Earliest Times.--The development of the language of chemistry, conditioned as it has been by the evolution of the science, presents an interesting subject for study.

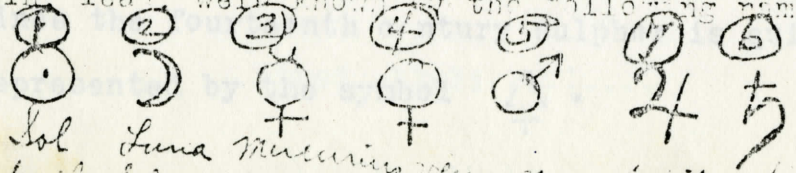
The oldest chemical terms were either very general, or else suggestive of the origin of the substances to which they were applied.

Since the earliest times, the term "sal" has been used for everything having a salty taste; since the eighth century the kind or origin of the substance was indicated by an additional work; for instance, "sal maris."

In Geber's writings there is no attempt at any system in the naming of chemical bodies; whether or not he was familiar with the use of any of the symbols for the metals which were used by the alchemists in later times, is very doubtful. They are certainly to be found in his works, but as these consist almost exclusively of Latin translations made in the sixteenth century, it is an open question whether they appeared in the original, or were inserted by the translators.

Notation of the Alchemists.--With the thirteenth century the alchemists commenced to use certain symbols quite freely.

The sever metals, gold, silver, mercury, copper, iron, tin, lead, were known by the following names and symbols:



Gold	Sol	☉	Iron	Mars	♂
Silver	Luna	☽	Tin	Jupiter	♃
Mercury	Mercurius	☿	Lead	Saturnus	♄
Copper	Venus	♀			

Concerning the meaning of these symbols but little is known; the exact time when they were brought into use can also not be determined.

It has been suggested that the symbol for Saturnus represented his scythe, the symbol for Mars his shield and spear, the symbol for Venus her hand-mirror. Some of the alchemists believed that these symbols were indicative of the chemical peculiarities of the metals they represented. Thus the circle was regarded as illustrating perfection of the metallic state, the semicircle an approximation to this condition, and so on.

Since the thirteenth century the following signs were employed to designate the four elements of Aristotle:

Fire Air Water Earth

Gradually other symbols found their way into alchemistical writings, but few of these met with general acceptance. Since the fourteenth century sulphur is quite generally found represented by the symbol  .

Nomenclature in the Seventeenth Century.---In the seventeenth century, when the number of compounds known increased rapidly, the names of the discoverers of these substances were frequently used as an aid in distinguishing between them. The practice of having similar names indicate similarity of properties, originated only towards the end of this epoch.

All sulphuric-acid salts were then designated as "vitriols;" nitric-acid salts came to be known as "saltpeters." As a rule, similarity in terminology referred to the acid of the compound; salts consisting of the same base with different acids, were rarely indicated by similar-sounding names.

In the beginning of the eighteenth century several attempts were made to introduce chemical signs and symbols which should express concisely the nature of substances.

Geoffrey in 1718 used the customary symbols for the metals, and in addition introduced the following signs:

Acids.....

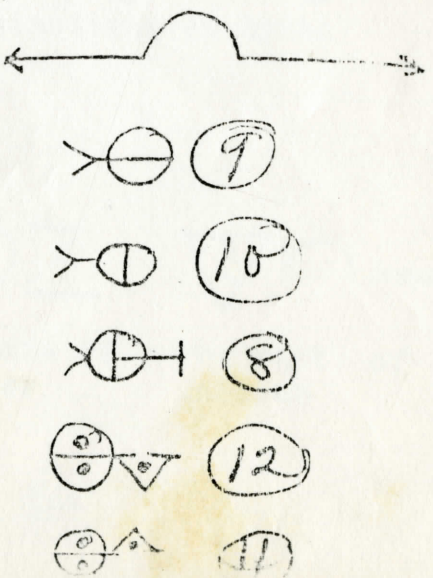
HCl.....

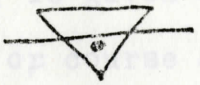
HNO_3.....

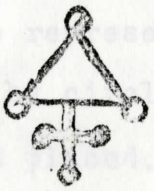
H_2SO_4.....

Fixed Alkali.....

Volatile Alkali.....



Absorbing Earths 

Phlogiston
Principe huileux
Soufre principe 

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Vinegar..... 

Salt..... 

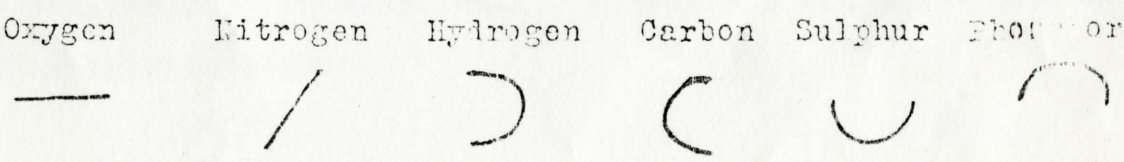
Alcohol..... 

