Naming of Chemical Elements

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THE NAMES OF OUR CHEMICAL ELEMENTS are fully as interesting as our geographical and our personal names or the nomenclature of our flora and our fauna. Like these the naming of the cosmic substances reaches back into the dusk of human civilization. Some of the elements, on the other hand, are not yet named because they have not been isolated or produced, although we know of their existence. The range of the origin of their names is wide and as varied as any other group of names: description and misunderstanding, geography and history, mythology and superstition. In one respect names of chemical elements differ from other classes of names. Only very few have been named for persons—gadolinium for the Finnish chemist Gadolin, samarium for the Russian mining official Samarski, and curium for the discoverers of radium, Pierre and Marie Curie. The first two are really from minerals honoring the individuals while curium is the only element directly honoring persons.

A great number of elements were named by patriotic scientists in honor of their native lands. We have France in its Latinized name, gallium, Russia similarly, in ruthenium, Germany in germanium, Scandinavia in scandium, Poland in polonium. Two continents are honored, Europe in europium, and America in americium. Regions and states have likewise lent their names to elements, as California in californium, Alabama in alabamine, Illinois in illinium, Virginia in virginium. Masurium honors the East Prussian lake district Masuren, now in the hands of the Poles, and rhenium honors Germany's Rhineland. Names of cities are also the source of several names of elements, such as the Latin name of Paris in the element lutecium, the Scottish village of Strontian in strontium, the city of Berkeley in the synthetic element berkelium, the Latin name of Copenhagen in the element hafnium. The town

of Ytterby in Sweden has the unique distinction of having four elements named after it, namely, ytterbium, yttrium, terbium, and erbium.

Our solar system is well represented, the sun in helium, the earth in tellurium, and the moon in selenium. Even the regular order of our solar system is preserved in the naming of the elements: uranium is followed by neptunium and then by plutonium in their chemical classification, in analogy to the order of the planets Uranus, Neptune and Pluto in the heavens. The little planets or asteroids are also represented: Ceres in cerium, Pallas in palladium. Moreover, many of the rare earth metals were formerly named after asteroids or stars, even though the elements were often erroneously identified. Thus, the elements aldebaranium (now thulium), cassiopeium (or lutecium), dubhium (now ytterbium), and denebium (now praeseodymium and neodymium).

The mythologies of various nations furnish us niobium (now columbium) from Niobe, tantalum from Tantalus, and titanium from the Titanes of Greek mythology; while thorium from Thor, vanadium from the goddess Vanades are taken from Norse mythology.

Many of the properties of the elements have played a role in giving them their names, weight, odor, density, color, reactivity etc. For instance in the time of Lavoisier the elements hydrogen, nitrogen, and oxygen were discovered and named by contraction of their respective reaction products with the Greek *gennao,* "I produce," thus water-producing, niter-producing, and acid-producing elements. According to their color several elements have been named from the Greek or Latin terms: color—chromium, because of its many colored compounds; light-green, chlorine; green, thallium and praeseodymium; blue, cesium and indium; violet, iodine; red, rhodium and rubidium. We see that there is a certain regularity in this apparent disorder of naming.

Scientific errors have in turn added new members to the family of elements, and the names of these appeared in many standard texts necessitating repudiation on subsequent disproof of their existence. Such, for example, were the presumed elements "ausonium" and "esperium," that the Italian physicist Enrico Fermi believed he had synthesized in 1936 and for which he received a Nobel Prize. Earlier than this (1841), Mosander added "denebium" (didymium) to the table of elements when in reality it was a metal

comprised of two chemical elements, praeseodymium and neodymium.

Nomenclatural difficulties have also served to confuse the actual number of elements known. Thus, before the gap spaces in the periodic table (indicating predicted, but not yet discovered elements) were filled in, it was common practice to name these predicted elements by the following method: the Sanskrit *eka* or *dvi* (meaning one or two) was prefixed to the name of a known element (usually above or below the unknown element in the same periodic group) and used to designate the undiscovered element. This custom gave us such names as "eka-manganese" and "dvi-manganese" for the elements that are now known as masurium and rhenium. Thus a specialized nomenclature and erroneous discoveries have left a content for the inquiring semanticist and much confusion for the lay reader.

Nevertheless, there are some characteristics in the history of chemical discoveries and nomenclature which allow us to classify and categorize the elements into historical periods distinguished often by particular methods of naming.

