



SUBSTITUTE HAND

*A new method of electroforming made it possible to make a sponge rubber hand for a young girl who had lost her own in an automobile accident. The girl had a sculptor friend who prepared a reproduction of the missing hand in plaster of paris, correct in every detail. This was used as a pattern to electroform an iron mold in which the light and useful sponge rubber hand could be made. The artificial hand was tinted to match the skin.*

## MILITARY SCIENCE

## Armor May Become Fashion Even Among Civil Population

### Bullet-Proof Suits Would Cause Loss of Agility But Offer Protection Unless One Ran Into Electricity

**W**EARING of armor like that of knights of old, only proof against modern bullets and shell fragments, is likely to come into fashion again, even among the civil population, predicts Stephen V. Grancsay, curator of arms and armor in the Metropolitan Museum of Art.

Armored men have already been reported as having been seen repairing the barbed wire in front of German entrenchments on the western front.

"Armor wearing is not ideal," Mr. Grancsay stated to Science Service. "However, a soldier necessarily has to bear great discomforts. I am sure that with the light alloys developed today armor will be used extensively, even by the civilians as a protection against flying debris. Armor would be effective against

the shells falling from anti-aircraft guns. As for civilians wearing armor—some people are reckless and others are cautious, and I should think that it would depend upon their natures whether they would go in lightly or strongly for armor."

Among the drawbacks of armor-wearing mentioned by Mr. Grancsay are loss of agility by the infantryman (a suit of medieval plate armor weighed 50 pounds!), and the terrific consequences to an armored man of running into an electrically charged wire entanglement.

However, in a war of position, such as seems to be developing on the western front, armor might be a very considerable advantage to machine gunners, anti-tank gun crews, and other troops not required to move fast, jump shell holes, etc.

## METALLURGY

## Iron Now Electroplated With New Industrial Uses

**I**RON is joining the procession of metals that can be electroplated with great industrial effectiveness.

Out of the laboratory has come a new method of producing molds and dies by the electroforming of iron, making possible the shaping of rubber tires at greater speed and less cost, duplication of rare carved ivory pieces in glass or plastics, stampers for punching out metal machine parts by the thousands, fashioning of objects in clay, silver, and other materials—even the reproduction of portraits in plaques of plastics and other materials by a photographic relief process.

The Ekko process, a phonetic spelling of "echo" suggestive of the duplications it makes possible, is an achievement of United States Rubber Co. scientists, patents pending. Because of perfect rendition of intricate details and considerable money savings, the process promises to have wide usage.

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Every soldier in all armies these days wears a helmet, and if a helmet is good protection, Mr. Grancsay reasons, why should not other body armor be equally good protection?

Mr. Grancsay has the backing of no less an authority than General Pershing, whom he quotes: "Effort should be continued towards the development of a satisfactory form of personal armor."

Two and a half years ago, on April 7, 1937, Mr. Grancsay predicted the return of body armor, in a Science Service radio broadcast.

Armor has never been entirely abandoned. During the World War, some of the German machine gunners were equipped with breastplates. The heavy French cavalry had only just abandoned the wearing of their shining steel cuirasses, which were counted on to turn swords and lances in a charge, though it was known they would not stop bullets. And the wearing of bullet-proof vests, which are armor even if not made of metal, is a commonplace among dictators, gangsters and other men who have reason to fear attempts at assassination.

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The eared seal has only traces of outer ears; and other seals have none—merely holes leading into inner ear passages.