

MEDICINE

New Kind of Vaccination Will Prevent Lockjaw

Toxoid May Be Given in Advance to Protect Against Injuries of War, Automobiles, and Fourth of July

ON M-Day the men of our fighting forces will probably be rapidly turned into walking factories of tetanus, or lockjaw, antitoxin. Then, if wounded, they need not as in the past depend for protection against lockjaw on the speed with which they can be taken to dressing stations for injections of this antitoxin.

This new kind of protection against lockjaw, or tetanus, that takes effect before the danger of tetanus germs getting into wounds arises is due to development within the past few years of a tetanus toxoid.

The tetanus toxoid, unlike the antitoxin, is made directly from the germs themselves. The poison or toxin of the germs is treated with formalin and heat so that it cannot produce disease but still has the power of stimulating the body to produce its own defense against the tetanus germs.

In this it is like the diphtheria toxoid which has protected thousands of children against diphtheria. Many baby doctors are now giving tetanus toxoid with diphtheria toxoid to six-months-old babies. When these infants reach the run-about age, their mothers need not worry about the danger of stepping on rusty nails. Such an injury now means the child should be rushed to the doctor for injections of anti-toxin to protect against any tetanus germs that may have been driven into his foot. The child who has had tetanus toxoid, however, already has such protection.

All the midshipmen at the U. S. Naval Academy have now been given this new type of tetanus vaccination. Medical officers of the Army and Navy believe, though it has not yet been officially stated, that this vaccination will be given, along with "shots" of antityphoid fever vaccine, to all men drafted for the services on M-Day.

The tetanus toxoid has been given to all French soldiers and, according to reports received by medical officers of the U. S. Army, there has been no tetanus in the French army since the start of the war in September. Men of the Italian army have also been given this protection, but no reports of its success

have been received. Up to two years ago the Germans had not adopted the procedure but there has been no direct word since then on the subject.

Peacetime counterparts of war wounds—automobile accident injuries and Fourth of July casualties—also bring danger of lockjaw. For protection against these, doctors now rely on injections of tetanus antitoxin. The new tetanus toxoid can also be used at the time, it is claimed, of injury to reinforce the antitoxin.

One important advantage of toxoid over antitoxin is the fact that toxoid is not made from horse serum. Antitoxin is made from the blood serum of horses that have been given immunity to tetanus. Although this is effective, it sometimes makes people sick with what is called serum sickness. Those who suffer from allergy, or who have had previous injections of horse serum, are particularly likely to develop severe serum sickness.

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PHYSIOLOGY

Chewing While Talking Aids Deaf to Speak

CHEWING and talking at the same time— frowned on by etiquette books—is an effective new method of helping deaf people to overcome unnatural speech, Dr. Emil Froeschels reported to the American Association for Promoting the Teaching of Speech to the Deaf.

Formerly one of the University of Vienna's notable physicians, Dr. Froeschels is now applying his methods of improving speech at the Central Institute for the Deaf in St. Louis.

Over-exertion of muscles is responsible for many defective voices, both among deaf and hearing people, Dr. Froeschels said. Since voice muscles cannot be used so actively when a person tries to eat and talk at the same time, Dr. Froeschels evolved the practise method of having speech patients make simple chewing movements while articulating words.

"What then proceeds from the mouth," he said, "is a language—which is, to be sure, no longer in use—but which in

my opinion was the primitive language of man."

Accustoming deaf patients to talk with less muscular force and stiffness, the chewing practise leads to more flowing and natural speech, he explained, thus correcting the tendency of the deaf to split speeches up into isolated words and sounds.

To demonstrate his method, the Viennese physician asked the Rhode Island School for the Deaf to bring to the meeting two boys and two girls particularly in need of voice improvement.

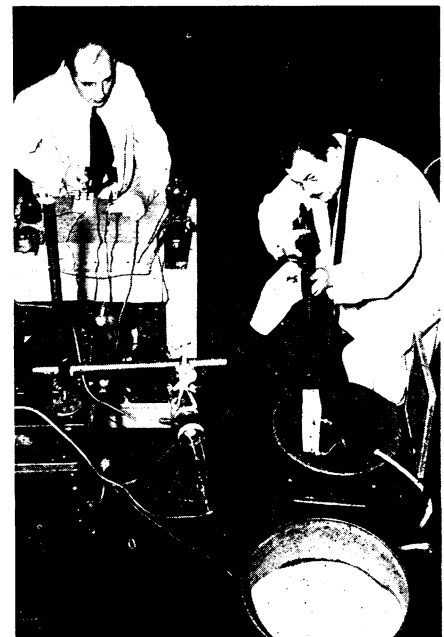
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PHOTOGRAPHY—PHYSICS

X-Ray Pictures Taken In Millionth of a Second

X-RAY photographs taken with an exposure short enough to show a moving bullet while passing through a block of wood were shown to members of the American Physical Society at Pittsburgh. The method was described by Dr. Charles M. Slack, research physicist for the Westinghouse Lamp Division, who developed the new X-ray tube with the collaboration of his associates.

A very brief electrical surge of high voltage and amperage is obtained by charging a condenser, in several seconds,



SHOOTING AN X-RAY

As Dr. Charles M. Slack stands at the control switch, his associate, L. F. Ehrke is about to fire a rifle that will take an X-ray picture of the bullet going through wood.