

THE SECRETS OF THE SEVEN METALS

A BRIDGE BETWEEN
HEAVEN AND EARTH

NICK KOLLERSTROM

NEW ALCHEMY PRESS

THE SECRETS OF THE

SEVEN METALS

*A Bridge between
Heaven and Earth*

by Nicholas Kollerstrom Ph.D.

The Secrets of the Seven Metals

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Dedication

To Jessica, for no particular reason

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Foreword

There are moments in the solitude of night when gazing up into the brilliance of the heavens one is confronted with the vast and infinite mysteries of space, of the coruscating constellations of stars and the ordered procession of the planets. But such moments of contemplation are rare these days. As the sprawling cities with their perpetual illumination have dimmed the silent beauty of the night, so it seems our perceptions have also dimmed, having become clouded and unsure. No longer attuned to the rhythms and cycles of the planets and their influence upon the earth we have become cut off from a broader, more encompassing vision of the universe.

The resulting sense of loss and separation has only been intensified by the jejune worldview of modern science, despite the promise of sophisticated technology. Having stripped the planets of their mythological meaning and magical potency, it has given us instead mere aggregations of lifeless matter, inert spheres spinning meaninglessly through a vast emptiness.

Yet there is a growing disenchantment with this cold and mechanistic view of the universe. The phenomenal growth of interest in astrology, for example, vividly demonstrates the need within people to reestablish their relationship with the cosmos, a need no longer satisfied by abstractions of physicists or the blind doctrines of religion.

Here in this book the foundation for such a new body of knowledge is firmly laid. Here is an extraordinary conjunction of two worlds, that the author is well qualified to make being both an astrologer having earned a Cambridge science degree. Effortlessly he straddles both worlds, validating the knowledge of the ancients by using the techniques and discipline of modern science.

Astrologers have known for centuries that the planets influence earthly events and human behaviour - planting by the moon is as ancient as farming (and was the title of a previous work by the author). Science has never accepted such assertions, but here in this book the reader will see images captured in the careful crystallization of metallic salts, during such planetary aspects as conjunctions and oppositions, which describe the character of the planets involved. The 'signature', to use an old alchemical term, of the planet is imprinted upon its metallic representative on earth. We realise, as the experiments unfold, that an invisible relationship really does exist between the planets and the metals they were said to rule in ancient times. It is this direct perception through our own senses which

restores meaning to an otherwise fragmented and disparate world.

The author has researched and lectured widely on this subject and other topics of a Hermetic nature for the last 20 years. This present work grew from a small book entitled *Astrochemistry* published in 1984, but here the theme is greatly expanded with the inclusion of many articles, and woven into a dynamic presentation of these ideas.

The Alchemical doctrine of the seven noble metals is revitalised and transported into the twentieth century with the addition of the radioactive metals uranium and plutonium, and the extraordinary synchronicity of their creation in modern laboratories with the powerful influence of the 'new' trans-Saturnian planets, Uranus and Pluto. But there is another vital aspect the author includes, one that is completely ignored by modern scientific research, and that is the planetary influence upon the psyches of eminent scientists at the moment of their key discoveries. Thus the reader will realise how profound is the relationship between the cosmos, the earth and the individual, how intimately we are all involved with the cosmic process of creation.

It is perhaps fitting here to thank a little-known but brilliant German scientist named Lilly Kolisko who spent her lifetime researching 'the influence of the stars upon earthly substance'; it was her experimental work earlier this century that gave impetus to the research of the present author and his colleagues. While researching my book *Metal Power* it was a humbling experience to come across her work, I had no idea it was being continued by contemporary researchers until after my book was published and an unexpected connection was made with Nick Kollerstrom. Since then it has been a privilege to see *Metal-Planet Affinities* take form. Here is a study of celestial influence that can no longer be swept under the carpet by those who refuse to acknowledge the subtle workings of a living universe. The old world view is rapidly metamorphosing into a vibrant, living exemplar for the future. This book is a potent catalyst for the transmutation.

Alison Davidson

Editor of 1993 edition, co-founder of Borderland Science Research Institute, CA and author of *Metal Power*

Introduction

A FINE STATUE OF MERCURY, god of healing and thieves, stands in the British Museum, as it earlier stood in a temple of Roman Britain, in the West country. Around this statue were found many rolled-up pieces of lead foil, inscribed with curses. This fact sadly suggests that early Britons failed to apprehend the nature of Hermes/Mercury. Had blessings been deposited, inscribed on silver, then no doubt Hermes could have done something about them. The present work is *Hermetic*, and let us hope that it will not likewise be approached with thoughts of leaden inertia, which will fail to comprehend its arguments. By 'Hermetic' we mean, requiring a certain mobility of thought somewhat akin to the mutable metal mercury, to follow threads of argument woven between the earthly and celestial realms.

This work has been written for astral philosophers, as a series of essays, mainly in astrology journals, somewhat recast for publication. It is concerned with that which really and archetypally exists, and these archetypes *are beautiful*. I say that it concerns the Seven Pillars of Wisdom. A more civilized society would surely wish to apply this Hermetic knowledge in diverse ways. But here today, I cannot guarantee that this knowledge will be useful. For several centuries the Western world has developed concepts that were utilitarian, whereby Mother Nature has been exploited, raped and generally pulverised, treated her as non-living. These inorganic, mechanistic concepts have been tremendously successful in the manipulative purposes for which they were designed. The old alchemic cycle of becoming, including putrefaction, death and rebirth has been replaced by technology's straight line of production-use-dump it.

Thereby we stand on the brink of annihilation.

Suppose we in fact inhabit a living universe, how would things be different? We would need the faculty of *wonder* to appreciate the being, the being-ness of things as a starting-point, and perhaps the ostensibly rather boring realm of inorganic chemistry is a good place to start. This work may have no higher aim, than to enable the reader to gaze at the swirling green hues of a crystal of malachite and really *see* it, to move from the prosaic realm of number, dimension and weight to the qualitative realm of essence and being; and thereby become capable of wonder. I hope it won't sound

unduly pious to suggest that the word 'consider' may reacquire its celestial reference of *con-sidera*, 'with the stars', as theory becomes *theoria*, a contemplation of divine principles, as inherent in the realm of matter.

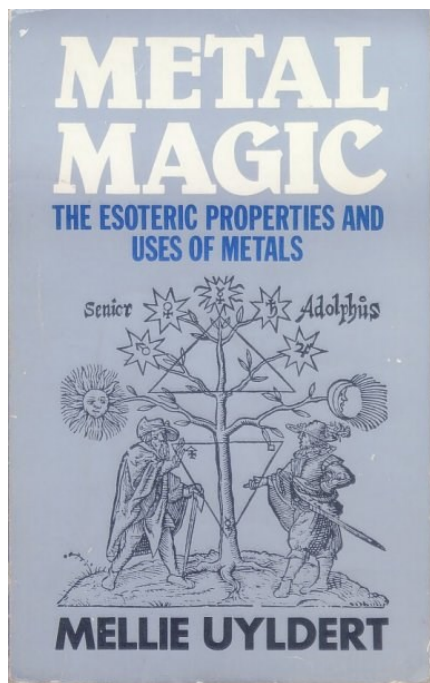
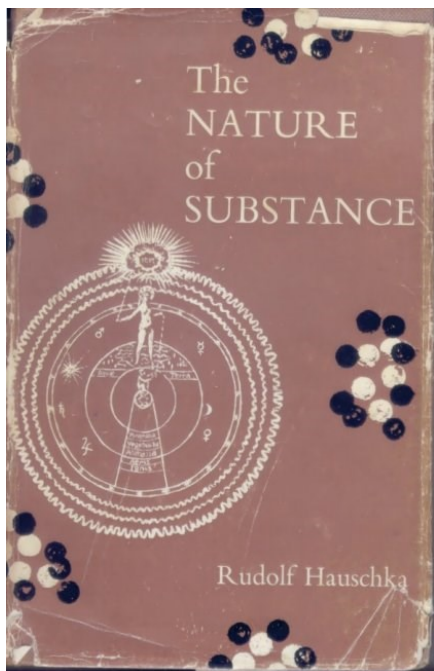
My earlier work *Astrochemistry* presented evidence for a belief which I claimed was older than chemistry or astrology, or even the earliest alchemic texts: the notion that certain metals have an inherent link or affinity with their parent planets.¹ Through many centuries, people were once accustomed to take for granted a living connection between the Earth and the heavens, and this was an expression of it.

The language needed to describe the concepts involved is, perhaps unavoidably, Mediaeval and prescientific. We quote from an essay concerning the great alchemist Paracelsus:

As it was with *Sol* and gold, so it was also with the other metals and their planets. The metals had somehow, the same *virtu* as the planet, or rather, a single spirit infused both planet and metal, one a celestial and one a terrestrial manifestation of the same force. This was not symbolism, but something much closer to literal speech, a fine line between the two which has been lost to us, and to our language.²

In 'Astrochemistry' I described a series of controlled experiments whereby patterns formed by metal ions in solution rising up into filterpapers, responded to particular celestial events. These 'time-experiments' as I call them, over conjunctions and oppositions of the planets, appeared to show that the metal salt solutions were responding to the planets traditionally associated with them. Reaction rates altered, as did colours appearing on the filterpaper pictures and measurable quantities of metallic precipitate, at the appropriate celestial moments.

Chemical experiments were thus validating the astrological notion of aspects, and the astrological concept of rulership, and also indeed casting light upon the astrological concept of orb. But, these experiments done in my youth have not been replicated for quite a long time, so I've relegated a quite brief account of them to an Appendix (There is quite a bit on the web for those who are curious). The procedure was developed by Frau Elizabeth Kolisko, in the early decades of this century, following indications by Dr Rudolf Steiner. What Kolisko discovered from a chemical point of view - for the benefit of chemists reading this, and I hope there will be a few - was that a reaction involving the precipitation of silver by iron was slow. It was a colloidal precipitation reaction which took several minutes. It is rare within the realm of inorganic chemistry for an ionic reaction to be slow in this manner, normally inorganic reactions are instantaneous. I haven't come across any chemistry book which discusses or even mentions this simple inorganic reaction as being slow - and that is quite apart from Kolisko's application of it.



