

The Greek philosopher Epicurus was born in Samos in 341 BC and was an extraordinarily wise man. My three favourite quotations from his teachings are: 1. *The world is a series of fortuitous combinations of atoms.* 2. *The greatest good was pleasure attained by tranquillity and detachment.* 3. *It is not so much our friends' help that helps us as the confident knowledge that they will help us.*

His teachings covered three areas: *Physics, Psychology and Ethics.* As I am writing about human bodies (that are made up of atoms) it is appropriate to quote what the *Britannica* has to say about Epicurus's *Atom Theory of the Universe* as recorded by Lucretius in his book *De Rerum Natura* over 2,000 years ago. I will also quote what he said about *The Gods* and *Life Hereafter* because I echo these sentiments entirely and find them very reassuring.

*Physics:* Epicurus states, nothing is created out of nothing and nothing passes into nothing. The universe was always such, since there is nothing beyond the universe the entrance of which could effect a change. The universe consists of bodies and space (the void). The existence of bodies is testified by sense and the existence of space is a necessary inference of reason; for, if the void did not exist, bodies could not move as, in fact, sense assures us that they do move. Besides the two, bodies and space, nothing can ever be imagined. Again, bodies are either compound or the elements of which they are compounded. The elements are indivisible; for, when a compound is resolved into its elements, the elements must either pass into nothingness – which we held to be impossible – or remain as ultimate indissoluble entities.

Again the universe is infinite; for the finite has an extremity, which can only be observed against something else, which is impossible in the case of the universe. Having, then, no extremity, it has no limit. Also the number of atoms and the extent of the void are infinite; for if there was a limited number of atoms in unlimited void, atoms could not remain anywhere but would drift, scattered through infinite void, not having atoms to support and place them by their collisions. If, on the other hand, the void were limited and the atoms unlimited, there would not be room for them.

The atoms are not all of one shape. The number of atoms of any one shape is absolutely infinite but the number of different shapes, though incomprehensibly large, is not absolutely infinite. The atoms vary in size but are not of all sizes: otherwise some would be visible. Whatever their size they are in perpetual motion, moving all with the same velocity, swift as thought. The atoms collide and rebound to a lesser or greater distance, thus forming compound bodies of greater or lesser density.

*The Gods:* Since Epicurus believed that happiness lies in the quiet of the mind, he is concerned to remove the two great disturbing ideas in human life, the fear of the gods and the fear of death. He does not deny the existence of gods, but states that, *They are neither troubling nor troubled by the affairs of humanity, neither rewarding virtue nor punishing sin in this life.* He goes on to state that there is no life to come, since the soul is of such a nature that, when it leaves the body, it is immediately dissolved into primordial atoms of which it was a compound.

*So death, the most terrible of ills, is nothing to us, since so long as we exist, death is not with us; but when death comes, then we do not exist. It does not then concern either the living or the dead, since in the former it is not, and the latter are no more. \**

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\*JR italics.

In a recent book by Kauffman entitled *At Home in the Universe*, the author proposes a *Theory of Emergence*. His theory explains the *order of chemical growth*, or how *organic life* on Earth evolved from chemicals that can replicate themselves. In 600 BC Confucius taught his 'five tenets', the first and most important of which is, *The Universe is regulated by Order*.

Ten years ago I had a very interesting association with Bob Williams, a professor of Chemistry at Oxford. We met at an exhibition of my Symbolic Sculpture at Wadham College. Bob asked me if we could develop some ideas together for the sculpture *Chain of Life* that now hangs in Harvard's New Science Building. The sculpture is made up of two carbon atoms, a nitrogen atom, an oxygen atom and seven hydrogen atoms. Bob told me that all life forms could be made from this 'orderly' atomic combination.