The oldest known elements.—Naturally occurring elements such as charcoal, gold, silver, meteoritic iron, and copper were known to ancient men—but not as fundamental substances of the universe. The oldest known element was doubtless charcoal, found in the residue of fires. An element so long familiar to mankind had doubtless many names, but its present designation came into modern English from the Latin *carbo,* "coal or ember," signifying its association with fire. Probably the next non-metallic element known to primitive man, was sulfur. Formerly obtained from the vicinity of extinct or active volcanoes and known to the ancients for its pungent odor on burning, the element takes its name unchanged from the Latin.

More precious than either of the above, gold and silver have been the objects of human greed since time immemorial. We can draw indirect proof that silver was more common than gold by reason that mention of it occurs more frequently in early Egyptian and Assyrian inscriptions. For the chemist, both elements are important in his science; however, his chemical symbols (Au and Ag) derive from the Latin words *aurum* and *argentum,* rather than from the Anglo-Saxon words *gold* and *seolfor,* both of which have an uncertain etymology.

While primitive man's uses of gold and silver were mostly devoted to ornamentation, the first metal used in implements was undoubtedly copper. Sumerians and Egyptians left records of their uses of the metal; the latter, obtaining it from mines on Mount Sinai, used the picture of a melting crucible as the hieroglyph for copper. Later, while the Mycenaean civilization was flourishing, the great copper mines of Cyprus became the chief source of the metal. On the heels of the waning Mycenaean empire, Greeks and Romans in turn sought the valuable metal from the Cyprian mines. The Romans designated the metal as *aes cyprium,* which became later *cuprum.* The latter word is the chemist's name for the metal as well as the basis for its symbol.

Another metal of highly practical value is iron, and in the time of Homer it was more valuable than copper. The word iron stems from the Anglo-Saxon *īren,* but its name *ferrum* in chemical nomenclature is again of Latin origin.

Less often mentioned than copper or iron in Egyptian and Assyrian records is the metal lead, which takes its common name from the Anglo-Saxon *lead,* "easily molten metal," and its chemical name, plumbum from the Latin. The Veda, Avesta, and Iliad occasionally mention the metal.

Although the Greeks recognized tin as a separate entity, Egyptians and Romans did not, and in Latin the metal was known as *plumbum album* or white lead. Later the word stannum (from Latin *stagnum*) was used to designate both *plumbum album* and an alloy of lead and silver, but the modern chemist uses this word strictly to designate the element. The word can be traced back to a Celtic root; the origin and meaning of tin, which appears in German as *Zinn,* on the other hand, is entirely unknown.

As early as 1000 B.C., the Chaldeans used antimony as a cosmetic, and it was the next metal to become known to the ancients. The Greek name for it was *stimmi,* which changed in Latin to *stibium;* the latter is the source of the chemical designation for the element. However, the term antimony is of uncertain origin. Some derive it from the Greek *anti,* "against," and *monachos,* "monks," meaning against the monks, the rationale being that either monks were poisoned with antimony compounds or that it was used as a remedy for leprosy, a disease because of which men became monks and hermits.

Aristotle and Theophrastus first mentioned mercury as *hydrar-*

gyros, "water silver," and teach its preparation by treating cinnabar with vinegar. During the period of alchemy, the metal was named after the fleet god Mercury, for as a liquid the metal was very swift in its escape; however, chemists borrowed the Latin *hydrargyrum* for the technical name.

The last of the oldest known elements presents an interesting insight into the animistic beliefs of ancient peoples and illustrates the usefulness of philological study. Although Albertus Magnus was the first to prepare the pure metal, Theophrastus earlier mentions the element arsenic as *arsenikon,* which means "the masculine one," and which derives from Greek *arsen,* "male." This type of name resulted because of the prelogical belief that metals were of different sexes. Thus, the modern chemist preserves the folklore of cultures thousands of years old in the nomenclature of his elements.

The palmy days of the Roman Empire, the migrations of the Germanic peoples, the middle ages—all must be considered as "dark ages" as far as progress in chemistry is concerned. With the exception of Albertus Magnus we have no record of any interest in chemistry until the dawn of that great intellectual revolution called humanism.

