

## PHYSICS

# Mercury Possibly Turned To Gold In Atom-Smasher

No Use to Misers, However; It Is of a Form That Rapidly Vanishes and Only Minute Amount Obtained

**M**ERCURY has apparently been turned into gold by the cyclotron, or atom-smasher, at Harvard University. This experiment, which may realize the ancient dream of the alchemists, was reported in Washington to the American Physical Society by Dr. Rubby Sherr and Prof. Kenneth T. Bainbridge.

However, the amount obtained was so exceedingly minute that only by an indirect method was its presence shown. Further, it is a form of gold that rapidly vanishes, even faster than ordinary gold in one's pocket! It decays like radium. With one form detected, after 48 minutes, half of a given amount is gone; after another 48 minutes, half of what remains, and so on. The other forms lasted a few days.

Dr. Sherr and Prof. Bainbridge shot heavy hydrogen nuclei, or deuterons, from the Harvard cyclotron, at lithium, from which high speed neutrons were obtained. These, in turn, were used to bombard mercury. A tiny amount of

gold was mixed with about a pound of the bombarded mercury. The mercury, being a liquid, was boiled away in a vacuum, leaving behind the gold, which is non-volatile. A chemical process removed small amounts of platinum which were also formed by transmutation of the mercury.

Tests of the gold showed several forms which acted like radium. One was the new kind, with half decaying in 48 minutes. Also were present forms that have previously been found by other means, with half-decay periods of 65 hours and 78 hours. However, since the gold itself had not been subjected to the neutron bombardment, and had not originally shown any radioactivity, it appears that these were formed in the mercury itself. Putting more gold with it, they all joined together, and could be more easily removed. In other words, the additional gold was the bait which drew the transmuted gold atoms to it, so that they could all be pulled out together.

*Science News Letter, May 17, 1941*

## PSYCHOLOGY

# Images Reproduced In Brain As In Television Receiver

Way in Which You Are Fooled by Optical Illusions Found to Conform to Laws of Electro-Magnetism

**W**HEN you look at a pretty girl or a house or a streamlined automobile, you are able to see them because of the electric impulses such forms send speeding to your brain. This is indicated by a report to the Eastern Psychological Association presented by William R. Sickles, of Columbia University.

Your eye works like a photoelectric cell, Mr. Sickles told the psychologists. Light differences reflected from an object produce electro-chemical differences in your eye's retina. This sends electrical impulses over the optic nerve to your brain.

In your brain, electric currents are created which reproduce the form seen by your eye in a way much like that in which pictures are reproduced on a television screen.

The electric nature of the visual process was demonstrated by Mr. Sickles from the way in which you can be fooled by optical illusions.

If you draw on a sheet of paper two lines meeting at a point, you can produce this sort of "fool-yourself." A car parked at a 40-degree angle to the curb would produce a similar outline. Now draw a line across the space between

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