### *Chain of Life*

*Ramiilaj Aspen*

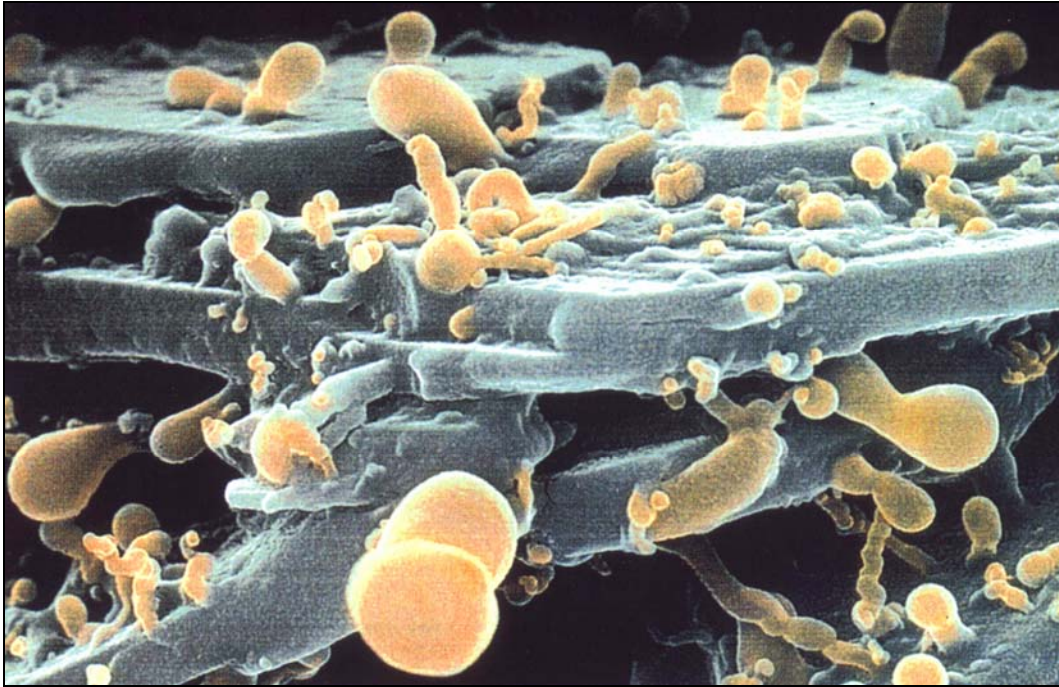
I was intrigued by the fact that the angles at which the atoms joined in *Chain of Life* had to be precise as they were dictated by the magnetic fields of each of the atoms. What an example of *order*! It made me wonder if the magnetic field in this combination of atoms could be called a 'vital force'. If the molecule is self-replicating, can it be classified as being *alive*?

Darwin wrote to Alpheus Hyatt in 1872: *After long reflection I cannot avoid the conviction that no innate tendency to progressive development exists*. This is true, but could there possibly also be *an innate tendency for atoms to combine* as in Bob's *Chain of Life*? (It is also obvious that one of us is well out of his depth!)

Returning to Bob's carbon, nitrogen, oxygen, and hydrogen cocktail that make up the *Chain of Life*, I was intrigued to read about the recent discovery of

*Nanobes* off the coast of Australia. These miniscule creatures, a soup of Bob's *carbon, nitrogen, oxygen and hydrogen atoms*, are the smallest of the small, live three miles beneath the Earth's surface, in temperatures of 338 degrees Fahrenheit!

Living in solid rock means they have to be unbelievably tiny. Nanobes measure from 20 to 150 nanometres in length. A nanometre is one billionth of a metre. Human hair varies from 50,000 to 100,000 nanometres in width, DNA is six nanometres and a cell wall is five to seven nanometres thick, so these creatures can only just exist! Nanobes contain DNA and distinct cell membranes, grow spontaneously and are packed with Bob's cocktail of atoms. To me they look uncommonly as though they should be related to *Slime Mould*!