Period of Alchemy.—A curious twist in chemical nomenclature characterizes the epoch which follows. Rather than deriving the symbols of the elements from their proper names, the medieval alchemists would often use astrological symbols instead. Thus, the astrological symbols for the Sun (☉), Moon (☽), Mercury (☿), Venus (♀), Mars (♂), Jupiter (♃), Saturn (♄), and Earth (♁), represented respectively the elements gold, silver, mercury, copper, iron, tin, lead, and antimony. Moreover, this enumerated order possessed a certain sanctimony and was inviolable.

Among the important, but always accidental, discoveries of this era was the metal bismuth which is first mentioned by Basil Valentin in 1459, as *"wismut,* a bastard of tin." In Latin it became *bisemutum* and this is the source of the modern name. Ultimately it may have been derived from the name of the oldest known bismuth mine "St. Georgen in der Wiesen" and an old German miner's term *muten,* "to go prospecting," thus indicating the metal found by prospecting "in der Wiesen."

Although used since ancient times it was for Paracelsus in 1520 to recognize zinc as an entity. Because Paracelsus was deeply interested in medicine, he may have derived the name from the Old

High German *zinco,* "a white spot in the eye," alluding to the metal's white color. It may, however, come from the German *zinke,* "prong, or tine," on account of the pronged crystalline structure of the element.

In 1669, Brandt of Hamburg discovered a glowing substance in the residue left by distilling evaporated urine with sand. This luminescent material was the element phosphorous named in honor of the morning star Venus, which was known as Phosphorous, from the Greek *phos,* "light" and *phoros* "bearing." Lucifer was another name for the planet and this also became identified with the element. Later, when phosphorous was used in making matches, its other name prevailed and matches were called "lucifers."

Among the many ghosts and goblins that played such an important role in the thinking of medieval men was the German goblin *Kobold,* who was a spirit of the earth inhabiting underground places. One of his mischievous deeds was to cause the miners to find heavy ores that looked like silver ores but which were worthless. From this mineral, which was termed then *Kobolt* by the German miners, Brandt isolated a new element which he named cobalt after the mineral. Even that monarch of evildoers, the devil, was imputed to these "devilish" ores. One of these looked like copper ore but released poisonous arsenic fumes on roasting. Because of this, the old German miners called it *Kupfernickel* from German *Kupfer,* "copper" and *Nickel,* "the devil." When the Swedish chemist Cronstedt isolated a new element from this same ore, he named it nickel, an abbreviation of the ore's name.

In the New World, mistaken identity rather than goblins gave the element platinum its name. Found associated with gold, the white metal was first believed to be silver. However, on realizing that it was not entirely like silver the new substance was called *platina,* which is the diminutive form of Spanish *plata,* "silver." Antonio de Ulloa travelling through Peru in 1735 refers in his accounts to "platinum," but it remained for Watson in 1750 to describe the metal as a distinct element.

The Founding of Chemistry.—We leave now, the epoch of alchemy in which mysticism played so prominent a role in nomenclature. With the advent of true chemistry many old misconceptions were exploded, and in coming to this era we find chemical nomenclature hewing more closely to the nature and conditions of discovery of the elements.

The discovery of the gaseous elements hydrogen, nitrogen, oxygen, and chlorine not only disproved the historical phlogiston theory of combustion but their naming also showed an increasing insight into their chemical properties. In 1781, Cavendish showed that burning the gas which was released by the action of acids on metal would produce water. And from this fact he called the gas hydrogen, deriving the name from the Greek *hydor,* "water," and *gennao,* "I produce." Later still, Rutherford, in isolating a portion of air that could not be used in combustion, applied to it the term "mephisticated air." By passing electric sparks through a moisture laden mixture of this gas, Cavendish produced nitric acid and by virtue of this he named the gas nitrogen from Greek *niter,* "saltpeter" and *gennao,* "I produce."

Although the most important gas of all was independently discovered by Scheele and Priestly, it remained for the great French scientist Lavoisier to appreciate its importance. Experimenting with it, he determined that many of its combustion products were acids, and since acids are sour he named it oxygen from the Greek *oxy,* "sour," and *gennao,* "I produce." Another gas, which he called "dephlogisticated muriatic acid," was isolated by Scheele in 1774. But in view of the decease of the phlogiston theory Davy, in 1809, finally gave it the name chlorine from the Greek *chloros,* "light green," on account of its color.

