

JOSEPH HENRY

The American Co-Discoverer with
Faraday of the Way to Get

ELECTRICITY FROM MAGNETISM

Describes his Experiments in
THE NEXT CLASSIC OF SCIENCE

yet described, and, further, a special absorption spectrum unknown until that time. I added that it had not been possible for me to continue the fractionation long enough to affirm positively that all these properties correspond to the same substance. Since then, I have been able, following a considerable number of fractionations of magnesium nitrate, to accumulate a greater quantity of this scarcely abundant element, to fractionate it in turn and to report finally that these different characteristics: line spectrum, spectra of reversal, absorption, electric fluorescence of the sulphate in vacuum (anomalous line); with calcium or gadolinium sulphate, accompany one another very constantly, remain sensibly proportional, and that they evidently characterize the same element.

The apparently contradictory results of MM. Crookes and Boisbaudran are due, I think, to the varying proportion of *Sigma* — *Z epsilon* contained in their material and to the fact that calcium and gadolinium reinforce the spectrum of samarium more than that of the other.

I propose for the new element the name *europium*, with the symbol Eu = 151 (approximately).

Illinium

OBSERVATIONS ON THE RARE EARTHS: XXIII. ELEMENT NO. 61. PARTS ONE AND TWO. By J. Allen Harris with L. F. Yntema and B. Smith Hopkins, in *Journal of the American Chemical Society*, Vol. 48, June 1926.

Summary:

1. Fractionation of cerium group material as double magnesium nitrate concentrates element No. 61 between neodymium and samarium.
2. All fractions contain so small a proportion of No. 61 that its detection by X-ray analysis is difficult.
3. The absorption bands of Element No. 61 are masked by the broad bands of neodymium and samarium.
4. Fractionation as bromates reverses

the order of solubilities interposing gadolinium between No. 61 and samarium and terbium between No. 61 and neodymium. Under these conditions absorption bands probably due to the presence of Element No. 61 become plainly visible. . . .

We base our claim to the discovery of a new element on three different lines of evidence:

1. The presence of lines in the arc spectrum of materials prepared in this laboratory common to both samarium and neodymium and stronger in intermediate fractions. These consist of 130 lines in the red and infra red and five lines toward the violet.

2. The presence in our intermediate fractions of absorption bands which become stronger as the characteristic bands of neodymium and samarium become weaker. The bands at 5816 A. and 5123 A. are especially prominent and their positions confirm the belief that there is a systematic drift in the absorption bands of the rare earth group.

3. The presence of lines in the X-ray emission spectrum corresponding closely to the theoretical position for *L alpha* 1 and *L beta* 1 of Element 61. The mean value obtained for *L alpha* 1 agrees within 0.0004 A. of the value calculated from Siegbahn's precision values. The single reading obtained for *L beta* 1 varies by 0.0040 A. from the calculated value.

Science News Letter, August 29, 1931

ORNITHOLOGY

Duck Shortage Imminent As Breeding Places Dry

DUCK SHOOTING during the coming fall, already shortened by two weeks, may face a still further curtailment as the result of a cooperative survey of the drought situation in the northwestern breeding grounds of the wild fowl, conducted by the United States and Canadian governments. As reported to *Science*, the findings of the field biologists are pessimistic.

Discouraging reports were made of unprecedented drought; of lakes and ponds and marshes turned into dusty barrens with no sign of aquatic life, and of the almost complete absence of water during the period in the great prairie breeding grounds of southwestern Manitoba, southern Saskatchewan as far north as Saskatoon, and Alberta westward to the foothills of the Rocky Mountains and northward to the vicinity of Edmonton.

Science News Letter, August 29, 1931



DR. WILHELMINE E. KEY
Geneticist who checks up on fictionists.

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scribed the daughter born of this unpromising marriage:

"Here is the picture of the 'sport' which is miraculously put forth from this weak, ineffectual family stock. She was beautiful, she was intelligent and ardent. She was admirable and she felt that she was effective; and she had a confidence 'amounting almost to a feeling of power.' She has, too, a wonderful warmth of sympathy and human understanding."

Rosalie, in other words, was a bundle of positive traits, none of which, the author would have us believe, was inherited from her parents. In such an imposing array of characters we would expect some to be dominant, and dominant traits have a way of showing themselves in each generation.

Another stumbling-block which keeps the fiction writer from creating his characters in accordance with scientific laws is the danger of confusing social heredity with physical heredity. Many human lives are ruined, not through any hereditary defect, but through outworn traditions, prejudices, and unfortunate teachings which have been handed down from generation to generation like folk-lore.

The error of blaming physical heredity for the disastrous effects of this social kind of heredity is illustrated, Dr. Key believes, by May Sinclair's "Mary Olivier."

In "The Forsyte Saga," where Galsworthy carries the story of the Forsyte