

CHEMISTRY

# Elusive Element No. 87 Reported Discovered

Discovery Made in France, Although Not Yet Reported To Science Journals, Is Announced in California

**T**HE DISCOVERY of element No. 87—the last but one of the missing elements in the periodic table—has been achieved in France. The finding of this elusive element, whose discovery has been previously reported and afterward disproved, was made by Horia Hulubei, in France.

The discovery has not yet been reported in scientific journals but was revealed by Dr. F. R. Hirsch, Jr., research fellow at California Institute of Technology, speaking at a seminar of the physics department.

Dr. Hirsch reported that Hulubei's discovery was made as a result of a suggestion of Dr. Jesse W. M. DuMond, research associate at California Institute. In 1930 Dr. DuMond first suggested an apparatus, known as the curved crystal focusing spectrograph, which was modified by the French scientist Cauchois and used by Hulubei in the discovery of element No. 87.

While at Cornell University Dr. Hirsch, one of the 17 or 18 scientists who sought the formerly missing element, reported to the American Phy-

sical Society that he was unable to confirm a prior claim by Prof. Jacob Papish and Eugene Wainer, for the discovery of element No. 87.

Dr. Hirsch predicted that the last missing element, No. 85, in the periodic table, might also be discovered by the powerful instrument used in France.

This instrument is so sensitive that it can detect one part of a given element in 10,000,000,000 parts of pollucite or any chemical or mineral. Pollucite is the mineral in which Hulubei discovered element No. 87, which has been named Madavium.

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PHYSICS

## First Estimate of Size Of New Subatomic Particle

**T**HE PHYSICISTS' unchristened baby, the subatomic particle discovered almost exactly a year ago, is between 100 and 160 times as massive as the electron.

This first estimate of the size of the most recent addition to the family of building blocks of the universe was reported (*Physical Review*, Nov. 1) by Drs. J. C. Street and E. C. Stevenson of Harvard University.

One thousand photographs of particle tracks produced by the bombardment of matter by cosmic rays were taken by the Harvard scientists in order to secure one photograph of the new particle, it is stated. The estimate of the size is based on the shape of the track the particle left behind it and on its penetrating power.

First reported by Science Service almost exactly a year ago, discovery of the particle, credited to Dr. Carl D. Anderson, California Institute of Technology Nobel Prize winner, and his associate, Dr. Seth Neddermeyer, occasioned a keen rivalry between the California scientists and their Harvard colleagues. The official announcement of its discovery by the Californians last spring was made almost simultaneously with a similar announcement from Harvard.

The particle is believed to carry the same negative electric charge as an electron, for the two Harvard scientists made that assumption in proceeding to analyze results of their lengthy experiments.

Four Geiger counters—devices for counting atomic discharges—were lined up in an ingenious experimental "telescope" layout in order to track the new particle. The first three counters were



**ATOM SMASHER**

*This great pear shaped instrument is the new atom smasher now being built by the Carnegie Institution of Washington, in the capital city. Seventy tons of steel are going into its 55-foot high shell. The photograph on the cover of this week's Science News Letter is of the same frame work looking directly upward toward the workmen at the top.*

used to guarantee that particles were coming from only one direction outside the apparatus. The last counter served to cut off the observing chamber when high energy particles, photographs of which were not wanted, passed through the counters. Had this last trap not been used 4,000 pictures—instead of 1,000—would have been necessary to obtain the one vital atomic portrait for which Drs. Street and Stevenson were looking.

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#### MEDICINE

### Iron and Sugar Checks Cancer Growth in Rats

**A** COMBINATION of sugar and iron given on top of a red or blue dye has been successful in treating one kind of cancer in rats, it appears from experiments conducted by Drs. Richard M. Brickner and Royal E. Grant of the College of Physicians and Surgeons, Columbia University, and the Neurological Institute. The two scientists state (*Science*, Nov. 12) that the treatment is under discussion not as a cure but as a method of checking the growth of the tumors in the animals.

In 47 out of 64 animals treated so far, the tumor stopped growing, they report. In about half of these animals the tumor receded. In only a few cases, however, did the tumor recede completely.

The sugar and iron combination used is ferric gluconate. Alone, this chemical had some power to check tumor growth. It was much more effective when given after injection of either a red or blue dye. The dye, it is explained, is readily taken up by the tumor cells and seems to "make up a chemical bed in the tumor, by virtue of which the ferric gluconate might either be held in increased quantity or be made more effective in the tumor."

Not only was the growth of the tumors checked, but the tumors themselves, when sections of them were examined under the microscope following the treatment, were found to have undergone "profound and widespread changes." Only occasional normal looking nests of cells were found in the tumors after the iron and sugar and dye treatment.

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Arguing for lighted highways, a lighting engineer points out that 60 per cent. of traffic deaths occur at night, when only 20 per cent. of the day's traffic volume is moving.



**SPEEDY TELEPHOTO CAMERA**

*Machine gun sights, an extremely long-focus lens of great speed and a universal tripod mounting feature the new news camera shown here with the inventor, Photographer Charles A. Gatschet of Des Moines, Iowa. Still not satisfied with his equipment, however, Gatschet plans to further improve his camera, so that it can be opened more quickly and operated with less labor.*

#### PUBLIC HEALTH

## Committee of Physicians Urges Adequate Medical Care

**P** RINCIPLES and proposals for reorganizing medical practice in accord with changing social and economic conditions so as to bring medical care to the "forgotten man," at present un-nursed and undoctored, were presented to medical organizations by a Committee of Physicians in New Haven, Conn.

The committee represents 430 medical men. It includes one Nobel Prize winner and is headed by the following officers: Dr. Russell L. Cecil, Chairman, associate attending physician, New York Hospital; Dr. John P. Peters, Secretary, professor of medicine, Yale University School of Medicine; Dr. Milton C. Winternitz, Vice-chairman, Professor of pathology, formerly dean, Yale University School of Medicine; Dr. Hugh Cabot, Vice-chairman, Consulting surgeon, Mayo Clinic.

The medical profession, although only one of several groups vitally concerned with medical care, should, in the opin-

ion of the committee, take the lead in proposed changes and should cooperate with other interested groups. Medicine must be ready to change and not remain static if "medical men are to act as the expert advisers of those who convert public opinion into action."

Health insurance alone, the committee and its subscribers believe, does not offer a satisfactory solution on the basis of the principles and proposals they have drawn up.

First of the principles indicates the view that the people's health is the direct concern of the government and that a national public health policy should be formulated. Prevention of illness is stressed as the first necessary step toward improving the medical and health picture. Voluntary agencies, local, state and federal governments are all concerned, the committee states, in providing adequate medical care.