While all the other gaseous elements are chemically reactive, the "noble gases" are distinguished by their aloofness to chemical combination. Except for helium which was discovered in the sun's chromosphere, all the noble gases have the common ending *-on* in their names, representing some order in the potpourri of chemical names. Although Cavendish had postulated that air contained 1/120th part of some gas other than oxygen, nitrogen and carbon dioxide (and other impurities), it was for Ramsay 100 years later to confirm this theory with the isolation of an inert gaseous element he called argon from Greek *argos,* "inactive." Collaborating with other scientists in the same year, Ramsay discovered three other new gaseous elements by fractionally distilling crude liquid argon. The first of these gases to be isolated by this technique was called neon from Greek *neos,* "new," for it was a new element coming off in the first distillation fraction from what was presumed to be pure argon. Because it remained in hiding and only separated in a later fraction, the second gaseous element contained in the crude

liquid argon was called krypton from the Greek *kryptos,* "hidden." The heaviest gas known and the least volatile of the noble gases took the name of xenon from the Greek *xenos,* "stranger," because it remained, its existence unsuspected, in the last fraction of the crude liquid argon. Rather than being discovered in the atmosphere, the last of the noble gases was isolated from the emanations of radium, and for that reason it was called radon.

Leaving the gaseous elements, we come now to the interesting etymology of some of the important metals of this epoch. Like many other elements the compounds of the first of these metals had been used for centuries without being recognized as a separate substance. However, when Gahn isolated this metal in 1780, he named it manganese from the Greek *manganidso,* "I purify," in allusion to the centuries-old use of the metal's dioxide in manufacturing glass.

Known to the alchemists as *metallum problematum* because it looked like but did not behave like a metal, it awaited the studies of Klaproth to show that this supposed metal was not one. Thus, Klaproth renamed the element tellurium, from the Latin *tellus,* "earth," in recognition of the fact that the element was a mineral. Later, when Berzelius discovered a new element associated in the same ore with tellurium, he named it selenium from the Greek *selene,* "moon," in analogy to the earth (tellurium) and its satellite the moon (selenium).

The next metal of this period received two names. Because the ore in which it occurs was mistaken for that of tin and apparently caused a decrease in the yield of tin during smelting, the old German miners called it *wolfram* from *wolfrig,* "wolfish or gluttonous." In Sweden on the other hand, the same ore was called tungsten from the Swedish *tung,* "heavy" and *sten,* "stone." When Scheele produced the first acid of the new element from this last named ore, he called it tungstic acid and the metal tungsten. However, the d'Elhujars isolated the metal for the first time using wolfram ore and they assigned the name wolframium to it, from which we also derive the chemical symbol.

During the time of Herschel's discovery of the new planet named Uranus from the Greek *uranos,* "heaven" Klaproth isolated a new element which he called uranium indirectly honoring Herschel. Soon afterwards, Gregor and Klaproth independently discovered another element. Klaproth termed it titanium, deriving the name

from the Titanes, half-gods of Greek mythology and the children of Uranus and Gae (heaven and earth), because the element was discovered after uranium.

Long imported by French jewelers, the hyacinth type gem "Jargon de Ceylon" derived its name from the Arabic *zargun,* "stone," and meant literally "stone from Ceylon." When Klaproth recognized a new element in a variety of this gem called a "zircon," he named it zirconium. From another jewel mineral called beryl, Bussy and Wohler isolated a new metallic element which they called beryllium from the Greek name *beryllos* for the gemstone known to the ancients.

Governor Winthrop of Connecticut did not know that the new mineral which he discovered near his home and named columbite could become so "tantalizing" to chemists. Yet it took the efforts of four renowned chemists Hatchett, Ekeberg, Rose, and Hermann working from 1801 to 1844 before the two new elements in the mineral columbite could be positively separated and identified. One of these was called columbium after the mineral which honored America, and the other was called tantalum from Tantalus, son of Zeus, who was punished by standing in water with beautiful fruit trees hanging above him. The waters forever retreated before his thirsty lips and the fruits were always just out of reach, very much like the chemists' efforts to isolate the element.

