

CHEMISTRY

New Elements Named

Americium and curium are the names given to the two newest elements, 95 and 96, by their co-discoverer, Dr. Glenn T. Seaborg.

► THE TWO NEWEST chemical elements to be discovered, numbers 95 and 96, were christened "americium" and "curium" by their co-discoverer, Dr. Glenn T. Seaborg, of the Metallurgical Laboratory, University of Chicago, in an address before the American Chemical Society meeting.

Made synthetically from uranium and plutonium as a consequence of the atomic bomb research, americium and curium were manufactured in the University of California cyclotron at Berkeley by bombarding U238 and Pu239 with 40,000,000 electron volt helium ions. Dr. Seaborg announced the discovery of these two elements last fall.

The chemical symbols of the new elements will be Am and Cm.

Element 95 is named after the Americas, or the New World, and element 96 is named after Pierre and Marie Curie, the great leaders in the study of radioactivity.

When neptunium, element 93, and plutonium, element 94, were discovered they were named after the two planets Neptune and Pluto, beyond the planet, Uranus, in the solar system, after which element 92, uranium, was named. But when two more elements were manufactured, there were no more planets of the solar system after which to name them.

So Dr. Seaborg, who was also co-discoverer of plutonium, used in the atomic bomb, used analogy with corresponding elements in the periodic table to guide him in naming his new chemical babies.

He found that the new elements were members of a series of elements, which he called the actinide series because its first member is actinium. This corresponds with the series of chemical elements known as the lanthanide earths which begin with lanthanum. The shells or layers of electrons in the atoms of these elements have similarities. Element 95 has six of what the chemists call 5f electrons and corresponds to the element europium, with six 4f electrons, which was named after Europe. This suggested to Dr. Seaborg naming element 95 after the Americas. Element 96 has seven 5f electrons while gadolinium, with seven 4f electrons, was named af-

ter Gadolin, a great investigator of the rare earths. This suggested naming 96 after the Curies.

The preferred pronunciation of americium, according to Dr. Seaborg, is amer-ic'i-um, pronouncing the "ic" like "is" in this. The name of this new element is not likely to come into such common usage as many other elements, such as plutonium, one of the fissionable atomic bomb elements, but there may be some tendency in the future to shorten or corrupt it by dropping out the second letter i as has been done in the American usage of aluminum, which in England is still known as aluminium.

Curium is simpler to pronounce, the c being sounded like k.

Co-discoverers of americium and curium with Dr. Seaborg are R. A. James, L. O. Morgan and A. Ghiorso in the Metallurgical Laboratory at the University of Chicago, one of the Manhattan (Atomic Bomb) Engineer District proj-

ects. Dr. J. G. Hamilton and his group at the University of California are credited with vital participation and cooperation throughout, rebuilding the 60-inch cyclotron to produce the high-energy particles needed, and who performed the bombardments.

Dr. Seaborg is professor of chemistry at the University of California on loan to the atomic bomb project and he will shortly return to Berkeley.

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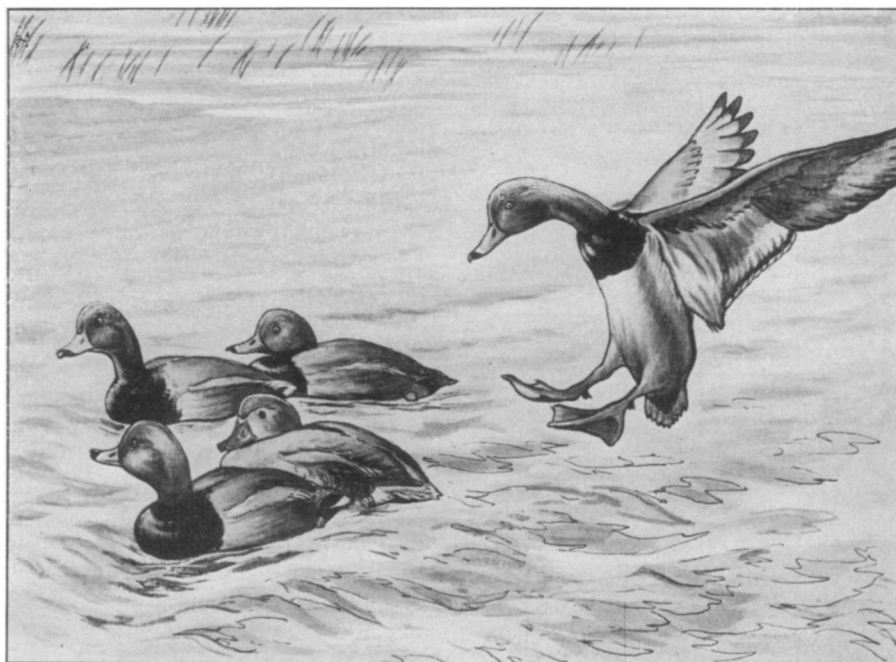
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Anarchy in Molecules Determines Stretchability

► RETENTION of its stretchability by rubber depends on the maintenance of a state of internal anarchy among its molecules, Dr. W. O. Baker and Dr. N. R. Pape, of the Bell Telephone Laboratories, reported to the American Chemical Society.

X-ray studies of natural rubber stretched and stretched again until it stiffened and lost its elasticity showed that the molecules had assumed an orderly, crystal-like pattern. Types of synthetic rubber that do not thus become brittle under strain showed X-ray patterns indicating that their molecules never became really orderly.

Science News Letter, April 20, 1946



DUCK STAMP—This Federal migratory-bird hunting stamp for the 1946-47 season is taken from a drawing by Robert W. Hines and will be available to hunters and philatelists on July 1. Sold for \$1, the stamps provide funds that help finance the Federal Government's refuge program.