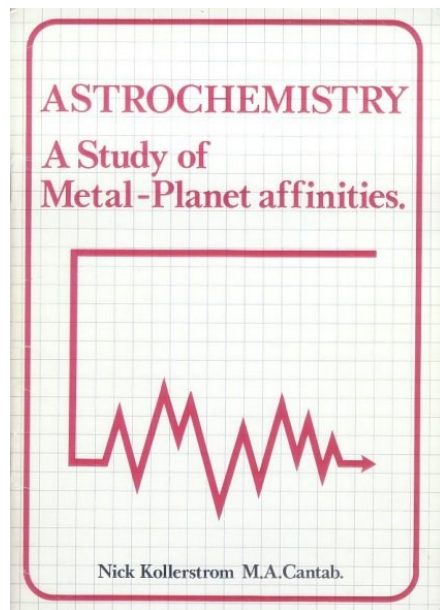
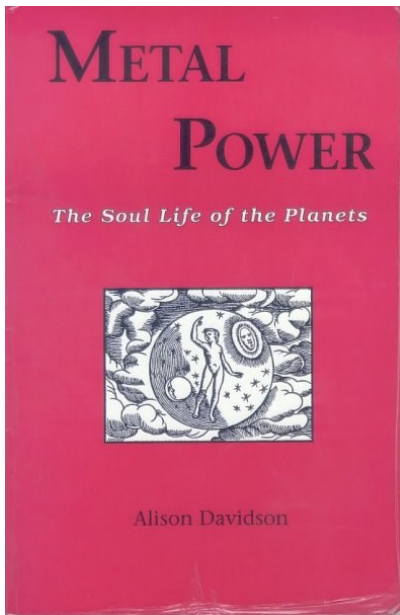
How it Works

As to how these experiments work, or why they should, maybe the great astronomer Johannes Kepler was on the right track when he declared, as regards how the Earth as a whole responded to celestial influence: 'Earth has a vegetative animal force, having some sense of geometry'. The earth is

stimulated by the geometric convergence of rays formed round it. The world-soul is sentient but not conscious. As a shepherd is pleased by the piping of a flute without understanding the theory of musical harmony, so likewise Earth responds to the angles and aspects made by the heavens, but not in a conscious manner.³

His Pythagorean notion was that astrology worked by a *musica mundana*. Kepler was the last astronomer of note to take astrology seriously, and perhaps further comprehension of the 'how' of celestial influence should proceed along the lines of his opus 'On the More Certain Fundamentals of Astrology.'⁴ It was composed in the form of an introduction to an almanack for the coming year.

Nowadays, explanations are supposed to involve a 'mechanism' to be accepted as 'rational.' Our concept of rationality very much involves processes at a microscopic or sub-visible level which produce visible phenomena, and are their explanation. Instead, let us recall the derivation of the term from 'ratio.' Certain symmetrical angles formed between the planets will exert some influence. That is the traditional Pythagorean attitude, twenty-five centuries old, which has an inherent link to musical theory. I find it *rational* to suppose that an angle, such as ninety degrees, forming between two planets, is in accord with effects taking place on Earth, even though no 'mechanism' may exist to account for this.



There was a historic juncture where chemistry and alchemy parted company:

The microscope marked the end of traditional alchemy and the herbal medicine and *Doctrine of Signatures* that were its allies. With the microscope came a new way of looking into substance, and we have not yet recovered from our curiosity about infrastructure to seek the real centre anew.⁵

What we are here going to mean by 'inner' is definitely not the matrix of atomic structure, but is rather, *quality*. This is not much of a word to bear the freight of meaning we shall be assigning to it, yet it will have to serve.

The opus, *Metal Power* by Alison Davidson⁶ has well described Kolisko's experience of the various celestial events she followed by means of her filterpaper experiments. These were primarily qualitative, in that her interest was in the changing images revealed by silver, and indeed also by gold and tin and the various metal salts her experiments used. She made these every day, or sometimes hour by hour depending upon the events involved.

Since Kolisko's time various persons have carried out experiments to check these claims. Some of these results have been negative but most of them were positive. Those described here were performed as carefully as possible, and owed their existence to a research grant provided by the Astrological Association, after the author addressed its annual conference in 1975 on the subject. Most people known to the author who have taken an interest in the experiments have experienced the reality of the metal/planet effect; while their methodology leaves room for improvement. But on the other hand, there is also the feeling that there is so much electromagnetic pollution around these days that the cosmic-etheric influences, however we picture them, are not so easily detectable as they were in Kolisko's day.

This book represents a journey of discovery into the metallic realm. I grew up with a sense of fascination for such chemistry, and used to make fireworks to see how their different hues came from mixing in the various metallic powders. My mother was a chemist and my father was a psychoanalyst, and they argued. This work is a resolution of their opposed viewpoints, as a personality study of the metals.

The reader who embarks on this journey, ranging from the depths of antiquity to outer space, from alchemists trying to make gold to the modern school classroom, may come to share this sense of wonder and mystery, and experience the metals in a new way. The alchemic idea is, that the metals as we know them represent a material expression of living cosmic principles. This was known and directly experienced in times gone by, but then faded away as the more contracted scientific consciousness developed, as the planets became 'mere' objects in space.

While the seven metals known to antiquity have from Greek times been associated with the 'planets' visible to the naked eye, I began to consider whether there was any comparable connection between the atomic-energy metals and extra-Saturnine planets. Initially I doubted whether uranium and plutonium had much of a connection with their celestial namesakes. A

breakthrough came on acquiring the exact moment in time when the cyclotron was switched on to create the first sample of plutonium, by Glenn Seaborg and his team at Berkeley, California. The result in Chapter Ten was my first attempt to analyse an astrological chart. The time of birth of Glenn Seaborg, whose team had created the unnatural new element was then obtained. I believe that there is a credible link between Seaborg's birth chart and the plutonium natal chart, as described.

Seven Characters

In 'Astral Portraits of the Seven Metals', the seven principal characters of this work are presented in the language of chemistry. These are the primordial archetypes, the metal/planet identities. (The term 'planet' is here being used in its old sense, referring to the seven bodies that can be seen moving across the sky, including both luminaries.) These themes are then further developed in the next section. We appreciate having copper and bronze around for decoration, *because* that helps us to experience its Venusian side.

Becoming aware of the deeper reality of the metals could enrich areas of modern life. For example an artist using metallic copper will better appreciate how to use it if its Venus-nature is comprehended; a doctor applying a gold preparation will be aided by knowledge of its solar attributes; a politician will better appreciate how to cope with the vast issues raised by the existence of plutonium if its chthonic, subterranean or Plutonic nature is appreciated. How sad that people wear gold and silver for decoration, without being aware of their solar and lunar being-essence: this is an empty materialism, of just feeling the greed from owning the gleaming metal.

To-date, the main interest in the matter here presented has been from astrologers, because of the way it validates in a practical way some of the principles of their ancient art. The present work provides a physical basis or counterpart to beliefs that astrologers otherwise experience in a merely psychological context. It is valuable and confidence-building for them to perceive that certain concepts central to their craft operate within the realm of nature, not just in human life.

This work has a lot of relevance to school chemistry lessons, by way of kindling wonder and fascination within the minds of pupils. Let us hope that in the future, school chemistry teachers will wish to use the imaginative truths here presented. A more personally enriching and humanly valuable approach becomes possible when the connection between the intellect and the imagination is fostered: we should not sunder apart the 'bare' facts of chemistry and the rich images of Greek mythology. Today's approach results in many pupils feeling alienated from science. The Mercury chapter does suggest such a pedagogic format, pointing the way to a more wholistic science.

The Mercury chapter was hard to compose, as its theme kept twisting and turning with so many different aspects and loose ends. Years went by while, like metallic mercury, it resisted being fixed into a final form. Then, a neighbour and friend Tony Jackson did an essay on the topic, as part of a homeopathy course. He was a jazz musician and therapist. After his death I got permission from his partner the astrologer Sue Rose to publish it, and I'm sure you will agree, his essay is better than mine!

The next chapter looks at the physiological role of copper in the female organism, relating this imaginatively to the Venus-nature. There was a paucity of references to the vital role of copper-serum blood levels in the female cycle. Textbook discussions on the subject were by men whose interest in copper lay merely in its supportive role for the formation of the iron-molecule haemoglobin. Iron/Mars is normally fairly obvious in the way it manifests, however the more subtle copper/Venus energy in the blood plasma is surely of no less interest. Much of the research on which the copper-chapter is based was carried out at just one American hospital, which specialises in treating patients for mineral imbalances.

Dawn of Modern Science

Years later, and in a different context, I came to investigate some decisive moments in the history of science, which led to the final *Metallic Moments* section⁷. Events involving specific metals are there considered, where their characters manifest in the event. The theory of correspondences gives us predictions as regards the kinds of planetary alignments we should expect at such times. Further exploration of charts associated with the genesis of atomic energy occurs in this section: is extent uranium 'really' linked to Uranus and plutonium to Pluto? Studying the key moments, when Fermi switched on the first atom pile in Chicago and when Seaborg switched on the Berkeley cyclotron to create the initial sample of the artificial element plutonium, both timed within a minute or so, was an educational experience.

I suggest that it gives us a deeper insight into the history of science to appreciate how these archetypes have worked in its unfolding.

Turning to a different example, I was impressed by the role of the late Carl Sagan in the landing of the Viking spacecraft on Mars, and the formative effect this had upon his life (Chapter eleven). Such events enable us to explore the dynamic relationship between the psyches of some eminent scientists and their historic deeds, through studying the times involved. We look at the configurations of the charts of these men - what an astrologer calls, *transits* - when the key moments arose, as they entered into history through their operations upon matter. (A transit is an event whereby the position of the planets in the heavens come into a relation with one's natal chart). Historic "metallic moments" can often be dated, for example the day when Michael Faraday first generated an electric current using an iron

and copper apparatus, but the time is usually lost. I also charted the moment when the poet Alan Ginsberg staged a sit-down protest on a railway line in front of a plutonium-bomb waste waggon and stopped it, having just finished the last stanza of his poem, 'Plutonium ode'. He was just having a Pluto-return (square) but also a Mars opposition-Mars and Moon-trine-Moon: the stars chime, and lend a dignity to human action.