Four elements which have in common the fact that their isolation in this epoch was accomplished by electrolytic means, differ widely in the origin of their names. The first of these elements finds its etymology dating back to the Old Testament, which mentions that *nether* and vinegar mixed together effervesce. *Nether* was the Hebrew designation of sodium carbonate and became, respectively, *nitrum* and *natrium* in Latin. The latter name is also the present chemical name for sodium. The common name, sodium, stems from the Arabic *sudā* "splitting headache," for soda water was often used as a remedy in those ancient days. Potassium derives its names more directly: the chemical name kalium from Arabic *kali,* "ash" and the common name potassium from potash indicate its source, namely, the lixiviation of ashes. Calcium stems directly from the Greek *chalix,* "limestone," of which the element is a constituent. Much different from the others, the metal magnesium takes its name from the city of Magnesia in Asia Minor, which lends its name to the mineral magnesite in which the element occurs.

Physical properties feature prominently in the nomenclature of this period. For example, the element bromine derives its name from the Greek *bromos,* "stench," because of the pungent gas the fuming, red, liquid element releases. Similarly, the tetroxide of osmium is very disagreeable and poisonous; again the Greek lends us another word to describe the element, *osme,* "odor."

The Epoch of Spectroscopy.—Science was aided in 1860 by the application of spectroscopic methods to analysis and as a result several new elements were discovered by this means. The varied coloring of the spectrum of the elements was an inspiration for naming several new substances discovered during this epoch, and the nomenclature of this time is characterized by "colorful" names.

The first element of this period was cesium which was detected by Bunsen and Kirchhoff as a blue line in the spectrum. Its name stems from the Latin *caesius,* "sky blue." In quick succession three other new discoveries were made: rubidium, thallium, and indium, which took their names from the Greek and Latin words for the characteristic color of their spectral lines.

One exception in this period is that of the metal gallium, which takes its name from the Latin *Gallia,* "France," in honor of the discoverer's homeland. Another exception is that of helium, which was recognized in the spectroanalysis of the sun's chromosphere (during an eclipse) many years before it was known to exist on earth. For this reason the Greek *helios,* "sun," was borrowed to name the new gaseous element.

Epoch of Transmutation.—From 1925 to the present, new elements were man-made and synthesized in the laboratory to complete the gaps in the periodic table. With the aid of the cyclotron in artificially producing new substances, the list of elements was extended beyond the classic 92 so that now there stands an uninterrupted series of basic elements from no. 1 to no. 98. Alabamine, illinium, masurium, virginium filled in the missing links in the periodic system, while neptunium, plutonium, americium, curium, berkelium, and californium increased the number of elements from 92 to 98. Apparently more elements will be produced by the irradiative techniques of the cyclotron; elements no. 99 to no. 103 have already been predicted. The name seaborgium has already been suggested for the next discovered element, in recognition of Seaborg's achievements.

But however we may speculate as to the future course of nomenclature for the chemical elements, there is for the philologist and interested individual a rich lore, a technical insight, and a luxuriant history to be gleaned from a study of the naming of elements.

THE ORIGIN OF THE NAMES OF CHEMICAL ELEMENTS

Name of Element	Year of Discovery	Discoverer and/or name-giver	Origin and Etymology
Actinium	1899	Debierne, Giesel	Greek *actinos*, "beam, ray," in allusion to radio-activity.
Alabamine	1931	Allison	In honor of the state of Alabama where it was first discovered.
Aluminum	1827	Wohler	Because it was first recognized in salts called *alumen* by the Romans.
Americium	1945	Seaborg et al	In analogy to the element europium with which it possesses some different level similarities.
Argentum	B.C.	B.C.	From Greek *argyros* "silver," through Latin *argentum*.
Argon	1894	Ramsay & Rayleigh	Greek *argon*, "lazy, inert," because of its inertness.
Arsenic	1250	Albertus Magnus	Greek *arsenikos*, "male," from early belief that metals were of different sexes.
Aurum	B.C.	B.C.	Latin *aurum*, "gold."
Barium	1808	Davy	Greek *barys*, "heavy," because of its weight.
Berkelium	1950	Seaborg et al	In honor of Berkeley, the city of its discovery.
Beryllium	1828	Bussy & Wohler	Greek *beryllos*, a green gem in which it occurs.
Bismuth	1753	Claude Geoffroy	German *weisse masse*, "white mass"; later *wismuth*. Cf. text.
Boron	1808	Davy, Thenard	After its source: borax, which stems from the Arabic *buraq*.
Bromine	1826	Balard	Greek *bromos* "stench," because of its odor.
Cadmium	1817	Stromeyer	Greek *kadmia*, "calamine," because it is nearly always found associated with calamine.
Calcium	1808	Davy, Berzelius	Greek *chalix*, Latin *calix*, "lime," in which the element occurs.
Californium	1950	Seaborg et al	In honor of state of California, where it was discovered.
Carbon	B.C.	B.C.	Latin *carbo*, "coal, ember, charcoal."
Cerium	1803	Klaproth	After the contemporarily discovered planetoid Ceres, which was named after the Roman goddess of agriculture.
Cesium	1860	Bunsen, Kirchhoff	Latin *caesius*, "sky-blue," after its spectrum.

