

## MEDICINE

## Surgery in Hemophilia

Successful skin grafting operation has been performed for the first time on a hemophiliac. The bleeding was controlled by thrombin.

► SUCCESS in what is believed the first attempt at skin grafting on a hemophiliac, or "bleeder," is reported by Dr. Charles S. Davidson and Dr. Stanley M. Levenson, of Boston City Hospital and Harvard Medical School. (*Journal, American Medical Association*, June 30.)

An active thrombin preparation applied to the place from which the skin graft was taken apparently was responsible for saving the patient from bleeding to death from this wound.

The patient, a 26-year-old man, suffered from the hereditary bleeding disease, hemophilia. He had had to go to the hospital 13 previous times for bleeding from a cut lip, bleeding when he lost his "milk" teeth, bleeding from cuts on his knee and similar episodes.

Operations of any kind are not often undertaken on such patients because of the great danger of their bleeding to death. Excessive bleeding after such a

simple operation as pulling a tooth has been a common cause of death in hemophiliacs. Now that active thrombin preparations are available, however, hemophiliacs can have teeth pulled with relative safety.

The skin graft reported today was required because of an injury to the patient's right leg. Originally this was a bruise in which the skin was scraped off. This healed satisfactorily but after a second injury on the same place three and a half weeks later, swelling, pain and infection set in. The gangrenous skin had to be removed and later grafted with fresh skin.

The graft was taken from the patient's left thigh. Bleeding at this place was controlled instantly, the doctors report, by applying a mixture of powdered sulfanilamide and thrombin. The area healed in nine days and the graft took excellently.

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## PHYSICS

## Thickness Measured

Thickness of steel in walls of a boiler tank, or the level of liquid inside the tank, can now be determined accurately by using a new instrument, the Penetron.

► THE THICKNESS of the steel in the walls of a boiler tank, or the level of the liquid inside the tank, can now be determined accurately without drilling holes through the metal by means of a new instrument that employs radium rays from a commercially available radium salt. It can be used to measure the thickness of any type of material, and also to determine the densities of liquids.

The new instrument, called a Penetron, was demonstrated to a group of scientists in New York by the Texas Company as it is a product of a subsidiary, the Texaco Development Corporation. It will be manufactured and sold by Engineering Laboratories, Inc., Tulsa, Okla.

In use, the portable 40-pound Penetron is placed in position against the outside wall. It does not require access to the containing vessel. The apparatus has

a detector head connected through a flexible rubber-coated cable to a control case. In this is electronic equipment, and on it is mounted the meter from which readings are taken.

The principle on which the instrument works is simple. Penetrating gamma rays emerge from a radioactive source. They impinge on the wall and penetrate it. Some emerge on the opposite side, and having no useful purpose, are disregarded. Another portion of the radiation is scattered in all directions by the electrons of the atoms which make up the wall. Some of these emerge on the same side of the wall from which they entered. These are the ones used to determine the wall thickness. They constitute the so-called back-scattered radiation.

By measuring the intensity of this back-scattered radiation, thickness is determinable, because, in a wall of any



**TESTS TIRES**—An earthmover tire is given a deflection test under normal load by this huge tire testing machine installed at the Goodyear Tire and Rubber Company's plant. The operator is John Ward, development engineer for the company.

given composition, the intensity increases as a direct function of the wall thickness. In determining liquid level, the instrument is moved slowly down along the wall until a change in the meter reading is noted due to a variation in the intensity of the back-scattered radiation from the wall of an empty tank and the same wall when backed by a liquid.

*Science News Letter, July 7, 1945*

## AERONAUTICS

## Heavy-Cargo Army Plane Has Square Fuselage

See Front Cover

► THE PACKET (shown on the front cover of this SCIENCE NEWS LETTER), a completely new airplane for transporting heavy and bulky cargo produced for the Army, will be displayed at Hagerstown, Md., to a group of scientists and aviation writers by the maker, Fairchild Aircraft. The body of the plane is nearly square in cross-section, increasing its capacity over the ordinary fuselage which is usually rounded. It has straight sides, a flat ceiling and a level floor at truckbed height.

The fuselage is, in effect, a large flying truck or freight car with a total cargo capacity of 2,870 cubic feet. It can be loaded or unloaded through the tail doors, which when open, make an entrance eight by eight feet. When the