### *Nanobes*

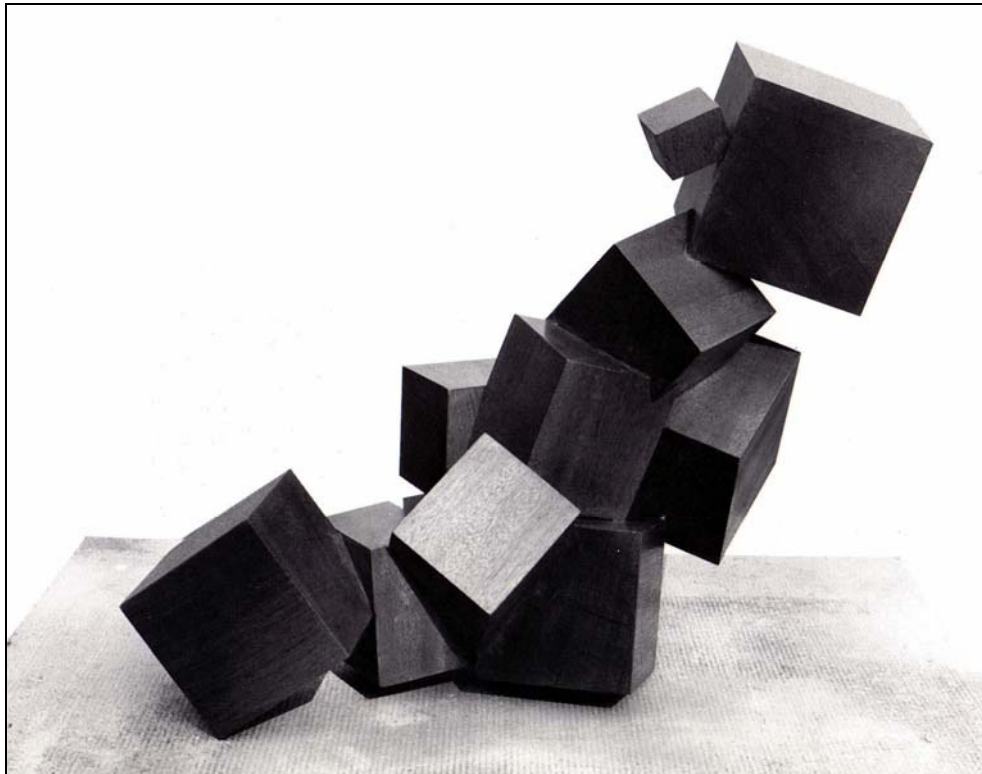
Bob also introduced me to *Beta sheet* that can be rolled into a *Beta barrel*, which although not a tube, is getting very close to being one. That seems to me to be very important, as basically, we are a mass of tubes packed into one giant tube! Our skin is the biggest organ of the body and whichever way you like to look at a body, you have to think *tubes*!

All this makes me believe that, *yes*, there is a tendency for atoms to combine into molecules that replicate and that all structure and pattern is *ordered*, both inorganic and organic, just as Confucius stated 2,600 years ago!

On one of our trips to Italy we had to pass through Germany for an exhibition of my Figurative Sculpture held near Dusseldorf. We stopped the night in Frankfurt and found in a gem shop a cluster of *lead pyrite crystals*. I showed it to Bob and asked him if it could be described as a *Replicator*. He thought a bit and then agreed that it could be. He liked the crystal so much he asked if he could keep it to show in the chemistry laboratory. Fortunately I had made a wooden copy of it before lending it to him because the original now sits on the mantelpiece of Sir Christopher Wren's study in Wadham College! For me, the



lead pyrite crystals *were as alive as a Slime Mould slug*, a nanobe or a silk worm, although in a frozen fossilised form. The crystals are a caterpillar!



*Replicator*

My mathematician friend Ronnie tells me that *Everything is Patterns and Structures*. It is certainly true of the Magic Squares compiled of the numbers 1 to 36.

28	4	3	31	35	10	28					10
36	18	21	24	11	1		18	21	24	11	
7	23	12	17	22	30		23	12	17	22	
8	13	26	19	16	29		13	26	19	16	
5	20	15	14	25	32		20	15	14	25	
27	33	34	6	2	9	27					9

*A Magic Square*

In the square on the left the shaded lines add up to 111, vertically, horizontally and diagonally. If you block out the areas above, as done in the right-hand square, all the numbers inside the white square add up to 74 and the corner squares do as well!

Recently the Royal Institution in Albemarle Street, famous as the home of Michael Faraday, inventor of the electrical dynamo, has been borrowing maquettes of my Symbolic Sculptures to show at their Friday evening lectures. They kindly ask me to attend these functions, although I have to admit that the lectures are always way over my head. (Their Christmas lectures for children are great, but I find talks on *String Theory* a bit much.) However, one of the lectures was on the *Magic of Mathematics* and I did then hear about a fascinating sum that is worth including here, as I hope my grandchildren will try it for fun!