Name of Element	Year of Discovery	Discoverer and/or name-giver	Origin and Etymology
Chlorine	1774	Scheele	Greek *chloros*, "light green," after its color.
Chromium	1797	Vauquelin	Greek *chromos*, "color," because of the various colors of its compounds.
Cobalt	1735	Brandt	German *kobold*, an evil spirit of German folklore.
Columbium	1801	Hatchett	For Columbia, the United States; from the mineral columbite.
Cuprum	B.C.	B.C.	After the Island of Cyprus, famed for its copper mines.
Curium	1944	Seaborg et al	In honor of the Curies, for their early research in radioactivity.
Dysprosium	1886	de Boisbaudran	Greek *dysprositos*, "hard to get at," because of its difficult separation.
Erbium	1843	Mosander	For the Swedish town Ytterby
Europium	1901	Demarcay	In honor of Europe; cf. americium
Ferrum	B.C.	B.C.	Latin *ferrum*, "iron."
Fluorine	1886	Moissan	From its occurrence in the mineral fluorite.
Gadolinium	1880	Merignac	From its occurrence in gadolinite, a mineral named for the Finnish chemist Gadolin.
Gallium	1875	de Boisbaudran	After the Latinized name of his country, *Gallia*, "France."
Germanium	1886	Winkler	Latin *Germania*, "Germany."
Hafnium	1923	Coster & von Hevesy	Latin *Hafnia*, "Copenhagen."
Helium	1895	Ramsay, Cleve	Latin *helios*, "sun," because it was discovered in the sun's chromospheres.
Holmium	1878	Soret	Latinized form of Stockholm, *Holmia*.
Hydrargyrum	B.C.	B.C.	Greek *hydor*, "water" and *argyros*, "silver."
Hydrogen	1776	Cavendish	Greek *hydor*, "water" and *gennao*, "produce."
Illinium	1926	Hopkins	Discovered at the University of Illinois and named in honor of the state.
Indium	1863	Reich, Richter	Latin *indicum*, "indigo," because of its indigo blue spectral line.
Iodine	1811	Courtois	Greek *iodes*, "violet," from the color of the vapor.
Iridium	1803	Tennant	Greek *iris*, "rainbow," because of various colors of its salts.
Kalium	1807	Davy	Arabic *kali*, "ash."
Krypton	1898	Ramsay, Travers	Greek *kryptos*, "hidden," because it remained in obscurity in the least volatile fraction of liquid argon.
Lanthanum	1839	Mosander	Greek *lanthanein*, "to lurk" because its oxide was discovered unsuspectedly concealed in cerium oxide.