Gold is chemically unreactive, and in consequence there are no notable 'golden moments' in the history of science that can be dated. The source of dated events whereby one can examine the traditional solar nature of gold, lies within the alchemic tradition. A chapter on 'goldmaking' events in European alchemy, aims *not* to raise the issue of whether such events 'really' happened - probably unanswerable - but rather to view them in a philosophical manner as moments in time, with regard to Jung's maxim that 'whatever happens in a moment of time will have the quality of that moment.'

In the seventeenth century, the notion of the 'inside' of things suffered a sea-change, as it ceased to mean a qualitative/symbolic essence, and instead came to signify what could be seen down a microscope. To quote the science historian Alexandre Koyré, the 'scientific revolution' in Europe involved:

...the disappearance - or the violent expulsion - from scientific thought of all considerations based on value, perfection, harmony, meaning and aim, because these concepts, from now on merely subjective, cannot have a place in the new ontology.⁸

Plenty have complained about this dilemma, but it remains with us. The psychologist R.D.Laing described how Galileo's vision of a universe described only in terms of mathematics led to the loss of:

...aesthetics and ethical sensibility, values, quality, form; all feelings, motives, intentions, soul, consciousness, spirit. Experience as such is cast out of the realm of scientific discourse.⁹

That is quite a lot to lose! If we start from something fairly simple, viz. inorganic chemistry, and try to discern what rightly belongs to the cosmic process, we may hope to make progress.

In Britain, leading illuminati of what later came to be called the scientific revolution favoured a sobered-down and 'purged' or purified astrology. Francis Bacon attacked astrology and alchemy in his *Advancement of Learning*, but then later came to modify his view: the trouble with astronomy, he opined three and a half centuries ago, was that it had been taken over by the mathematicians. The world stood in need, he affirmed, of a very different astronomy, of a *living astronomy*, of an astronomy which should set forth *'the nature, the motion, and the influences of the heavenly bodies, as they really are.'*¹⁰ These are fine and important words from a

British philosopher, greatly ignored by those claiming to use 'the Baconian method.' We here foster what Lord Bacon called 'a living astronomy'

Bacon objected to astrology on the grounds that it was 'so full of superstition,' yet said that he 'would rather have it purified than altogether rejected.' He hoped that it would be possible to use the celestial indicators for predicting 'all commotions or greater revolutions of things, natural as well as civil' which phrase quite well applies to the 'metallic moments' we shall be here examining. 'I will add one thing besides (wherein I shall certainly seem to take part with astrology if it were reformed); which is, that I hold it for certain that the celestial bodies have in them certain other influences besides heat and light.'¹¹

The architect Christopher Wren, later President of the Royal Society, expressed such a Baconian view in an early 1657 lecture:

there is a true Astrology to be found by the enquiring Philosopher, which would be of admirable Use to Physick, though the Astrology vulgarly receiv'd, cannot be thought extremely unreasonable and ridiculous...¹²

The view of Robert Boyle, one of the founders of the Royal Society, who came to be called the 'Father of modern chemistry', has a special interest:¹³

...it may, notwithstanding all those objections, still be certain, that these celestial bodies, (according to the angles they make upon one another, but especially with the sun or with the earth in our meridian, or with such and such other points in the heavens) may have a power to cause such and such motions, changes, and alterations... as the extremities of which shall at length be felt in every one of us.

Such were the views of some of the early pioneers of science, as have not yet been developed in the course of time.

The essays presented in this volume unfold a theme not easy to express, concerning a connection between earth and sky. At times over thrice seven years I felt like some alchemist tending the Great Work, which could not be hurried, but it has now matured sufficiently to come out of the athenor.

Thanks are due to several persons chiefly within the UK's Astrological Association who have supported these endeavours, especially its late President Charles Harvey; to (many years ago) the late John Davy at Emerson College, who was given an OBE for science journalism and who introduced me to the Kolisko experiments in 1970; to R.M. who after all these years still has to remain anonymous and to Michael Drummond, both of whom participated in the Kolisko experiments, only briefly described here, which drew me into the whole topic; and last but not least to my Mother, who had a doctorate in chemistry, and who taught me how to be intrigued by chemical issues.



An alchemical Hermes, where is he going?

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14. I wrote to Kolisko, in 1975, and a friend of hers later told me she received my letter, but she never replied. That was I believe the year when she had a great bonfire of her remaining notes saying 'no-one will want these.'

Chapter 1

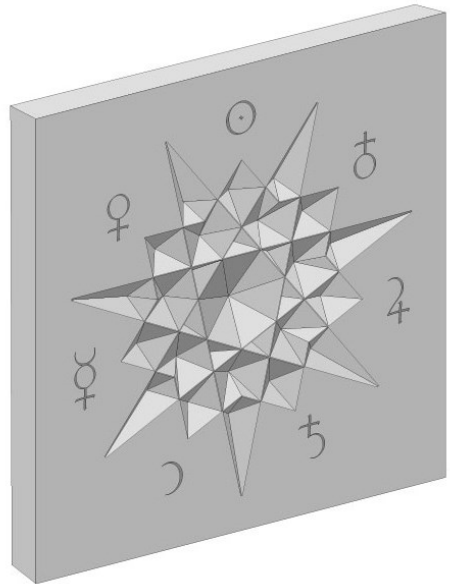
Seven Notes on a Scale

*Wisdom has set up her temple,
She has hewn her seven pillars*

Book of Proverbs¹

From late antiquity up until the mid-eighteenth century, the number of metals known and recognised as such was seven. They were: lead, tin, iron, gold, copper, mercury and silver. Brass, made from copper, was used, but no-one realized it was an alloy that used zinc, until the latter half of the eighteenth century. The metal which finally broke the sevenfold spell of millennia (in 1752) and was called the 'eighth metal' was platinum, emerging from the gold mines of Columbia.

Belief in a linkage of these seven metals with the 'seven planets' reaches back into prehistory: there was no age in which silver was not associated with the Moon, nor gold with the Sun. These links defined the identities of the metals. Iron, used always for instruments of war, was associated with Mars, the soft, pliable metal copper was linked with Venus, and the chameleon metal mercury had the same name as its planet. Then, around the beginning of the 18th century these old, cosmic imaginations were swept away by the emerging science of chemistry. The



characters of the metals were no longer explained in terms of their cosmic origins but instead in terms of an underlying atomic structure. New metals started to be discovered which made the old view appear limited.

In the 20th century new lines of approach to this old subject were opened up through work done within the Anthroposophical movement founded by Rudolf Steiner, and we here draw especially from the works of Rudolf Hauschka² and Wilhelm Pelikan.³ They viewed the traditional seven metals as expressing most fully the seven planetary characters, in a way that the many other metals known today do not:

The seven fundamental metals represent something like the seven notes of a scale. As there exists a great variety of intermediate tones within the scale, so one can recognise intermediate tones between the metals.⁴

The extra-light metal lithium is used for hydrogen bombs, anti-depressant pills and bicycle axle grease, thereby one feels its 'lightness of being.' But, that won't give us a planetary affinity for it. Magnesium emits a brilliant light on burning, used for photo flashlights, so would this make it solar? It is used for ultra-light alloys in supersonic aircraft etc, and is the key metal used in chlorophyll, whereby solar energy is metabolised by plants. Wilhelm Pelikan suggested that it should be viewed as a sun-metal, and let's leave that open as a possibility.

Physical Properties

We experience metals as differing from non-metals by virtue of their lustre, their resonance, their malleability and conductivity - these are their *key physical properties*. Metals can be polished to shine (lustre), will produce tones when struck, ie they *sound* (resonance), when hammered they don't shatter, they can be beaten into shape, and will quickly become hot if one corner is heated. The traditional seven metals can be arranged in a scale, by these key physical properties. This turns out, remarkably, to be the same scale as an ordering of their associated planets, in terms of their speed of movement. The Table below expresses metallic conductivity both as thermal (conducting heat) and also as electrical, scaled for convenience to silver = 100.⁵

The planets are ordered by something which one can experience quite directly, namely how fast they move



across the sky - from the Moon as the fastest moving to Saturn as the slowest. This means using a *geocentric perspective*, as we see their mean angular speeds from the Earth, and gives the traditional ordering as used to be assigned to the planets in the old, Ptolemaic system - for almost two thousand years. This ordering was almost universally accepted, up until the time of Copernicus, and had the sphere of Mercury *nearer* the Earth than Venus (mathematically, this may be the case: ie, Mercury is more often nearer to us than Venus.⁶

Here is an old engraving of the astronomer Claudius Ptolemy, with the seven spheres of the planets behind him, from the furthest-away sphere of Saturn down to Mercury the fastest-moving planet- you can't see the bottom or seventh sphere of the Moon, closest to Earth. In order these are,

♄, ♀, ☿, ☉, ♀, ☿, ☾.

People have believed in that ordering of the heavenly spheres for a far longer time than they have accepted the modern world-view.

If you're hoping to get to heaven when you die, you might want to check out Dante's *Paradiso* which gives the sequence of the heavenly spheres. Dante first arrives in the Moon-sphere, then that of Mercury, and so on in this same order until the glorious sphere of Saturn is reached.

We can summarise the linkage we are here looking at, in the words of biochemist Dr Frank McGillion:

The orbital motion of the planet correlates in sequence with its corresponding metal's conductivity... The slower a planet moves, the less able its corresponding metal is to conduct electricity!⁷

Table 1 - Metallic Conductivity versus Planetary Motion

scaling electric and thermal conductivities to silver as 100
(Values in brackets are for solidified mercury)⁸

Planet	Speed	Metal	Conductivity of	
	Deg./day		Warmth	Elec'
Moon	13	Silver	100	100
Merc.	1.4	Merc.	(68) 2	(76) 2
Venus	1.2	Copper	94	95
Sun	1.0	Gold	74	72
Mars	0.5	Iron	20	17
Jupiter	0.08	Tin	16	13
Saturn	0.03	lead	8	8

For the alchemists of old, metals shared their characteristic properties in different degrees. They were *not* separate elements, and had these *experiential* properties in common. A metal was purified in a furnace, where it would melt

but not burn. Zinc could never be a metal, because it quickly burnt up on being heated. These criteria put them in a quandary over mercury: it was generally recognised as metallic, though paradoxically so.