First write down the number 1089 and then subtract from it *any number* between 300 and 900. Reverse the answer and subtract whichever is the lesser from the greater. If you reverse it again and then add together the two numbers and you will find the answer is always 1089, that is if you have done the sums correctly! For instance:

$$\begin{aligned}
 1089 - 357 &= 732 - 237 = 495 + 594 = 1089 && \text{or} \\
 &\leftrightarrow \text{reverse} \leftrightarrow \\
 1089 - 843 &= 246, 642 - 246 = 396 + 693 = 1089 \\
 &\leftrightarrow \leftrightarrow \text{reverse} \leftrightarrow
 \end{aligned}$$

Of course this isn't magic mathematics, it is indisputable mathematics! To me the real Magic is the enquiring mind of the mathematician that first recognised the mystery of 1089. It is only a Modern Human who had the imagination to use his unique capabilities to discover such an apparent oddity. It is Modern Man who is Magical.

*Numbers are the first principles, indeed the very elements of the things of nature.* Pythagoras said that 2,500 years ago! Archimedes, 200 years later, worked out how to calculate the volume of a sphere and discovered the value of **pi** [  $\pi$  ] as 3.142 or, as we used in my day at school, 22 over 7.  $\pi$  is a magical mathematical fact. I have been told another magical number that no one can explain, this time in physics. It is 137.0 followed by many decimal numbers!

*Order* does seem to be built into everything and one of my favourite examples of this is in the strata of sedimentary rock formations. Photographs of the Badlands of South Dakota show the miraculously undisturbed horizontal strata laid down over billions of years as silt at the bottom of a vast sea that covered central North America at the time of the dinosaurs. These rock beds have been exposed by erosion leaving the canyon walls looking like a code bar on a supermarket product. Maroon, brown, yellow, maroon, brown, yellow, repeated layer after layer after layer in exactly the same order, regular as clockwork. These layers must have been caused by the cyclical climate of the earth over a long periods of time, indicating to me a *pattern of order*.

The same thing can be found in many places and one of the most spectacular can be seen from the Autostrada that runs from La Spezia to Parma. The road over the Apennines follows a river-cut ravine that enables one to look across the valley and see the profile of the strata that are as regular as the teeth of a comb. The hard white limestone walls that are about ten foot thick are separated from each other by some 30 foot of softer limestone that has been eroded away. The white walls stand five foot high and run straight up the cliff. There must be 20 to 30 walls all equally spaced right across the whole face of the valley. The repeated symmetry of the strata is quite staggering.

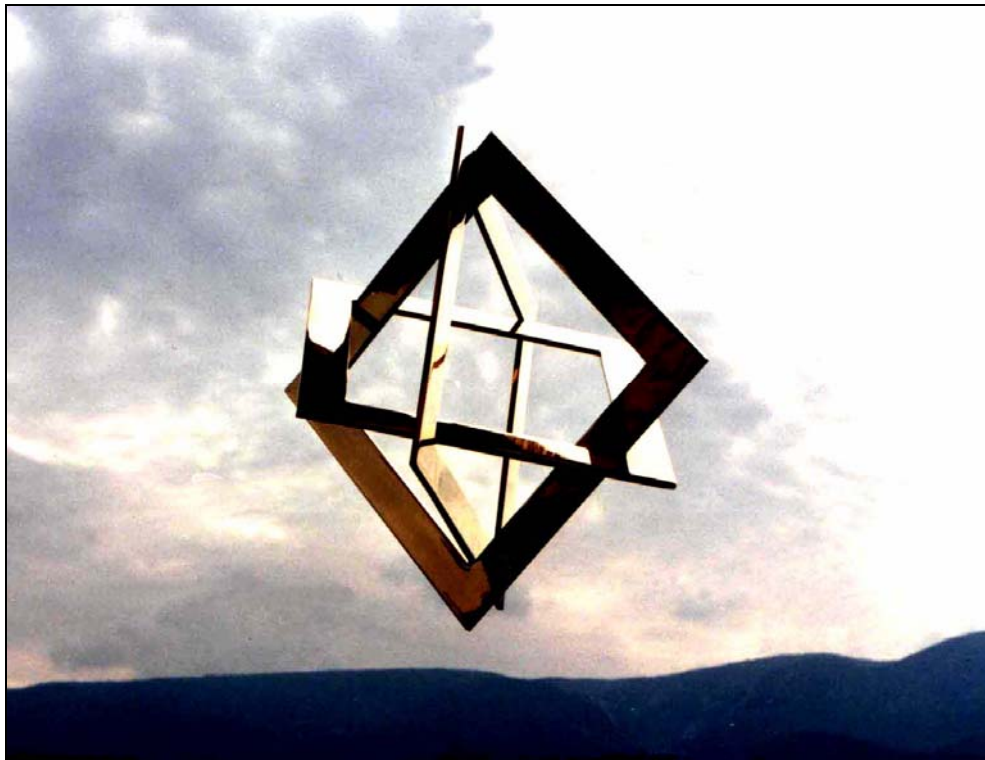
The magic of mathematics reminds me of a poem that Damon introduced me to by Robert Service called *Maternity*.

