ELEMENTS CHANGE WHEN SHOT WITH ATOMIC BULLETS

How nitrogen can be changed to fluorine andthen to hydrogen and oxygen when hit by the rapidly moving nucleus of an atom of helium was described to the National Academy of Sciences by Dr. William D. Harkins, of the University of Chicago, who has even succeeded in photographing the changes.

In a closed chamber containing very moist air, the moving atoms are not visible, but they have theproperty of condensing the water vapor along their path into a long narrow cloud, so that their path can be traced andwhen one atom hits another, a forked line is seen, due to the fact that they rebound. This process was invented by Prof. C. T. R. Wilson, of Cambridge University, England.

"A photograph taken by this method indicates that a fast helium nucleus strikes the nucleus of a nitrogen atom, possibly forming the nucleus of a fluorine atom," said Dr. Harkins. "This almost immediately explodes to give a fast hydrogen nucleus and the nucleus of an oxygen atom."

Efforts to convert mercury to gold were unsuccessful, Dr. Harkins said. "An X-ray tube was used to shoot electrons at 138,000 to 145,000 volts into mercury," he stated. "If any one of these electrons were to add itself to the nucleus of a mercury atom, without driving out another particle, an atom of gold would be formed. We found that if any electrons attach themselves in such a way, less than one in a billion does so, since no trace of gold was found in the mercury bombarded."

PALESTINE EXCAVATORS FIND MAGIC FLOWER POT

By E. N. Fallaize,
Secretary of the Royal Anthropological Institute, London.

An interesting discovery has just been made in one of the Canaanite Temples at Beisan in Palestine, now being excavated by the Expedition of the University of Pennsylvania Museum, which, if correctly interpreted, throws fresh light on some of the religious and maginal practices of the early inhabitants of Biblicallands. In one of the two temples belonging to the reign of Amenhotep III, or Amenhotep IV, when this part of the country was under the rule of the Egyptians, has been found a hollow circular ring of clay, to the upper part of which are attached cups and animals' heads. At the base of the cups are holes connecting with the hollow part of the clay ring.

Mr. Allan Rowe, field director of the Expedition, suggests that this is a flower vase such as the classical writers mention as having been used in the temples of the great Syrian goddess whose rites were closely connected with nature and with fertility in all living things. Mr. Rowe has pointed out that a similar object was found at Megiddo some years ago and anothermuch later in date in a temple of Aphrodite at Naukratis in Egypt, and suggests that they may actually be "The Gardens of Adonis" to which classical writers refer in connection with the religious practices of ancient Greece and the Near East.

The "Gardens of Adonis" were baskets or pots in which various seeds or grain were planted and tended by the women for a period of eight days, after which they were thrown into a river or stream with an image of the god. Sir James Frazer, who has collected a large number of similar customs in his "Golden Bough", suggests that this custom was a charm to secure a plentiful supply of rain or water for irrigation to promote the growth of the crops.

A similar purpose underlay theharvest custom in England and other European countries in which those who brought homethelast load of the harvest, or sometimes the last sheaf of corn, were drenched with water when they reached the farmyard. If the practice were omitted there would be a deficiency of rains in the coming year. In the parts of the east of Asia where the staple crop was rice, the fertility of the fields and theprosperity of the crop dependedupon the care with which a small plot of rice plants was tended and of which the produce had to be mixed with the seed used in the following year. In Sardinia pots of plants were sometimes placed in the windows of the houses with a similar intention and their resemblance to the Syrian custom was made more marked in that little figures, male or female, were placed in these pots, but this feature of the custom was firmly forbidden by the Church, suggesting that it was thought to beasurvival from pagan times.

SCIENCE SOLVES PROBLEM OF TARDY WORKMEN

Four thousand employees in a big refining plant in Philadelphia may chant, "Oh, how I hate to get up in the morning," but most of them get up while chanting. For the factory has made a scientific study of the lateness of its workers and as a result tardiness has been cut almost in half.

Ralph E. Motley, who surveyed the plant andfound the remedy, says that the lateness of employees is a cause of much expense to companies,and that the cure for the situation can be found only after a satisfactory diagnosis of causes has been made.

In his report on the Philadelphia refinery, which will be published in a forthcoming issue of the Journal of Personel Research, Mr. Motley says that in 1921 there was an average of nine persons per thousandlate to work every day. Traffic delays sometimes held up street cars, and only about one-fifth of the workers lived within walking distance of the plant.

"But some of the workers had the 'lateness bug' in their systems," says Mr. Motley, "and took long chances on reaching the plant on time, while others had gradually acquired thehabit of reporting late simply for the reason that little determined effort had been made by the management to curb the increasing tardiness."

The first remedy tried was deducting onehalf hour's pay from the envelope of the man who reported late for work. This proved only a temporary remedy, for the workers soon became accustomed to this slight penalty andpaid no attention to it.

The most successful plan was to report regularly to the superintendent of each department of the plant the names of those men in his department who were late each