This experiential definition limits us to what we'll call 'real' metals, whereas the modern definition of a metal is wholly abstract - in terms of atoms that are electron-donors - and includes substances that don't at all resemble these: for example, potassium is a waxy substance that bursts into flame upon contact with water. A lump of sodium will buzz around on the surface of water, in a quite exciting manner. But be careful not to cut off too large a lump of this soft, waxy metal.

Nowadays, children in science lessons are given these totally abstract concepts, that will never impact upon their lives, and are hardly allowed to experience the primary properties of everyday metals. But here we concentrate on things that are *elementary*. Thus, contrasting the front and back gardens, we see gleaming steel on the car in the front garden, and the black wrought-iron gate at the back: how strange that these are the same element, with just a few percent of carbon added, and that is the mystery of iron, whereby it will turn into steel.

In an elementary school the Mars-iron stories would be taught first, involving the clash of steel: eg how the ancient Romans kept winning their battles because they could forge iron and steel which their opponents could not. (A modern iron-Mars archetype might be Popeye the sailorman, who ate spinach to become extra-strong, the idea being that spinach was high in iron. It seems that this is not actually the case, it was all a big mistake!)

Here are the key physical properties:

Conductivity: copper is used for electrical wiring being a good conductor, as lead is used for fuses because it is such a poor conductor. Mercury is not included on this table being a liquid - conductivities of metals when liquid are much lower than when they are solid.

Lustre (or reflectance): silver is the most perfectly reflecting metal of the seven and is therefore used for making mirrors. Mercury also has a very high lustre and is likewise used for such: these are the two mirror-metals. In antiquity, mirrors of copper or bronze were used. The other metals show an approximate gradation in lustre down to lead which has a very dull surface.

Resonance: copper is much used in musical instruments because of its high resonance although silver instruments have the clearest, purest tones - 'silver bells', and this property again decreases down the scale to the dull sound lead makes on being struck.

Malleability: Hauschka described how metals at the top of the list are highly malleable, but cannot be well cast, whereas those at the bottom can be cast but not forged. Gold he described as holding a balance position in that it could equally well be cast or forged.

These scales show an increase in inner mobility from lead, the most inert, up to silver, which parallels the increasing angular speeds of the planets. Hauschka, who first described this, concluded memorably:

We see then that planetary movement is metamorphosed into the properties of earthly metals.⁹

Chemical Activity

'This isn't just a date, It's ... chemistry

from the film, 'Something about Mary'

Valency Valence is the combining ratio: hydrogen has a valency of one, oxygen of two, and carbon, four. It tells how many 'arms' each element has, whereby it joins up with others. One carbon atom bonds with four hydrogens to give methane (CH₄), while oxygen bonds with just two hydrogens, to make water as H₂O.

Most metals have more than one possible valency state. The Table shows the valencies which the seven metals normally display, while any others that can form are rare and unimportant¹⁰ Oddly enough, their valencies line up with the traditional Ptolemaic ordering of the heavenly spheres:

Table 2 - Valences, i.e. combining ratios

Metal	Silver	Mercury	Copper	Gold	Iron	Tin	Lead
Valence	1	1 + 2	1 + 2	1+3	2+3	2+4	2 + 4
Planet	R	S	T	Q	U	V	W

Silver, which showed the highest conductivity and gave the purest sound, has only a single valency for every linksss it forms with other elements. Like swans which remain monogamous and faithful to one partner all their life, the Moon-metal silver has only one arm of valence. In contrast, those which scored lowest on their physical properties, tin and lead, being least conductive etc, are most active and greedy in their ratios of combination.

Reactivity: Some metals are inert, for example gold hardly combines at all, these are the 'noble' metals (platinum, silver); whereas tin and lead are reactive and will dissolve even in weak acids. We can put the classical metals in a sequence of their chemical activity, which is conveniently measured by what chemists call their 'electrode potential.' This tells us how reactive their ions are in solution. Inactive metals as will not liberate hydrogen from an acid are called 'electronegative', while the more active metals which will liberate hydrogen are 'electropositive'. This gives a useful scale of chemical activity for metals,

measured by the 'standard electrode potential' of a solution at a given concentration.

Let's start (as McGillian here advocated) with the order of the planets going out from the Sun, and then the corresponding electrode potentials of the metals are:

Table3: Electrode potentials, Earth-centred

Electronegative				Electropositive		
Sun	Mercury	Venus	Earth	Mars	Jupiter	Saturn
Gold	Mercury	Copper		Iron	Tin	lead
-1.50	-0.79	-0.33		+0.04	+0.14	+0.13

Thereby McGillian contrasted the more reactive, 'electronegative' metals as linked to planets *inside* Earth's orbit with electropositive ions which correspond to those *outside* the Earth's orbit.¹¹ Electrode potential is measured with respect to that of the earth, which indicates the relevance of the geocentric viewpoint here involved. He concluded,

The earth-centred universe of the alchemists is polarised into positive and negative. It is chemically yin and yang.

A more traditional ordering (Tables 1 & 2) puts silver at the top of the list and Sun-metal gold in the middle. That gives us 'above the Sun' planets, Mars, Jupiter, and Saturn having electropositive metals, and vice versa for 'below the Sun' planets (Silver's standard electrode potential is -0.8). Either way, the correlations are impressive.

Atomic Number

Each element has an 'atomic number', and the Periodic Table of Elements arranges them in sequence: hydrogen has an atomic number of one, carbon 6 and oxygen 8. The atomic weights are roughly double this, so carbon has atomic number 12 and oxygen 16. This ordering by atomic numbers (or weights) gave insight into the chemical properties of each element. Mendeleev discovered how to do this, to arrange them in this way, and it was called the Periodic table. Thereby he found 'gaps' and could predict the existence and chemical properties of several elements not yet found. In the next century, these numbers were 'explained' by concepts of atomic structure. But we're not really here concerned with that, because this isn't a science treatise, it's an alchemical one.

Mendeleev's Table has seven rows or 'periods,' from the first row that has the lightest elements, hydrogen and helium, down to the seventh which has the extra-heavy, radioactive elements such as uranium and plutonium. Vertically, it has seven or eight columns (the eighth and last column with the inert gases is usually given as the zeroth column, with the others counted as 1-7): in a sense it also has seven columns. What are called 'group one' elements belong to its first

column, and these are all univalent, such as sodium. Group two (the second column) are bivalent like calcium, group three are trivalent, eg aluminium and so on. The number seven appears in this Table as dominant, and controlling the possibilities of what elements can exist.

When Uranus was discovered in 1781, by William Herschel, this kicked out the notion that there was something sevenfold about the heavens. Up until then, there had been seven spheres which could be seen to move across the sky. There still were such, but an extra unseen one had been added. After his discovery, there was no longer anything sevenfold about the world! This dire state of things persisted for nearly a century, until chemistry professor Dmitri Mendeleev formulated his Periodic Table. A seven fold pattern then reappeared in matter, in the science of chemistry. Bearing this in mind, it may be of interest to look at the moment in time when this new synthesis was created: the afternoon of March the first, 1869.

There were no less than six *septile-aspects* then present in the sky, between the planets. They were:

$$\begin{aligned} & \text{♃-♁ (1°), ♀-♁ (1° 10'), ♃-♁ (0° 10'),} \\ & \text{♁-♄ (1° 40'), ♀-♄ (0° 30'), ♃-♁ (1°)} \end{aligned}$$

The septile is a celestial aspect formed by dividing the circle into seven parts. It gives the angle of slope of the Great Pyramid, $51\frac{1}{2}^\circ$ The cosmos was in quite a sevenfold mode at that moment in time, when the new synthesis dawned upon Mendeleev. He had cut out cards for each known element, was trying to arrange them by their atomic numbers on his living-room carpet, dozed off, and when he woke up, it came to him! A sevenfold pattern was discerned in matter, during a period when sevenfold aspects were strong in the heavens.

Three Heptagons

Sequencing the classical seven metals by their atomic weights gives an order, which derives from our previous ordering using a heptagon pattern. If you put the seven metals in a heptagon *circle* in the sequence of their physical properties, as given above (Tables 1 & 2), then starting from iron, with the lowest atomic weight, and score alternately, which will give the ordering by atomic weights.

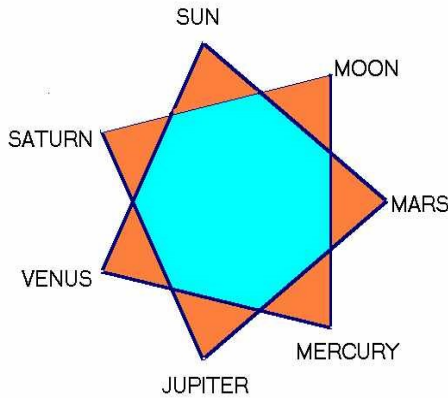
This is confusing! You may prefer to start off with the seven planets in their day-of-week ordering. The French names of the days of the week will give you the planetary names in Latin. Thus they are named after planetary deities, and the European languages (except Greek)

concur in this respect. Thus Thursday derives from 'Thor's day', while the French Jeudi is 'Jupiter's day', the thunder-wielding Thor being a Norse equivalent to Jupiter. Likewise there is an analogy between our Friday, as 'Freya's day', and Vendredi, 'Venus' day', with Freya as a Venus-deity, and so forth.

