

## METALLURGY

**Beryllium to Rival Aluminum**

Airship frames and light-weight pistons may soon be made from beryllium or its alloys, and this hitherto unknown metal may soon achieve the household familiarity that aluminum has won during the last two or three decades.

Beryllium is a metal about a third lighter than aluminum, but is very much harder, scratching glass easily, like hard steel. According to H. S. Cooper, industrial chemist of Cleveland, Ohio, it is one of the most remarkable of all metals in its elasticity. It is over four times as elastic as aluminum, and 25 per cent. more elastic than steel. And while aluminum corrodes easily on contact with salt water, beryllium shows very high resistance to this as well as to other metal-destroying liquids and fumes. It is light gray in color, and takes a polish like that of high grade steel.

It is chemically related to aluminum, and easily forms alloys with it. One of these, consisting of 70 per cent. beryllium and 30 per cent. aluminum, is one-fifth lighter than aluminum, far more resistant to corrosion, and in tensile strength far exceeds duralumin.

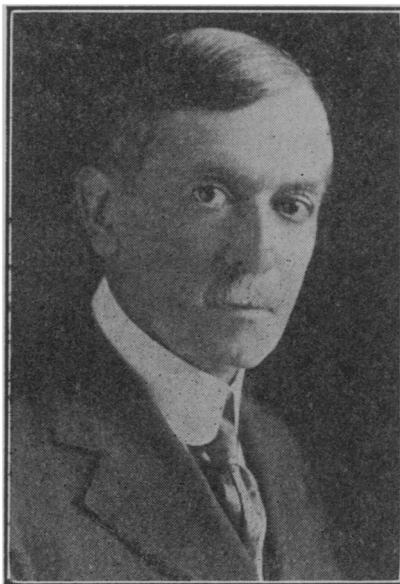
One quality which Dr. Cooper points out may render beryllium especially valuable to the automobile industry. It expands under the influence of heat at about the same rate as cast iron. Thus when used for light pistons inside the iron cylinders of automobile engines it will present far less engineering difficulty than do the present types of light pistons, which expand at a rate different from that of iron.

Beryllium ores are found abundantly both in this country and abroad. At present they are hauled out of feldspar mines in New England by hundreds of tons, but are dumped away as waste.

Although so new industrially that it can not properly be said to have been born yet, scientifically beryllium is an old story. It has been known to chemists for 130 years; Vauquelin, a Frenchman, first indicated its existence in 1797. But until recently it has remained merely a museum curiosity and a laboratory material, because it is so refractory that the cost of getting it in anything like a pure state has been prohibitive. But now that the cost of manufacture promises to be materially reduced by a new electrolytic process, it is probable that it will appear on the market in quantity.

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## CHEMISTRY



ARTHUR AMOS NOYES

**Chemist and Educator**

When the executive council of the American Association for the Advancement of Science last winter reached out to the Pacific coast and chose Arthur A. Noyes as president during 1927, everybody applauded the selection as well made. For in the threefold role in which a scientist must qualify today to be considered a leader, Dr. Noyes has most notably made good: as investigator, teacher and administrator his reputation is solidly established.

Every analytical chemist is a searcher after needles in haystacks. Dr. Noyes delights in the smallest of needles concealed in the largest haystacks, for his specialty has been the detection of the barest traces of the rarer metals. Where enough of an element is present to make quantitative analysis the delight of the chase is gone for him, and he resigns the job to some one else. His chase of vanishingly small quantities has led him also into studies of what happens to ions in electrolytic solutions.

Two institutes of technology on opposite sides of the country, Massachusetts and California, have profited by his talents as a teacher. But his teaching has not been conducted from behind his own desk, for he has written and collaborated in the writing of a number of successful text and reference books, in addition to his contributions to the literature of research.

Where he has taught, he has also led the teaching. He was director of the research laboratory of physical chemistry at the Massachusetts Institute of Technology from 1903 until 1920, and for two years acted as president of that school. Then in 1920

he was called to the directorship of Gates Chemical Laboratory at the California Institute of Technology, Pasadena.

Dr. Noyes was born at Newburyport, Mass., in 1866. His education began at the Massachusetts Institute of Technology, where he received his bachelor's degree in 1886 and his master's degree one year later. He went to Germany for his Ph. D., which he received at Leipzig in 1890. He holds honorary degrees from the University of Maine, Clark University, the University of Pittsburgh, Harvard University and Yale University.

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## GENETICS

**Genes And Genomes**

Just as the atom, the standard "indivisible particle" of the earlier chemistry, has been split up into electrons, so the gene, the standard carrier of a given hereditary quality, is now split into new subdivisions called genomes, to satisfy the requirements of phenomena which the orthodox genetical concepts of the present day can not explain.

At the Fifth International Genetics Congress at Berlin, Prof. William M. Eyster of Bucknell University told how his studies of variegations, or contrasting colors appearing in the leaves and flowers of plants, led him to the adoption of the genome hypothesis. The standard concept, that genes were indivisible hereditary units, could not account for these stripings and spottings, and the only thing to do was to think of the gene as cut up into sub-units, which usually hang tightly together, but which on occasion can come apart and rearrange themselves. When they do this, they form a sort of genetical mosaic, which expresses itself in the mosaic appearance of the plant itself.

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## HYGIENE

**"Trying On" Dangerous**

When a woman tries on a dress in a store before deciding whether or not she will purchase it she runs into danger, according to the New York City Health Department.

The practice of trying on clothes has been deprecated by the Health Department in one of its recent bulletins. And the department is not concerned with the increased wear and tear on the clothes. Rather it is alarmed at the possibility of spreading disease which such fittings may lead to. The department warns retailers of the danger and advocates the provision of sterilized slips for try-on purposes.

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