Name of Element	Year of Discovery	Discoverer and/or name-giver	Origin and Etymology
Lithium	1817	Arfvedson	Greek *lithos*, "stone," because it was discovered in a mineral.
Lutecium	1907	Urbain	Latin *Lutetia*, ancient name of Paris.
Magnesium	1808	Davy	Discovered in the mineral magnesite found near and named after the city of Magnesia.
Manganese	1774	Gahn	Greek *manganidso*, "I purify," because it is used in manufacturing glass
Masurium	1925	Noddack	In honor of Masuren, the Southern part of East Prussia.
Molybdenum	1782	Hjelm	Greek *molybdos*, "lead ore," because it was confused with graphite (black lead)
Natrium	1807	Davy	Hebrew *nether*; Latin *natrium* "carbonate of soda."
Neodymium	1885	von Welsbach	Greek *neos*, "new" and *didymos* "twin," because the supposed element didymium was separated into two new elements.
Neon	1898	Ramsay & Travers	Greek *neos*, "new"; it was a new element found in presumedly pure argon.
Neptunium	1940	Abelson, McMillan	For the planet Neptune is next in order to Uranus, as neptunium is next to uranium in the series of elements.
Nickel	1751	Cronstedt	Abbreviation of German *Kupfernickel*, "devil copper."
Nitrogen	1772	Rutherford	Latin *niter*, "niter" and Greek *gennao* "produce."
Osmium	1803	Tennant	Greek *osme*, "odor," because of the stench of its tetroxide.
Oxygen	1774	Priestly	Greek *oxys*, "sour," *gennao* "produce"—"acid producing."
Palladium	1803	Wollaston	After the planetoid Pallas.
Phosphorous	1669	Brandt	Greek *phos*, "light" and *phoros*, "bearing," thus, light-bearing element.
Platinum	1735	Ulloa	Spanish *platina*, diminutive of silver.
Plumbum	B.C.	B.C.	Latin *plumbum*, "lead."
Plutonium	1940	Seaborg	After planet Pluto next in order beyond Uranus and Neptune.
Polonium	1898	Curie	In honor of Poland, Marie Curie's homeland.
Praseodymium	1885	von Welsbach	Greek *praseo*, "green," *didymos*, "twin," because it is green and was discovered in the supposed element didymium.
Protoactinium	1917	Hahn, Meitner	Greek *protos*, "first," + actinium; it forms actinium by emiting an alpha particle.
Radium	1898	Pierre & Marie Curie	Latin *radio*, "to shoot rays."
Radon	1900	Dorn	From *radium*, to show that its source is radium.

Name of Element	Year of Discovery	Discoverer and/or name-giver	Origin and Etymology
Rhenium	1925	Noddack, Tacke, Berg	In honor of Germany's Rhine; Latin *Rhenus*.
Rhodium	1803	Wollaston	Greek *rhodon*, "rose red," because of the color of its compounds.
Rubidium	1861	Bunsen & Kirchhoff	Latin *rubidius* "ruby red," from the color of its spectral line.
Ruthenium	1844	Claus	In honor of Russia; Latin *Ruthenia*.
Samarium	1879	deBoisbaudran	It was found in the mineral Samarskite, named for the Russian geologist Samarski.
Scandium	1879	Nilson	In honor of Scandinavia.
Selenium	1817	Berzelius	Greek *selene*, "moon," discovered associated with tellurium, named after earth.
Silicon	1823	Berzelius	Latin *silex*, "flint"; from its source silica.
Stannum	B.C.	B.C.	Latin *stannum*, "tin alloy."
Stibium	B.C.	B.C.	Greek *stibi*, "antimony."
Strontium	1790	Crawford	For its source strontianite, mineral named after Scottish village of Strontian.
Sulfur	B.C.	B.C.	Latin "*sulphur*." See text.
Tantalum	1802	Ekeberg	For Tantalus, son of Zeus, because of difficult isolation due to insolubility in most acids.
Tellurium	1782	von Reichenstein	Latin *tellus*, "earth."
Terbium	1843	Mosander	After the Swedish town Ytterby, where it occurs in the mineral gadolinite.
Thallium	1862	Crookes	Greek *thallos*, "green twig," for its green spectral line.
Thorium	1828	Berzelius	For the god Thor in Teutonic mythology.
Thulium	1879	Cleve	After *Ultima Thule;* designation for Iceland or Norway used by Roman writers.
Titanium	1791	Gregor	Greek *Titanes*, demigods and first sons of the earth.
Uranium	1789	Klaproth	After the planet Uranus, discovered by Herschel in 1781.
Vanadium	1830	Sefström	For goddess Vanadas (or Frigga) in Norse mythology.
Virginium	1929	Allison	After Virginia, the discoverer's home state.
Wolframium	1783	d'Elhujar Brothers	German *wolfrig*, "gluttonous."
Xenon	1898	Ramsay & Travers	Greek *Xenon*, "stranger," found in residue of liquid argon
Ytterbium	1878	Marignac	After Swedish town of Ytterby, where it occurs.
Yttrium	1794	Gadolin	After town of Ytterby, where it occurs in the rare earth Yttria.
Zinc	1746	Marggraff	German *Zink*, "prong or tine," in allusion to its crystalline structure.
Zirconium	1789	Klaproth	Arabic *zargun*, a gem stone, gold color.