

CHEMISTRY

# Last Missing Element Detected By New Method of Analysis

## Four Alabama Scientists Find Element Number 85 With Analysis That Recognizes One Part in Hundred Billion

**T**HE ONE remaining unknown chemical element, number 85, has been detected for a first time in seawater, in potassium bromide, a common headache drug, and in a number of well-known minerals by a method of super chemical analysis so delicate that it can recognize one part in a hundred billion of water.

The discovery is announced by Dr. Fred Allison, Edgar J. Murphy, Prof. Edna R. Bishop and Anna L. Sommer, working at the Alabama Polytechnic Institute, Auburn. Two of these, Dr. Allison and Mr. Murphy, are the same scientists who a year ago discovered the next to the last unknown element, number 87, next door neighbor to radium in the chemist's table of the ultimate building blocks of matter.

Ninety-two elements now form the completed list.

The new element, eighty-fifth when the elements are arranged in the order of the weights of their atoms, is a family relative of iodine, long popular as an antiseptic. It has not yet been separated, for only one part in a billion is present in the substances examined.

However, in their letter to the *Physical Review*, in which the announcement is made, the discoverers say that concentration of a purer form of the element from monazite sand is being attempted and is making good progress. The "eka-iodine," as Mendeleeff would have called it in his original periodic table, is being separated as the "85-ite" of lithium. Monazite sand is well known as the source of the cerium and thorium used for the mantles of Welsbach gas burners.

Other materials in which number 85 has been found are: kainite, a potassium magnesium sulphate found in the famous German Stassfurt salt deposits, apatite, which is a fluoride and phosphate of calcium and barium, and fluorite, or calcium fluoride, as well as in the laboratory reagents hydrofluoric and hydrobromic acids.

The new method of analysis depends on a strange phenomenon discovered a

long time ago by Michael Faraday, one of the greatest scientists of all time. The Faraday effect has to do with what happens to a beam of light passing through a transparent substance placed between the north and south poles of a powerful magnet. The vibrations of the light beam, if polarised, that is, confined to one direction to start with, are found to have rotated on passing through the magnetised liquid.

About a billionth of a second elapses after switching on the magnet before the influence on the light vibrations is observed in the liquid. This lag is found by Dr. Allison and his associates to be different for different substances. It is this delay that gives a means of identifying extremely small amounts of substances and in particular the first traces of the new chemical element 85. Because of its small amount the lag was not discovered until a year or two ago when Dr. Allison invented his new method of measuring it.

America seems to be making up for

lost time in discovering the missing members of the chemical family. Until the discovery of illinium by Prof. B. S. Hopkins at the University of Illinois in 1926 no element had first shown itself to an American investigator. Illinium's discovery left only two more elements to be discovered in order to complete the chemical periodic table.

If the discovery of element 85 is confirmed by other investigators, the United States will have the distinction of having found the three last and therefore the most inaccessible of all the elements.

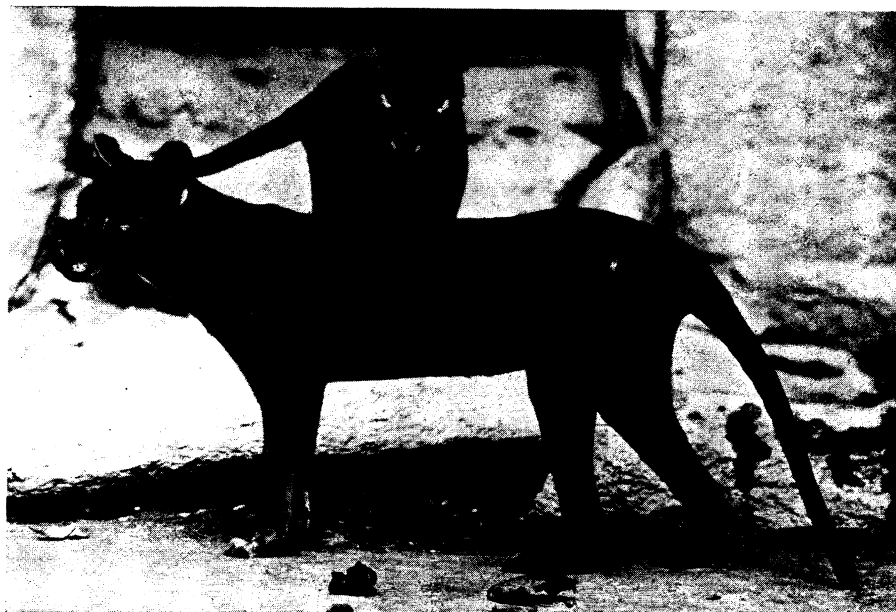
Six elements have been discovered in the last seven years. Number 72, called hafnium after the city of Copenhagen, was discovered in 1923 by Prof. D. Coster and Dr. Georg Hevesy. Numbers 43 and 75 were isolated in 1925 and 1926 at the University of Berlin by Dr. Walter Noddack and his collaborators and named masurium and rhenium.

*Science News Letter, May 16, 1931*

CONSERVATION-ZOOLOGY

## Australia Aroused to Preserve Wild Life

**A**USTRALIA, which has had a development more or less analogous to that of the American West, is now passing through a phase also experienced in America—the realization that reckless slaughter is threatening extermination of many of its unique animal



### ALMOST UNKNOWN IN ZOOS

*The Thylacine, or "marsupial wolf", was formerly represented in the U. S. Zoological Park in Washington by two specimens. This animal, though a beast of prey, is now protected by the government of Tasmania.*