*Maternity*

There once was a Square, such a square little Square,  
And he loved a trim Triangle;  
But she was a flirt around her skirt  
Vainly she made him dangle.  
Oh he wanted to wed and he had no dread  
Of domestic woes and wrangles;  
For he thought that his fate was to procreate  
Cute little Squares and Triangles.

Now it happened one day in the geometrical way  
There swaggered a big bold Cube,  
With a haughty stare and he made that Square  
Have the air of a perfect boob;  
To his solid spell that Triangle fell,  
And she thrilled with love's sweet sickness,  
For she took delight in his breath and height-  
But how she adored his thickness!

So the poor little Square just died of despair  
For his love he could not strangle;  
While the bold Cube led to the bridal bed  
That cute and acute Triangle.  
The Square's sad lot she soon forgot,  
And his passionate pretensions . . .  
For she dotes on her kids- Oh such cute *Pyramids*  
In a world of three dimensions.



*Creation*

The whole is greater than the sum of the parts

Mathematics is the foundation of civilisation and the cornerstone of the *House of Science* on which all the other bricks rest. When the University of Wales Bangor closed the School of Mathematics that my friend Ronnie Brown had built up over the years, I was very upset for him. I don't think you can call yourself a *university* if you don't teach *mathematics*.

I am afraid I have drifted off course again. Let me park magic and mathematics for a moment and return to Earth! One of the most fascinating men to write about Human Society was Sir Thomas More. In his *thought provoking* book *Utopia*, published 500 years ago, he writes how the Utopians approach matters of *marriage, money, death* and *religion*. Here are my favourite passages:

*Marriage*. When they're thinking of getting married, they (the Utopians) do something that seemed to us quite absurd, though they take it very seriously. The prospective bride, no matter whether she's a spinster or a widow, is exhibited stark naked to the prospective bridegroom by a respectable married woman, and a suitable male chaperon shows the bridegroom naked to the bride. When we implied by our laughter that we thought it a silly system, they promptly turned the joke against *us*. What we find so odd, they said, is the silly way these things are arranged in other parts of the world. When you're buying a horse, and there's nothing at stake but a small sum of money, you take every possible precaution. The animal's practically naked already, but you firmly refuse to buy until you've whipped off the saddle and all the rest of the harness, to make sure there aren't any sores underneath.

But when you're choosing a wife, an article that for better or worse has got to last you a lifetime, you're unbelievably careless. You don't even bother to take it out of its wrappings. You judge the whole woman from a few square inches of face, which is all you can see of her, and then proceed to marry her – at the risk of finding her most disagreeable, when you see what she's really like. No doubt you needn't worry, if moral character is the only thing that interests you – but we're not all as wise as that, and even those who are sometimes find, when they get married, that a beautiful body can be quite a useful addition to a beautiful soul. Certainly those wrappings may easily conceal enough ugliness to destroy a husband's feelings for his wife, when it's too late for a physical separation. Of course, if she turns ugly after the wedding, he must just resign himself to his fate.

*Money*. In fact, when I consider any social system that prevails in the modern world, I can't, so help me God, see it as anything but a conspiracy of the rich to advance their own interests under the pretext of organising society. They think up all sorts of tricks and dodges, first for keeping safe their ill-gotten gains, and then for exploiting the poor by buying their labour as cheaply as possible. Once the rich have decided that these tricks and dodges shall be officially recognised by society – which includes the poor as well as the rich – they acquire the force of law. Thus an unscrupulous minority is led by its insatiable greed to monopolise what would have been enough to supply the needs of the whole population.

