

ideally suited, they stated, to further processing either by ball milling, or by stamp milling, obtaining a very fine grade of bronze powder. The particles formed are flakes. "It is obvious," they said, "that the particles of which these deposits are composed grew in two dimensions only."

In the investigation made which resulted in the discovery of this new type of copper, it was found that when the cathodes in the electrolytic bath had received an application of certain oils, the deposits on them are brittle. The cathode

is the electrical terminal on which the refined metal is deposited in the electrolytic process.

"In particular," they declared, "certain asphaltic oils and such vegetable oils as corn oil gave deposits over ten-day periods which were easily stripped from the rolled cathode surface." They were brittle enough to be easily broken up. Castor oil, oxidized with perchloric acid, is preferred. The cathodes are dipped in heated oil and allowed to drain.

Science News Letter, April 29, 1944

PSYCHIATRY

Psychiatry at the Front

➤ AN IMPORTANT step toward salvaging for combat or other active military duty the men who would otherwise crack up mentally under the excessive strains of warfare, is the appointment of a psychiatrist on the staff of each Army division.

This physician will live with the men and share their experiences, "ride their vehicles, participate in their bivouacs, take their infiltration courses." Thus he will gain the respect of the soldiers and will also put himself in a position where he can most effectively apply his professional skill and judgment to problems of training and combat.

Acute manpower shortage has led to the reversal of the Army's former practice of wholesale discharge of men believed to be emotionally unfit for military service, it is disclosed in a special article in the *Bulletin of the U. S. Army Medical Department* (March) announcing this new step in preventive mental medicine.

Now the new Division Neuropsychiatrist will be expected to save such men through his clinical judgment, skill, contacts and influence. He will get personally acquainted with the line officers and be in a position to help them when they seek his advice. He will "forget psychiatric jargon and explain his findings and recommendations in simple terms," the article, which was prepared in the Office of the Surgeon General, states.

For the first time in the Army, the psychiatrist will have an opportunity in some degree to modify and influence the soldier's environment, it is explained, so as to improve morale and prevent maladjustments. He will advise in all matters pertaining to the mental health of the command.

The Division Neuropsychiatrist will

form a team with the classification officer to aid in the placing of individual soldiers where they can function best and thus eliminate improper placement which is a factor in poor mental health.

He will visit division dispensaries and help the medical officers to solve problems where physical ailments are linked with mental or emotional maladjustment.

And when the men reach combat, the Division Neuropsychiatrist will supervise the care of the neuropsychiatric casualties which, it has been found, are numerous in heavy combat. (See *SNL*, April 22)

Science News Letter, April 29, 1944

MILITARY SCIENCE

Ancient Warlike Device Gets New Improvement

➤ A MODERN improvement on a warlike device that is at least as ancient as the wars between the Greeks and Persians is the subject of patent 2,346,713, granted to an Army officer, Maj. Brooks Walker, and assigned royalty-free to the government.

The device is a caltrop. In its original form, the caltrop was a group of four sharp spikes radiating from a common center in such a way that one would always fall pointing upward when tossed on the ground. Man or horse stepping on a caltrop could be considered through for the day.

Major Walker's improvement consists merely in making the spikes hollow with openings near the ends. Any pneumatic-tired vehicle running over one of them will of course lose the air from the punctured tire through the hole, and be as effectively crippled as any of the King's horses or the King's men of old.

Science News Letter, April 29, 1944



Radical Research

➤ MIDWESTERN farmers often assert that no one has ever seen the lower end of a bindweed root. Some go further and declare that they don't have any lower ends—that they come straight up through the ground from the place where they were invented. Certain it is, in any case, that this field-ruining wild morning-glory, probably the single weed species in the great Grain Belt, is extremely deep-rooted.

Now, however, someone has seen the lower end of a bindweed root. He is Dr. John C. Frazier, a young botanist on the staff of the Kansas State Experiment Station. Dr. Frazier is an exceedingly persistent young man, for he dug down alongside one bindweed root for a little more than 23 feet before he got to the bottom of it.

Dr. Frazier did his digging into the hidden life of the bindweed in the course of researches aiming at a better knowledge of why and how this ill weed grows so apace. By planting its seeds in cleared soil and keeping close track of root growth week by week, he obtained a more accurate picture of the bindweed's potentialities for mischief than has ever been available.

Even when only two weeks old, bindweeds already had six-inch-deep roots. Before they were three months old, their roots were down more than a yard. And at the end of the 120th week of their persistent, perennial lives, they were sending their roots down to the 23-foot level.

At the same time they were spreading sidewise at comparable rates. When the roots were down a yard, they had a radial spread of a yard and six inches. When they had got to the 23-foot length, they were spreading "at least" 16 or 17 feet.