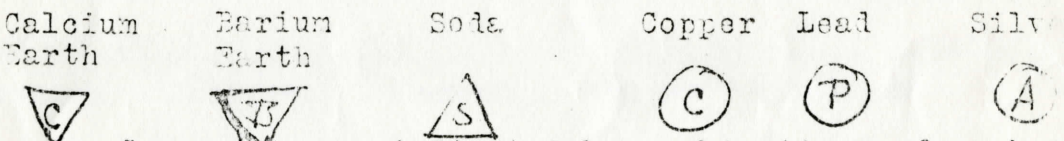
Symbols of Hassenfratz and Adet.--Appended to this work and indorsed by its authors, is given a system of chemical symbols by Hassenfratz and Adet, of course adapted to the anti-phlogistic theory.

The elementary bodies are represented by simple symbols; the metals, for instance, by circles into which the first letter of their Latin name is placed, to distinguish them one from the other. All alkalies and earths are indicated by triangles placed in different positions.

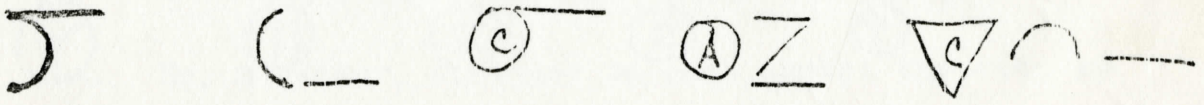
Oxygen, nitrogen, hydrogen, etc., are denoted by lines, straight or curved.

The following are a few of the symbols employed:

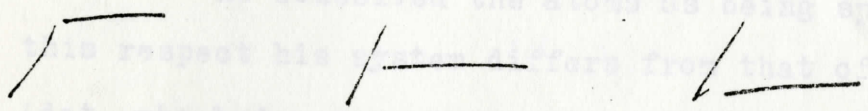




Compounds are indicated by combinations of symbols like the above. For instance:



The authors of this system also attempted to depict by their symbols differences in the constitution of compounds formed from the same constituents. This they sought to accomplish by the position which the several symbols were made to occupy relatively to each other. For instance, the following was intended to indicate the different steps of oxidation of nitrogen to nitric acid:

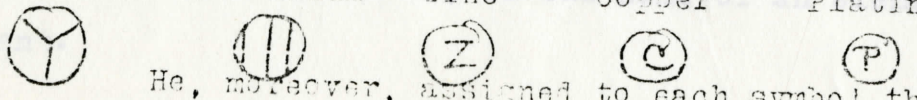


In 1808 Dalton published his "New System of Chemical Philosophy." In this he represents the atoms of the different elements by circles, and these circles are provided with some distinguishing mark.

He conceived the atoms as being spheriform, and in this respect his system differs from that of Hassenfratz and Adet, who had reserved the circle as a symbol for the metals, without, however, intending to convey thereby any notion as to the configuration of the atoms. All of Dalton's circles did not bear the initial of the name of the element to be represented; instead, he used in many instances dots and lines, as the following symbols show:

Hydrogen Nitrogen Carbon Oxygen Sulphur

Phosphorus Potassium Zinc Copper Platinum

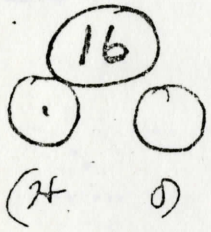


He, moreover, assigned to each symbol the duty of representing the weight of the element, according to a table of atomic weights which he published in this work.

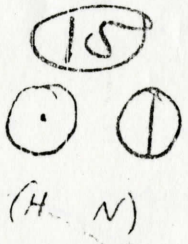
He chose hydrogen as unit, nitrogen 5, carbon 5 oxygen 7, sulphur 13, and so on.

His symbols of compounds therefore not only indicated the elements of which the compound consisted, but illustrated as well, according to his views, their quantitative composition. The following represent respectively:

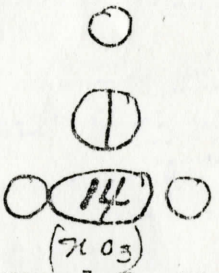
Water.



Ammonia.



Nitric Acid.



In 1811 Berzelius published in the Journal de Physique an article which explained his views concerning chemical nomenclature. His scheme rested to a great extent on the system published by Lavoisier and his colleagues, and was originally expressed in the Latin language. It is the system essentially yet in vogue at the present day.

His system of notation permitted of the writing of chemical formulae, which came into use in 1815. The abbreviated mineralogical formulae had already been introduced by him in 1814.

The use of the symbols of Berzelius is retained to the present day; the initial, or the initial and the following, or, the initial and the last letter, of the name of an element, denote the element.

In his mineralogical formulae Berzelius indicated the number of atoms of oxygen by a corresponding number of dots placed over the letters; a bar drawn through the letter or letters indicated two atoms of the element designated. Thus:

Ċu	Cu	Cu O,	Cuprous oxide.
Ṗb	Pb	PbO ,	Plumbic oxide.
Ca C̈	CaC	CaO,CO$_2$,	Calcic carbonate.