lips Circulation Test May Tell When to Amputate

## Injecting the Dye, Fluorescein, Into Soldier's Veins And Shining Ultraviolet on Foot, Shows State of Tissue

**A** GREEN-LIPS test which in an adapted form may help the Army Surgeon who has to decide whether or not to amputate a frozen or gangrenous foot to save a soldier's life, was demonstrated by Dr. Kurt Lange and Dr. Linn J. Boyd at the New York Medical College, Flower and Fifth Avenue Hospitals in New York.

The test is made with the dye, fluorescein, which gives off a greenish-yellow color under ultraviolet light.

By injecting the dye into a vein of the arm and shining an ultraviolet lamp on the patient's lips, the doctor can tell how fast the blood is flowing through the patient's body by the speed with which his lips turn green. The test is made in a slightly darkened room.

In some cases, such as gangrene and incarcerated intestines, it is important for the doctor to know whether any blood is getting through to the sick part of the body. Successful adaptation of the green-lips test, originally devised by Dr. Lange and Dr. E. Wollheim in Germany, for these other conditions is now reported by Dr. Lange and Dr. Boyd in the current issue of the *Medical Clinics* of North America.

Instead of turning the ultraviolet light on the patient's lips after injection of the dye into his veins, the light is turned onto his foot or whatever part of the body is suspected of being without adequate blood supply and therefore dying. In the case of incarcerated intestines, the surgeon can inject the dye during the operation, have the operating room lights lowered and shine the ultraviolet directly onto the suspected tissues. The presence or absence of the green fluorescence within a few minutes tells him whether or not that tissue needs to be removed.

The dye is safe, inexpensive and easily available, Drs. Lange and Boyd point out.

In testing speed of blood flow, the green lips showed that in normal grown-ups, the blood circulation time is 15 to 20 seconds. Patients with heart disease had circulation times varying from 20 to 68 seconds. Those with overactive thyroid glands had a very short circulation time, seven to 10 seconds, while those with underactive thyroids had a prolonged circulation time of 21 to 34 seconds.

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during the shock treatments, the brain is deprived of its usual supply of oxygen.

The experiments of Drs. Berman and Riess were planned to test the theory that this oxygen deprivation, by its effect on nerve pathways in the brain, would act to break down recently formed and unstable habits of thought and behavior while leaving intact the older lifetime habits of the individual. If that were so, they reasoned, then the strange, "crazy" habits of the patient's mental disease would be the first to break down under the insulin treatment, because his insane behavior is relatively recent as compared with his habits of acting before the onset of his illness.

The experiments provided evidence to confirm their theory.

Rats were taught by the investigators to run a maze. After they had mastered it thoroughly, they were allowed to "overlearn" it by running through it 100 times. Later the same animals were taught to run another maze but on this maze they were not given any additional practise.

Next the animals were given the insulin shock treatment and later tested on both mazes.

Learning of the recently acquired maze habit was definitely impaired by the insulin treatment, it was found. But no definite impairment was noticed for the maze they had learned earlier and had had drilled into them by extra practise.

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## ENGINEERING

## Puffed-Up Sand Is New Heat Insulating Material

**P**UFFED-up sand, technically known as silica aerogel, is about twice as good a heat insulator as any other substance, John F. White of the research department of Monsanto Chemical Company told the American Institute of Chemical Engineers meeting in Boston.

The material is now being used chiefly in the insulation of high-temperature laboratory furnaces and extremely low-temperature chambers for the liquefaction and freezing of gases, Dr. White said.

When peace comes and new household refrigerators appear in the stores, the present three-inch walls can be reduced to one and a half inches, he said. The present six and a half cubic foot model can have its inside expanded to nine cubic feet without any increase of outside dimensions.

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## PSYCHOLOGY

# Insulin Shock Treatment Acts By Making Patient "Forget"

## Experiments With Rats Indicate Shock Treatment Breaks Up Recent, Unpracticed Habits, Leaving Others

**T**HE INSULIN shock treatment, which is used to jolt the mentally ill back to the world of health and reality, may effect the improvement by making the patient "forget" his crazy ideas and behavior.

This suggestion is the result of experiments reported to *Science*, (May 15) by Drs. Louis Berman and Bernard Riess,

of Hunter College, New York City.

Although insulin and other shock treatments for mental disease have been widely and successfully used on large numbers of patients, there has been no agreement among scientists and physiologists and successfully used on large is effected.

There seems no doubt, however, that