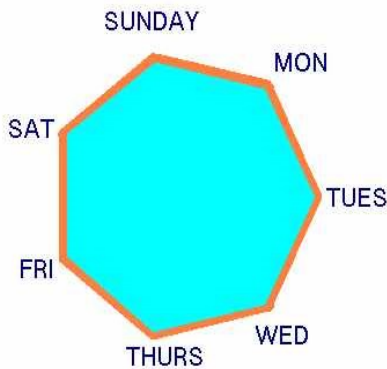
Here is a 19th-century bracelet giving this day of week order, see if you can recognise the deities. It starts (wrongly, one might say) from Monday, with the Moon-goddess. Then Tuesday for Mars, Wednesday for Mercury etc, ending with Apollo for Sunday.



I tend to call this sequence the Days of Creation because, as we'll see, it's the same as the sevenfold creation-sequence that unfolds in the first chapter of Genesis.



Traditional Planetary Sequence

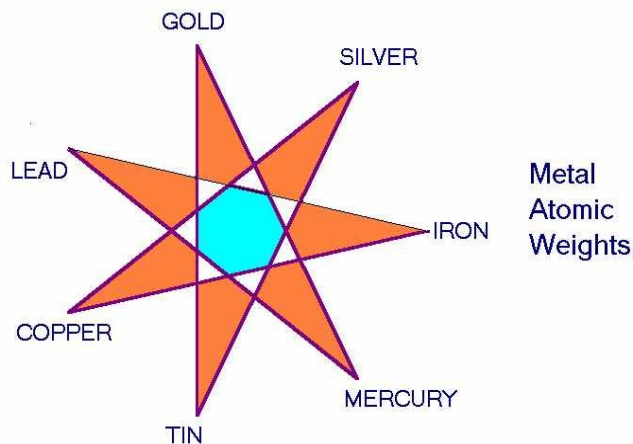


Seven Days of The Week

Using that heptagon-circle, select alternately to obtain a bi-heptagon: going twice round that gives you the ancient, Ptolemaic ordering of the planets. OK? Start from the Moon, as the sphere closest to the Earth, and you should end with Saturn as the most distant sphere. We saw how this refers to *both* their speeds of motion across the sky, *and* also to the ordering of the corresponding metals' physical properties.

Take it slowly, one step at a time.

Old books on astronomy described this sevenfold transform, from the Days of Creation sequence, i.e. the seven days of the week, to the old ordering of the planets, and they called this, the 'Hebdomad.'¹² Then, early in the twentieth century, the amazing third step of this argument was discerned,¹³ whereby selecting every *third* step around the circle created a star-heptagon, giving the ordering by atomic weight (or atomic number) of the metals! (N.B. Don't confuse this with density, it's not the same). One here starts from iron, as having the lowest atomic weight of the classical seven.



Atomic number follows the sequence of elements in the Periodic Table: hydrogen is 1, helium is 2, etc, with carbon as 6. Atomic weights are roughly double this, eg carbon has an atomic weight of 12. It may help to remember that isotopes come in here: the carbon-14 isotope has a different atomic weight, but it has the same atomic number because it's the same element. We don't really need atomic weights for this treatise, it's the atomic number sequence that gives the *magic heptagon* link-up of heaven and earth. Lead has the highest atomic weight of these seven metals - metals of higher atomic weight than lead are radioactive, they cannot remain stable. If you follow the heptagon, the sequence ends with gold, mercury and then lead, with atomic numbers 79, 80 and 82 -

even though gold is very much denser i.e. heavier than either lead or mercury. How strange!

Thus we see how a sevenfold pattern or mandala starts from the names of ancient sky-gods, somehow linked to the days of the week, and then contracts into sequences of physical and chemical properties of the metals. Wilhelm Pelikan was the first to describe these heptagon-patterns, though not in quite the sequence here presented. In a beautiful and mysterious manner, they link together the concepts of modern chemistry and ancient traditions of the cosmos. From a totally unexpected source, we receive confirmation that there is indeed something special about the 'seven metals' known to classical antiquity.

One American academician, Derek de Solla Price,¹⁴ was impressed by the way these heptagons worked, linking atomic weights of the seven metals and the revolutionary period of their respective planets. He was moved to write:

It seems quite plausible that much of astrological theory may rest on just such a basis of figurate rationality rather than upon empirical or special omen lore. In this sense astrology ... developed on a very rational basis, with a figurative theory and the associated symbolism at its centre.'

Try making your own heptagon, putting the seven planets around it in their proper, traditional sequence.¹⁵ Isaac Newton made a heptagon diagram of the planets in that order, as we will see in Chapter Seven. From that, a star-heptagon will take you into the seven days of the week.

A Sensible Approach

We have here looked at the primary concordances, what one might call the Seven Pillars of Wisdom, from a geometric, heptagonal perspective, to link Earth and Sky, star and stone, psyche and cosmos. Our approach has been *rational*, in the sense of looking at the *ratios* that are involved. Other chapters will outline a more qualitative experience: astral portraits of the metal-planet archetypes. Astrologers, in describing their archetypes, tend to use the old, Greek gods. No doubt these are fine, but an appeal is here made, to seek a more material and experiential basis in the realm of inorganic chemistry. This may seem credulity-straining, but let us see what can be done.

Any answer to the question, 'What is matter made of?' is going to be firmly four-square. The old four-element matter theory came unstuck in the seventeenth century, then reappeared in the twentieth century with the recognition of four states of matter (solid, liquid, gaseous and plasma, the latter being very hot). Then in the 1990s, after a zoo of subatomic particles had appeared, a twelvefold symmetry emerged, with six quarks and six leptons, quite analogous to the twelve zodiac signs, with their three families of four. To quote the *New Scientist*, 'Today, physicists believe that all matter is composed of 12 particles.' It begins to look as if high-energy physics (what used to be called, particle physics) requires a grounding in Pythagorean metaphysics, in terms of the significance of the different number-patterns that are turning up.

We are here concerned with *sensible* things, as can be experienced and perceptible to the senses. In contrast, particle physicists are concerned with the *occult*, with what is hidden, as none of the things they deal with can ever be seen. Their particles get smaller and stranger as the budgets grow larger. A British MP visited Geneva, to see the huge underground ring where the particles are accelerated, and emerged claiming to understand what a 'Higgs-boson' was. This was a particle they had recently discovered, which lasts for a millionth of a second or so. Over years, the international project of building these giant accelerators has greatly failed to produce anything the public can understand (Fermilab in the USA just outside Chicago did at least discover the 'top quark').

We are here contrasting the numbers twelve and seven. Twelfold and fourfold patterns of modern physics concern the very structure of matter; whereas, we saw how sevenfold structures make an earth/sky concordance, in a way that validates the traditional correspondences. These are the seven metals which have been intertwined with the story of humanity. Admittedly, there will be more to say in relation to the outer planets, especially the dire Pluto - plutonium linkup.

The 'Brothers of Iron': Cobalt and nickel, chromium and manganese show a strong affinity with iron, and Hauschka called them the brothers of iron, affirming that they had a Mars-like nature. They have similar properties of resonance and lustre, and iron is hardened by steels having traces of these metals. 95% of manganese production goes towards making steel. Nickel and cobalt both behave like iron when in a magnetic field. The phrase Pelikan used for these metals was, 'we have strong reasons to suspect that the iron-Mars impulse cooperated in their formation.'¹⁶ They are more chemically active than iron,¹⁷ which is why they are more recent.

Praise

Jupiter for Splendour in worldly success
Mars for Bravery in struggling for success
Venus for success in Love
Mercury for the Magic Touch
Saturn for a sense of Destiny
Sun and Moon as alternating
Heavenly Bodies
Parents of our life
On Earth

And Earth
Oh for God's sake
Let's praise
EARTH

The Days of Creation

Creation in the Book of Genesis expressed these very same archetypes in day-of-week order. The modern seven-day week with the astrological archetypes embedded into them appeared in Alexandria around the first and second centuries BC. The original Greek text of the Old Testament, called the *Septuagint*, was also created in Alexandria around that time. This was the city where astrology as we know it was born. This opening chapter of Genesis was surely composed there and then. Traditionally that text has been dated around the 6th century BC but I'm here suggesting it was more recent.¹⁸

Hebrew text pre-dating the Greek Septuagint, of the first chapter of Genesis, does not exist. Genesis Chapter Two has a much older text, where God makes Adam and puts him in a garden – this could well be Sumerian, but at any rate it's an older creation-story. It has a male-singular god (Yahweh) whereas the first chapter's creation-story features the Elohim who are plural and do not have gender: the creator-gods.

We've seen that the sequence of the seven days of the week derives from the sequence of the planets, as they were universally known and understood, from Saturn the outermost to the Moon nearest, and we've looked at their lovely heptagons. That happened in Egypt in Alexandria, by a process outside our present concern. It was to do with the idea of 24 hours in a day as developed in Egypt. The day-of-week sequence that was forever after embodied in the cycling seven-day week, was totally determined by this logic, of the 'hebdomad' as astronomers called it, which is basically the heptagon counting we looked at earlier. I here argue that the Creation of the world in seven days in the Book of Genesis reflects and expresses that sequence.

The first day of the week was regarded as being Sunday. For example, The New Testament has: 'Upon the first day of the week, the disciples came together to break bread' (Acts 20:7). , In modern German, Wednesday is called Mittwoch, 'middle of week,' implying that the week starts on a Sunday.

The first Day of Creation, Sun-Day: *"In the beginning God created heaven and earth. Now the earth was a formless void, there was darkness over the deep, with a divine wind sweeping over the waters. God said, 'Let there be light' and there was light. God saw that light was good, and God divided light from darkness. God called light 'day' and darkness he called 'night'. Evening came and morning came: the first day."*

The first Day is a primary solar image, of the Light appearing, separate from the dark.

There is a wonderful sevenfold affirmation whereby the Elohim keep seeing that each Day is good. This has a lot to do with the forward-moving optimism of

the Western world. The world is not made as a mistake, or by some evil or inferior deity. Note that there is no singular deity in this text, 'Elohim' the creator-gods' as here used are neither singular nor masculine. – the male-singular deity Yahweh only turns up in chapter two of Genesis.

