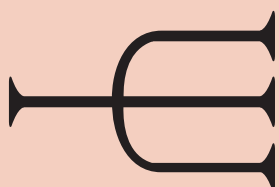


THE HISTORY OF CHEMICAL SYMBOLS

Facets of Chemistry



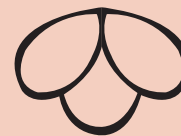
cinder



iron filings



egg shells



burned pebbles

In the early 1800s, a student named Berzelius sat down to study his chemistry text. Chemistry was his favorite subject, but reading the text was one task he always dreaded. He quickly became mired in a bog of strange symbols that made no sense at all. Berzelius recognized one symbol but then found that another symbol meant the same thing. One book in the university's library used twenty different symbols for mercury. Another book used fourteen different symbols for lead. "This mess of symbols must be cleaned up and replaced with something better," he muttered.

Early alchemists developed the first symbols for elements. The metals they worked with were associated with gods and planets that were known in ancient times. Ancient symbols for the metals tell of Egyptian, Persian, Greek, and Roman associations.

☉ Gold—The "perfect" metal received the symbol of perfection and divinity.

☾ Silver—The metal with the luster of moonlight received the shape of the moon for its symbol.

♀ Copper—The goddess Venus supposedly rose out of the sea off the coast of Cyprus, which was known for its copper mines. The symbol for copper pictures the looking glass of the goddess of beauty.

♄ Lead—This metal was associated with Saturn, the god

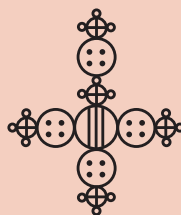
of harvest, and his scythe.

♂ Iron—The metal used in weapons received a symbol that showed the lance and shield of Mars, the god of war.

⚡ Tin—The thunderbolt of Jupiter served as tin's symbol.

☿ Mercury—This flowing liquid metal became associated with Mercury, the messenger of the gods. Mercury's wand was used as the symbol.

Alchemists produced many new symbols as well. Drawing their symbols often required artistic skill and time.



Later, chemistry student John Dalton became frustrated and designed a system of symbols to illustrate the different kinds of atoms. He drew various symbols inside circles to designate the different elements. Dalton represented compounds by combining the symbols of the elements that were in the compounds.

After Dalton introduced his system, a Swedish chemist named Jöns Jacob Berzelius developed a system of abbreviations. He included several revolutionary ideas in his system: "It is easier to write an abbreviated

word than to draw a figure which has little analogy with words. The chemical signs ought to be letters for the greater facility of writing and not disfigure a printed book. I shall therefore take for the chemical sign the initial letter of the Latin name of each chemical element. If the first two letters be common to two metals, I shall use both the initial letter and the first letter they have not in common."

Soon Berzelius's abbreviations became accepted and understood all over the world. Today the conglomeration of confusing symbols has yielded to a unified, reasonable, and understandable system of chemical symbols.

Because science is a human endeavor, there are still sometimes disagreements about who gets to name a new element, or what it should be called. For that reason, the International Union of Pure and Applied Chemistry (IUPAC) now regulates the practice. Typically, the individual or lab that first discovers an element is given the privilege of choosing a name. Since none of the recently discovered elements occur naturally and many exist for only fractions of a second in labs, there is sometimes controversy over which person is the first to create an element. This controversy is another reminder that science is not absolute but is just man's best attempt to find order in his world.