

## MEDICINE

# Tantalum Patches Skulls

Plates of rare metal used to repair head wounds. Experiments indicate method will be of value in war medicine. Metal can be cut and molded at operating table.

► USE OF the rare metal, tantalum, for plates and disks to replace pieces of skull lost in war wounds or to cover skull defects from such wounds is proposed by Lieut. Robert H. Pudenz, Medical Corps, U. S. Naval Reserve (*Journal, American Medical Association*, Feb. 13).

Success with this use of tantalum in laboratory experiments is reported by Lieut. Pudenz, who also quotes as yet unpublished reports from other surgeons who have used it successfully on some human patients.

Tantalum is a "bluish white metal resembling steel in its physical properties and glass in its chemical characteristics," Lieut. Pudenz states.

An important advantage of the metal for surgical use is the fact that it can be drawn into wire or rolled into sheet while cold. Because it is easily malleable, the surgeon can cut and mold a piece of tantalum to the desired shape at the operating table.

In addition, tantalum does not corrode, is not poisonous, does not cause any adverse reaction with the body tissues and is nonabsorbable. It is heavy, with an atomic weight about three times that of iron, but because it can be used in a thin sheet its weight is apparently not a disadvantage. None of the patients who have had skull defects repaired with it have, so far as is known, felt any sensation of heaviness or of pressure.

Tantalum has previously been used by a few other scientists for bone plates and screws and wires in both animal and human tissue. Bone, cartilage, celluloid and the metal, vitallium, have all previously been used to repair skull defects. Vitallium has recently found most favor with brain surgeons, but tantalum has the advantage of being easily malleable.

*Science News Letter, February 27, 1943*

## NUTRITION

# Progress Hinges on Food

High nutritional standard would play important part in post-war reconstruction. Tests show good diet produces improvements in health and longevity.

► RECONSTRUCTION in the post-war world, and advances to new achievement in civilization and culture, will depend to a very considerable extent on a high nutritional standard—higher than was ever known in prewar days, Dr. Frank G. Boudreau, executive director of the Milbank Memorial Fund, indicated at the midwinter meeting of the American Philosophical Society.

The advantages of abundant nutrition over just-sufficient feeding have been repeatedly demonstrated, both in sociological field observations and in controlled experiments, Dr. Boudreau pointed out. Even with animals the results are beyond argument. Colonies of laboratory rats, descended from long lines of sleek and well-fed ancestors, immediately showed improvements in health, vigor

and longevity when they were given extra feedings of vitamins and other health-making factors.

As negative evidence, Dr. Boudreau cited the cultural stagnation of the late middle ages and early modern times, when famines occurred on the average of seven times in a century, keeping whole populations hungry as much as a tenth of the time. When people are constantly preoccupied with the problem of just getting enough to eat, they are not likely to give much thought to the arts, sciences and humanities, he contended.

If we are to move forward into the gleaming civilization that forward-looking statesmen see for us beyond the present smoky horizon, we shall have to see to it that the American people, to say nothing of the rest of the world, receive

far better nutrition than the average American prewar diet represented, the speaker declared.

Prewar consumption, on the basis of careful studies by the Food and Nutrition Board of the National Research Council, showed some astonishing lacks, for a people who boasted themselves the best fed in the world. From the diet designated by the NRC studies as best adapted, the following deficiencies were noted: 59% in leafy green and yellow vegetables, of 45% in milk, 28% in citrus fruits and tomatoes, 25% in beans, peas, and nuts, 17% in eggs, 14% in potatoes, 4% in meat, poultry and fish, and 2% in flour and other cereals. There was an excess production of 8% in butter and other fats and of 15% in sugar.

To right this, even for the United States alone, will require a reorientation of our agriculture that is not much short of a revolution.

*Science News Letter, February 27, 1943*

## ENGINEERING

# Smoke Generator Developed For Camouflage Purposes

See Front Cover

► PUFFING smoke worse than an old sidewheeler, a new smoke generator has been developed for camouflage purposes. Using liquid material more efficiently than in the past, it covers areas densely and economically. The smoke blanket hangs over the earth for long periods of time, simulating natural clouds and fog.

Dr. Irving Langmuir of the General Electric Research Laboratory is shown on this week's SCIENCE NEWS LETTER cover demonstrating the device which he and Vincent J. Schaefer developed through the National Defense Research Committee for the Chemical Warfare Service.

*Science News Letter, February 27, 1943*

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