The Second Day is amniotic, with water above and below, quite lunar:

God said, Let there be a vault through the middle of the waters to divide the waters in two'. And so it was. God made the vault, and it divided the waters under the vault from the waters above the vault. God called the vault 'Heaven.

This is the one day which is not seen as 'good.' You know that Monday morning feeling? Also the number two is concerned with duality and stress, as the opposition aspect is stressful.

The Third Day, the Tuesday of Creation, is the Mars-day. How might one expect Mars-energies to work in a creation-process? It cannot be fire, for that is destructive; nor war, nor the Smith's forge.

God said, Let the waters under heaven come together into a single mass, and let dry land appear.' and so it was. God called the dry land Earth and the mass of waters 'seas', and God saw that it was good. God said, Let the earth produce vegetation: seed-bearing plants, and fruit trees on Earth, bearing fruit with seed inside, each corresponding to its own species.' and so it was. The earth produced vegetation: the various kinds of seed-bearing plants and the fruit trees with seed inside, each corresponding to its own species. God saw that it was good.

So that which is dry appears, then Earth is inseminated with seed. The Mars-process here is that process of insemination, of the Earth with seeds. The third Day has the Elohim *twice* seeing that it was good, reminding us of the harmony of a trine aspect. This Day gets a double blessing! Our space-time world first begins to appear on this 3rd Day.

Next, Mercury's Day, has the *signs placed in the firmament, in order that the festivals can take place here on Earth at their proper times. That interlinking between Earth and sky is the Mercury-process:*

God said, 'Let there be lights in the vault of heaven to divide the day from night, and let them indicate festivals, days and years. Let there be lights in the vault of heaven to shine on the Earth' And so it was. God made the two great lights: the greater light to govern the day, the smaller light to govern the night, with the stars. God send them in the vault of heaven to shine on the Earth, to govern the day and the night and to divide light from the darkness. God saw that it was good.

Theologians and scientists can discuss *ad nauseam* how come plants appeared

on land *the day before* the stars appear in the sky, but they are never going to get anywhere until they (gasp) ask the astrologer, and she will explain the archetypal realities here alluded to: whereby the Mars-day had to come before the Mercury-day. The Mars-process of fertilising the Earth came first, then came the Hermes-Mercury process linking Heaven and Earth, with signs and lights in the heavens to help seasons and festivals to take place.

The Thursday of Creation is expansive and optimistic, when the deep comes to teem with all manner of life, and all is held in balance:

God said, 'Let the waters be alive with a swarm of living creatures, and let birds wing their way above the earth across the vault of heaven.' And so it was. God created great sea-monsters and all the creatures that glide and teem in the waters in their own species, and winged birds in their own species. God saw that it was good. God blessed them, saying 'be fruitful, multiply, and fill the waters of the seas.

There is a grand optimism in the way the birds wing their way across the vault of heaven while huge monsters teem in the deep, and in the divine command to 'be fruitful and multiply'.

Friday, Venus' day, has the man and woman created, 'in the image' of the Elohim:

God said, Let us make man in our own image, in the likeness of ourselves, and let them be masters of the fish of the sea, the birds of heaven, the cattle, all the wild animals and all the creatures that creep along the ground. God created man in the image of himself, in the image of god he created them, male and female he created them. God blessed them, saying to them, be fruitful and multiply, fill the earth ... God saw all that he had made, and indeed it was very good.

This day is 'very good', reminding us of the 'Thank God it's Friday!' feeling. The third and sixth Days get extra blessings: the numbers of harmony, the trine and sextile aspects are stress-free. Also on the 6th day, *to you I give all the seed-bearing plants everywhere on the surface of the earth, and all the trees with seed - bearing fruit, this will be your food*" Both the Mars and Venus Days of Creation are concerned with seeds and fertility.

The Saturnine seventh Day is connected with Time and Memory, when the Elohim look back at the earlier steps of Creation:

And on the seventh day God ended his work which he had made; and he rested on the seventh day from all the work which he had made. And god blessed the seventh day, and sanctified it.

This sequence has the *same seven archetypes* as are expressed in the days of the week.

A song by the *Incredible String Band* called 'Creation' echoes this sequence in a remarkable manner, and also links up to our metallic theme (enjoy listening to it on Youtube):

**The first day was golden
And she coloured the sun
And she named it Hyperion
And she made it a day of light and healing**



**The second was silver
And she coloured the moon
And she named it Phoebe
And she made a day of enchantment and
the living waters**



**And the third was many-coloured
And she coloured the earth
And she made a day of joy
With the scarlet strength of seed.**



**In the fourth black and white were mingled
into quicksilver
And she coloured Mercury
And she made a day of wisdom
And the signs that are placed in the
firmament**



**The fifth was bright blue
And she envisaged Jupiter
And she made a day of awe and circles,
circles
And she sent it to guide the blood of the universe**



The sixth was burning with icy, green flames that

glowed white
 And of her beauty she made Venus
 And she made a day of love
 Whereby all beings are united



The seventh was rich purple of the mollusks
 And she coloured Chronos
 And she made a day of idleness and repose
 Whereon all beings cease from struggle.



Creation, The Incredible String Band, 1969

I met Robin Williamson who wrote this song, while he was teaching a bardic singing course at Emerson College (where I once studied) in the 1990s. I questioned him about it. He struggled to recall it ('Hyperion...'), but in vain. It was like some other vanished lifetime of his, it had gone...

References

- 1 Proverbs, 9:1.
2. Rudolf Hauschka, *The Nature of Substance*, 1966.
3. Wilhelm Pelikan, *The Secrets of Metals*, 1973.
4. Walter Cloos, *The Living Earth*, 1977, p.123.
5. Kaye and Laby, *Physical and Chemical Constants*, 14th ed.
6. NK, 'Interface, *Astronomical Essays for Astrologers*', 1997, Ascella, p.83.
7. Frank McGillian, *The Opening Eye*, 1982, p.94. The standard electrode potentials are given to the most common valence condition.
8. These same values were used both in McGillian 1982 and Geoffrey Dean 1977 in this context, only I've here scaled them up to silver = 100.
- 9 Hauschka, (2), p.162.
10. NK, *Astrochemistry* (1984) p.3.
11. McGillian, (7), p. 94. Table 5: Sequence of atomic number
 (for the star-heptagon)
12. C.Leadbetter, *A Complete System of Astronomy*, 1742

Classical Metals	Atomic Number
Iron	26
Copper	29
Silver	47
Tin	50
Gold	79
Mercury	80

13. Sephaniel, *Cosmic Symbolism*, 1912

Lead	82
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(quoted by Dennis Elwell, *The Loom of Creation*, as the earliest source he could find) – see Table.

14. Dennis Elwell, *Astrol. Assoc. Jnl*, review of 'Astrochemistry', Winter 1984/5 p.54.

15. This heptagon-linkup sequence was given by John Martineau, in his *Little Book of Coincidence*: at www.woodenbooks.com you can select this and have a read.

16. Pelikan (3) p.156.

17. Their divalent electrode potentials are, manganese +1.2, cobalt +0.28, and nickel +0.25.

The Table compares some of their physical properties of interest:

Table 4: The 'Brothers of Iron'

Metal	Atomic No.	Sp. Gravity	Melting-point
Chromium	24	7.2	1900° C
Manganese	25	7.4	1200° C
Iron	26	7.9	1528° C
Cobalt	27	8.5	1524° C
Nickel	28	7.7	1500° C

18. N.K., *The Days of Creation*, ISAR journal, USA, 2013 (online at 'astrozero' site).

Chapter 2

Traditional Linkages ☉, ☽, ☿

The Ladder of Perfection

We have looked at some sevenfold sequences, which interlink metals, planets and days of the week, rather mystically. Next we come to what alchemists reckoned was their *scale of perfection*, from the base metals right up to the most perfect metal, gold.

- 1.50	Gold	☉
- 0.80	Silver	☽
- 0.79	Mercury	☿
- 0.3	Copper	♀
+ 0.04	Iron	♂
+ 0.14	Tin	♃
+ 0.13	Lead	♄

The glyphs are on the right, and let's be aware that these were applied to the seven metals for at least as long as they were to the planets, if not longer (Chapter 8). To the left are electrode potential values, which indicate how chemically reactive they are, how readily they will dissolve in a dilute acid. The more noble or *perfect* a metal was for the alchemist, the less *reactive* it is for the chemist.¹

Alchemists believed they could help metals to 'mature' and that meant moving up this scale of perfection. Mother Nature did this underground, or so they believed, she was continually making gold and silver, but slowly and over long periods of time. The alchemist would just speed this up a bit.

Venus

Which of these do you like wearing? I quite like copper, but I prefer silver. If your kid likes wearing iron décor you are probably in trouble, he or she may be quite disturbed and/or disturbing, and may get into street fights. In Britain, places of worship have the base metals iron and lead on their outside, and are in consequence quite depressing. I remember visiting the city of Sophia in Bulgaria, where the churches – of Eastern Orthodox faith – had lots of gold and copper on their outside. It made a happy mood in the city.

The Bible gives us six of the seven metals, in the correct order. The Book of Numbers, Ch. 31:

22 Only the gold, and the silver, the brass, the iron, the tin, and the lead,

23 Every thing that may abide the fire, ye shall make it go through the fire, and it shall be clean: nevertheless it shall be purified with the water of separation: and all that abideth not the fire ye shall make go through the water.

24 And ye shall wash your clothes on the seventh day, and ye shall be clean, and afterward ye shall come into the camp.

I would rather doubt whether that text can be any earlier than the 1st century BCE: to have the seven days of the week plus that metallic sequence. Some may believe that this was written in 1400 BC by Moses, or in the 6th century BCE or whatever and one appreciates people want to believe these Hebrew texts are enormously old. Early alchemical beliefs developed in Alexandria, as did the seven-day week, which is where the original Greek texts of the Old Testament appeared in the first and second centuries BCE. The earliest dateable day-of-week was in 30 BCE, in Alexandria, since when the seven days of the week have been cycling without a break.



The ‘Seven steps to heaven’ derived originally from the Mithraic religion which we look at in Chapter Eight, in the above order. The metallic *scale of perfection* pertained originally to a ladder or *stairway to heaven*. Here is a fine diagram but alas its steps are in the wrong order! Still, at least it has gold at the top and lead at the bottom.

Gold and the Sun

There's a lady who's sure
All that glitters is gold
And she's buying a stairway to heaven

Led Zeppelin

Traditionally the noblest of the metals, gold expresses the splendor and radiance of the Sun. As the only metal which never tarnishes, it will resist the fiercest fire. Its sun-like nature is evident, for it needs to glitter in the sun to express itself, and has a unique relation to light and color. The metal can be beaten out so thinly that it has hardly any solidity left, when it appears as gold by reflected light but green by transmitted light. Colloidal gold solutions, in dilutions of parts per 100 million, produce a wide variety of colors. From metallic gold one can obtain, so to speak, any color under the sun: 'In gold we see the brilliance of the sun, but other rich colors are also seen in its colloidal solutions, ranging from greenish-blue, through reddish, violet-blue to pure rose - from the gold of a noonday sun to the radiant colours of sunset.'²² The sun manifests the colour of gold at sunrise and at sunset. The latin word for gold, aurum (thus, the chemical symbol Au), derives from the Greek word Aurora - the golden goddess of the dawn. Rudolf Steiner gave 'AU' as the Sun-sound, so try intoning it. The word 'aura' comes from the same root, indicating the idea of radiance as associated with this metal.

Figure: the glow of golden glass. About ten parts per million of gold gives this hue.

Like sunlight through air, so is gold diffused through Earth's crust: 'Gold is a remarkable substance. A description of its physical properties can leave one in awe, even disbelief. Gold is present everywhere on the Earth - in the seas, in the highest strata of the atmosphere and in the earth itself on every continent. It exists as the finest dust and dense nuggets. There are however no veins of gold as there are of other metals. Gold is to be found finely distributed, combined with silver, mercury, copper and antimony.'²³

The gold mines in South Africa descend thousands of metres, to mine gold present in maybe less than one part per hundred thousand of the ore - only to be reburied in bank vaults! The largest deposits of gold are found in Africa. In this continent, whose geography shows so many different sun-influences, and whose music expresses so powerfully the throbbing pulse of the heart, the greatest amounts of the sun-metal have condensed.



Venus

Gold prices tend to rise in times of turbulence and uncertainty. The price of gold has a seasonal trend (Appendix 2), peaking just after midwinter. When sunlight is weakest, people show a greater desire for gold, the sun-metal.

Gold is a metal on a journey, shown by its number given in 'carats,' which goes up to twenty-four, for absolute purity. A gold ring may be 18 carats, and thinly-beaten gold which needs to be soft could be twenty-two carats. The carat-number indicates how long the gold has been in the furnace, how intensely purified it has been to free it from baser metals. The Sun moves across the sky every twenty-four hours, and around the year in twelve months, so this solar number defines the quality of gold. The weight of gold is measured in Troy, with one Troy ounce of gold equivalent to 480 (24 x 20) grains of wheat. The golden grains of wheat, sun-ripened, are fixed in an equivalence to the solar metal, indicating a healthy basis for currency and wealth.⁴

Most of us never get to experience the weight of gold, it is far denser than lead or mercury. The character 'Auric Goldfinger' in the James Bond movie declares that gold is attractive due to 'its brilliance, its colour, its divine heaviness.'

The well-being of a culture should be measured by the proportion of gold which it keeps above-ground, to glitter in the sunlight and adorn the beauty of womankind, its sacred temples and places of magnificence - as compared with that buried in vaults and hidden away underground. The former indicates a commitment to communal happiness, and in fact solar glory, while the latter embodies private greed, lust for lucre, and hidden control.

Until very recent times gold was used as a heart remedy, this being the organ associated with the sun. Homeopathic doctors still use it in this manner in high dilutions and regard it as a remedy for depressive or suicidal conditions: a 'total eclipse of the heart'. Its distribution within the human organism reaches its highest concentration in the region of the heart. Gold is used by doctors to diagnose heart problems. As the highest concentrations of gold in the human body occur around the heart, a radio-isotope of gold has been developed (the Au-195 isotope), which can give an image of the blood-containing structures within the heart, a process called 'heart-imaging'. Gold gives a heart image! In Britain this technology has been developed in St. Bartholomew's hospital, London. One expert described the gold used in this way as 'a very convenient medium for rapid assessment of changes in cardiac function.'^{5,6}

Economically, gold functions as a kind of heart-centre which maintains and guarantees a circulation of paper money. The pulse of the economy is taken by noting the value of gold. In ingots of great density it is stored underground, far from the sunlight; where it acts as it has done throughout history, in a somewhat magical manner, as that which is most to be desired - again, a heart quality held by no other element. After all, would you want a wedding-ring of platinum?

Astronomers are discerning how the Sun functions as the heart-centre of our solar system (though they don't see it in these terms). It has a heart-beat over its twenty-two year cycle and thereby circulates material around the solar system. It's the fiery heart-centre of the macrocosm, and gold is the Sun-metal. Feel the

fiercely burning solar corona around, your heart of fire. Gold works as a heart-medicine.

Cows have the highest concentration of gold in their horns. The horns are the one part of a cow that points upwards, which give to the cow its dignity. Gold has no biochemical purpose, because it is chemically inert. But, let's go a little deeper and envisage the Egyptian image of the Sun between two horns of a cow. I have a dream, of a laboratory, where the apparatus is simple enough to bring delight to a child. It would have two Perspex models, of a human being and a cow, showing their varying gold-concentration: reaching its highest level around the heart for man, and in the horns for a cow.

The Sun's position in a birth-horoscope is said to express one's true being. To get a focus on this, you might want to consider why people spend - or rather used to spend - more to have a pen with a gold nib. This isn't just because it lasts longer than a steel-nib, but because of something not easy to express, that handwriting with a gold-nib pen better expresses one's 'personality' or inner being than does a steel-nib pen.

Medicinal Colloidal gold is becoming more widely used as a medicine - a very traditional alchemical concept. It is claimed to work in a quite subtle way as a heart-remedy. Some find that their will-power is enhanced upon taking it, in terms of being able to focus on what one wants to achieve. Especially in America there has been a tradition that colloidal gold is given for 'dypsomania' or craving for alcohol. Drug-addicts are said to experience a loss of appetite for their drugs after taking the solution for a few days. Here is a web-testimony: "I have found great benefit personally in the emotional area. My wife will tell you I am a much easier person to live with ... My brother who is four years older was in such a bad state the doctors had him on Zoloft, the antidepressant that is like Prozac. He started on colloidal gold almost two years ago and is living a happy life now with no known side-effects." It is said that the body's warmth-mechanism may be positively affected by gold, particularly in cases of hot flushes, chills and night-sweats.

One would like to hear more discussion of these effects, as may deepen our insight into how traditional heart-qualities are associated with gold, the radiant Sun-metal. Colloidal gold solutions here show the different hues, and gold foil less than a micron thick is here shown glowing green by transmitted light. This is what you should have been shown in your school chemistry lesson.

Silver and the Moon

'Celestial Diane, goddess argentine
Shakespeare, Cymbeline

Venus

The pure silvery Moon was associated with the chaste Moon goddesses, Artemis, 'the Huntress with the Silver Bow', and Diana, whose images were cast from silver. The silversmiths of Ephesus who made such images are referred to in the New Testament.

Today, in the delicate chemistry of silver we may trace its Moon-nature. It is a metal which requires darkness for its reactions. A photographer needs darkness in his studio to work with this metal. Special bottles and pipettes made of dark glass are used for solutions of silver, and its salts are quickly spoiled by exposure to the light of day.

Silver and gold are the two metals which show an intimate connection with light in their chemistry, although in opposite ways. The Sun produces the different colours of day, whereas the Moon shining only by reflected light gives the black, white and grey tones of a moonlit scene. Gold itself produces the different colours, one feels its outgoing radiance, whereas silver receives light images passively, it is precipitated from solution by light. The silver images of photography are only in black white and grey, and for colour film salts other than silver must be used.

Astrologers associate the Moon with the faculty of imagination, of fantasy, as for example in imaginative writers or dreamy poets. The same property is seen in the way silver is able to create images. In photography it creates a memory-image of the past, in mirrors it gives an image of what is in present time before it. Today, most mirrors are made by coating glass with silver. When looking at a mirror we never feel we are looking at a sheet of silver. There is a certain receptiveness and passivity here, and similarly when looking at a photograph it never occurs to us that we are really looking at the differential precipitation of colloidal silver. We are not aware at all of the metal but only of the image it provides.

Silver is used by the cinema industry to form its 'images of the silver screen'. Silver has always been the staple metal used for making films, in colour as well as in black and white, and the film industry is a major drain on the world's silver reserves.

From an astrological viewpoint, one can say that the dreams and fantasies which the cinema manufactures are somewhat lunar in nature, because the Moon is associated with dreams and the imagination. By its delicate and receptive Moon nature, the metal silver, in celluloid, will faithfully record light images.

The metal chromatography techniques developed by Kolisko are another example of the image-forming powers of silver. Here the varying images built up by the precipitation of colloidal silver are produced not by light but by the changing conditions of the cosmos itself. Properly used, this technique is an empirical method of investigating the correspondences here described. Silver's Moon-quality of receptiveness here manifests remarkably.



Figure: Electrolytically refined silver (Wiki)

A nice point was made by the reviewer of Agnes Fyfe's work *Die Signatur der Venus im Pflanzenreich* (The signature of Venus in the plant-realm).⁸ This follows on from Fyfe's previous work, *The Signature of Mercury in the Plant-Realm*. The reviewer pointed out that Kolisko's work used 'above the Sun' metals, iron, tin, and lead, whereas Fyfe's work with plant sap uses the 'below the Sun' metals, copper and mercury. So all seven of the metals have now been used for recording chromatographically cosmic events of their associated planets. In both cases silver is normally used for manifesting the images, although in the latter case gold can be used if primarily colour rather than form is desired.

In the two images below, prepared by Guy Desbiolles in Switzerland, the receptive Moon-metal silver is giving expression to the 'formative forces' in plant sap. Sap from a stinging-nettle is extracted in a pestle and mortar, and diluted with water. Then it is risen up a filterpaper, and it dries. Then the next day 1% silver nitrate is risen up through this dried plant sap. That is the basic method, developed by Kolisko. The top image was done at a Full Moon, the next at new Moon. I will certainly endorse the basic idea which Guy Desbiolles is here showing, of a different quality-of-being at Full moon compared to New, in the plant realm: yes!



Figure: ‘Steigbild’ filterpaper pictures using plant sap and silver nitrate

Any alchemist could tell you that.

Let us here quote what Kolisko wrote about the metal silver:

...silver is a metal which has in itself a hidden power of formative force which we do not find in any of the other metals in the same strength.⁹

Appendix 3 discusses the experiments designed by Kolisko, whereby celestial events could be recorded on filterpaper.

Silver is a mirror-creating element: a solution of silver in a test-tube readily precipitates a mirror onto the glass, this being the school chemistry test for silver in solution. As a metal it has the highest electrical and thermal conductivity of them all, as well as being the best reflector of visible light known.

Most of the world's silver occurs dissolved in the oceans, reminding us of the Moon's connection with water-processes. Silver iodide is used to make rain, by sprinkling it as a fine dust onto rainclouds, which leads to condensation. Shakespeare called the Moon 'Pale governess of floods', and rainfall as well as the tides has been shown to vary with the lunar cycle.

In the 1950s, ionic silver began to be used as a bactericide for water purifying systems, in the form of a precipitate on carbon granules. A U.S. Navy study, using ships passing through contaminated waters, found that a silver concentration of ten parts per billion made the water safe for drinking (homeopathically, a D8 concentration), and this method is nowadays used by shipping companies. Good domestic water-purifying systems nowadays contain, as well as an ion-exchange system, a silver tube which acts as a bactericide.

It has long been known that water carried in silver flagons stays fresh. Settlers moving across the American West would purify a container of water by leaving a silver dollar in it overnight. At the John Hopkins University of Maryland, researchers kept a community swimming pool clean just with a carbon-silver purifier. A report concluded, 'During the time the silver-carbon filter was in operation, there were no cases of ear infections or eye irritations. Bathers and, in particular, swim teams enjoyed the clean, crystal clear silver-treated water without the usual disinfectants that sting, irritate the eyes, bleach swimsuits and affect hair colour'.¹⁰ Here we see silver's bactericide action, its action as the Moon-metal upon water, maintaining its quality. But, silver's Moon-quality of purity can be appreciated in other ways, as in the special sound of silver bells.

From such considerations we see how the following adjectives apply to silver:

Reflective, image-forming (imaginative), receptive, impressionable, sensitive, pure

Are these lunar traits? I think they are. Compare them with a list of traits which the Gauquelins obtained in their attempt to define a 'lunar personality':

*Doux, impressionable, nonchalant, parle bien, reveur, sensible, spirituel, subtil, sportif (pas)*¹¹

-a modal personality which they found most pronounced in imaginative writers, poets and dramatists.

Modern Uses Nowadays, the main growth in silver markets comes from its use in jewellery and ornament - mainly in India. The 1990s have seen tremendous growth in this Indian market, much in the form of heavy-weight investment jewellery - bangles, ankle-rings and necklaces. Virtually every Hindu woman wears an ankle chain, which is nearly always silver. How appropriate that the Moon-metal should be used in these feminine and decorative contexts. Many domestic and decorative utensils, often given at the time of marriage, are silver, as likewise are those used in devotional ceremonies. Muslims use much less silver because of strictures imposed by the Koran, which seems odd considering the lunar symbolism inherent in Islam.

Venus

Photography is the main use for silver, despite competition from digital cameras. The firm Britannia Refined Metals in Kent extracts around 500 tonnes of silver from crude lead per annum, using lead shipped over from Australia. It refines the silver to 99.9% purity and then sells it to London bullion markets. I once visited the London Metal Exchange, and watched how the trading of silver was shown by a crescent-Moon glyph! The LME is the world's largest centre of trading for non-ferrous metals. Metal-dealers have always used the traditional alchemical glyphs.

Healing Power The healing properties of silver appear as rather maternal and protective as befits its lunar essence. Colloidal silver is regarded as safe to use during pregnancy and lactation. Here's a website-testimony of a cure, by 'Jeana' who was ill and sore with mastitis - "I was very, very ill and the antibiotics were not helping at all," and then her father suggested she try some colloidal silver. "Being a sceptic, I drank the glass of silver very slowly, trying to taste any strange aftertaste etc. ... By the next morning, my mastitis was completely gone. My breast was no longer red or swollen. My baby had not been nursing well at all during this bout of mastitis; I had to use hot compression to get even one drop of milk from my right breast. But by the next morning my milk was free flowing, and I felt great." Phew, if that isn't lunar symbolism tell me what is!

Silver has a dynamic way of healing injured and damaged tissue. This was pioneered by Dr Robert Becker in *The Body Electric* of 1973. He found that by using silver electrodes he could stimulate bone-forming cells and stimulate healing of the skin and soft tissue, as described in a recent review by Mr Best: "Partly as a result of Becker's work silver has been used in bone healing for many years now and is incorporated into bandages to speed up healing ... a recent US study reported that silver catheters can prevent urinary tract infections much better than uncoated ones."¹²

There is a resurgence of interest in colloidal silver for combatting colds and viruses, and it could well be that there is no more useful bottle to have available in the family medicine cupboard. To quote Best again, "Ongoing research may eventually restore silver to its once-accepted status as probably the most versatile and effective natural agent against bacteria, fungi and, recently, viruses available - with the hugely important bonus that the latter finds it almost impossible to develop any resistance to it." Also, colloidal silver is being used in skincare creams for its antiseptic properties, being effective on oily skin which is prone to spots and itches. "Colloidal silver is Nature's antibiotic and has an antimicrobial effect," a herbalist at the London *Fernacia* clinic remarked, adding that it purified the skin.

Doctors are likely to continue opposing these gentle, healing powers of silver, because their theories can't account for it. As Luna (the Moon) tends to elude the categories of rational explanation, remaining enigmatic in a manner that baffles astronomers, so her shining metal silver may do likewise.

Quicksilver and Mercury

'A mind like quicksilver'-how well this image applies to mental processes! It is hardly surprising that astrologers should associate the planet Mercury with mental agility: the shining globules of this liquid metal form and reform so quickly, as fast as thinking. The metal mercury is the one element that one normally sees in the three states of matter - as the fluorescent lamp overhead in the classroom, as the liquid in the thermometer and as calamine the skin lotion; as Hermes was the one deity who could come and go through the three worlds.

Alas, the nimble quicksilver intelligence can end up as the 'mad hatter,' whose mind is a-jumping all over the place - remembered in Alice's immortal tea-party. This was a condition to which hatters were prone in Victorian times, due to using mercury metal to give a shine to top hats.

As Hermes was the messenger of the gods, so mercurial types make good link people. Likewise the metal mercury amalgamates: different metals can be brought together by dissolving them in mercury, it is a solvent for metals. The term 'amalgamate' is also used in commerce: different firms amalgamate together. This is a mercury-process, and Hermes was traditionally the god of commerce.

The most characteristic chemical trait of mercury is association. It links itself up in the most unexpected ways. 'The tendency to form complex compounds is very marked in the case of mercury.'¹³ It combines with nitrogen and carbon compounds which metals normally won't touch, as well as forming the usual metal salts, and forms complicated 'organometallic' mercury compounds, which catalyse the synthesis of a range of pharmaceutical and other organic, man-made products. It forms explosives (e.g. mercury iodide) which detonate at a mere touch. In amalgamating other metals together, it performs this interlinking function.



Figure: The red ore cinnabar, mercury sulphide (Source: Wiki)

Venus

The Indian word for alchemy was 'Rassayana' which means 'the way of mercury.' The earliest alchemical texts in the West date from the first century AD, and this is also when the first texts for obtaining mercury from its ore cinnabar appear. Pliny the Roman naturalist gave such a recipe. Heating of the red ore cinnabar causes it to sweat globules of the shining metal; then, careful heating the mercury again yield a red ore (although this is the oxide, no longer the sulphide). This was the classic recipe whereby alchemists impressed their clients, and was the first inkling of a chemical reaction. Mercury's changeable nature seemed to manifest mysteries of matter. Hermes in his Egyptian form as 'thrice-greatest' was the patron of alchemy, in which mercury had the central role. Alchemists who reckoned they could make gold would usually start off with mercury (which is, as chance would have it, next to gold in the Periodic table)

The orbit of this fastest-moving of planets was an enigma for a century. The plane of Mercury's orbit kept 'precessing' or shifting about in a way that defied explanation, and Newton's theory could not account for it. Mercury resisted this materialistic world conception, and it was only explained in the 20th century by the Theory of Relativity. Likewise, the metal mercury resists the solid state. It is the secret, the mystery of quicksilver, that a metal of such enormous density can yet remain liquid. It is not difficult to see why the alchemists credited mercury with a very special inner mobility and vitality.

The commonest daily use for mercury sees it in constant motion - the thermometer. Hermes was traditionally the god of medicine, and Mercury was for long given an important role in medical practice. It was for centuries the staple remedy for syphilis, and even today it is still used for skin ointments-calomel-and the sublimate is used as a disinfectant. Mercury amalgams are used in dentistry, and mercurial aids such as the thermometer and blood pressure apparatus aid the doctor. Thus the different aspects of the Mercury-nature are expressed both by the metal and by the planet in the sky, in accordance with the Hermetic maxim, 'as above, so below.'

Mercury is always on the move, and nowadays it is coming out from circulation: from batteries, from tooth fillings, from gold amalgamation processes, etc, so that Euro- experts have a problem what to do with it. Thousands of tons of it might be placed carefully down one or two of the mines whence it was obtained! As Mercury is removed from large-scale use, we may be sure that other subtle properties of this mysterious and elusive element will turn up in due course.

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