And yet how much happier even these people would be in Utopia! There, with the simultaneous abolition of money and the passion for money, how many other social problems have been solved, how many crimes eradicated! For obviously the end of money means the end of all those types of criminal behaviour which daily punishments are powerless to check: fraud,

theft, burglary, brawls, riots, disputes, rebellion, murder, treason, and black magic. And the moment money goes; you can also say goodbye to fear, tension, anxiety, overwork, and sleepless nights. Why, even poverty itself, the one problem that has always seemed to need money for its solution, would promptly disappear if money ceased to exist.

*Euthanasia.* In the case of permanent invalids, the nurses try to make them feel better by sitting and talking to them, and do all they can to relieve their symptoms. But if, besides being incurable, the disease also causes constant excruciating pain, some priests and government officials visit the person concerned, and say something like this: Let's face it, you'll never be able to live a normal life. You're just a nuisance to other people and a burden to yourself – in fact you're really leading a sort of posthumous existence. So why go on feeding germs? Since your life's a misery to you, why hesitate to die? You're imprisoned in a torture-chamber – why don't you break out and escape to a better world? Just say the word, and we'll arrange for your release. It's only common sense to cut your losses.

If the patient finds these arguments convincing, he either starves himself to death, or is given a soporific and put painlessly out of his misery. But this is strictly voluntary, and, if he prefers to stay alive, everyone will go on treating him as kindly as ever. Officially sanctioned euthanasia is regarded as an honourable death – but if you commit suicide for reasons which the priests or the government officials do not consider adequate, you forfeit all rights to either burial or cremation.

*Religion.* Finally, let me tell you about their religious ideas. There are several different religions on the island, and indeed in each town. There are sun-worshippers, moon-worshippers, and worshippers of various other planets. There are people who regard some great or good man of the past not merely as a god, but as the supreme god.

However, the vast majority take the much more sensible view that there is a single divine power, unknown, eternal, infinite, inexplicable, and quite beyond the grasp of the human mind, diffused throughout this universe of ours, not as a physical substance, but as an active force. This power they call The Parent. They give Him credit for everything that happens to everything, for all beginnings and ends, all growth, development, and change. Nor do they recognise any other form of deity.

On this point, indeed, all the different sects agree – that there is one Supreme Being, who is responsible for the creation and management of the universe, and they all use the same Utopian word to describe Him: Mythras. What they disagree about is, who Mythras is. Some say one thing, some another – but everyone claims that his Supreme Being is identical to Nature, that tremendous power which is internationally acknowledged to be the sole cause of everything. *End.* Well, I did start by saying 'thought provoking'.

The Creation of Man comes in several implausible fantasies that we are asked to believe without question, although they go against all scientific explanation, and none of them are possible unless you believe in *child fantasies*.

By far the best story that I have come across so far is one from the ancient mythology of China: In the time of the First Emperor it was believed that it took 18,000 years for the creator god P'an Ku to *chisel out the universe*. With every day that passed he grew six feet taller until he had finished the



carving. His body then turned into the physical universe, his head the mountains and his breath the wind. The sun and moon were made from his eyes and the stars from his beard. His limbs became the four quarters of the heavens and his blood the rivers, his skin the soil, his hair the trees and flowering plants, his teeth and bones the rocks and minerals and his sweat the rain. The lice on his body became the *Human Race!*

All religions work on a system of reward for being Good, the prize being Immortality, while the punishment for being Bad is Eternal Damnation. So be good or, "*You have Trouble, yes, I mean Trouble with a capital T.*"



***"They think I'm God"***

For me Epicurus and More have removed the sting from Death's tail. Death is the private affair for *the loving companion and their offspring*. I don't like memorial services. I believe the foundation of all moral codes is based on the same tenet, *Know Yourself*. I changed this tenet into three words, *Know Your Self* and created a sculpture using the simplest and most basic three-dimensional form possible, a three-sided pyramid, one side for each word of the title. The top half of the sculpture is stainless steel to imitate *electrum*, the alloy of silver and gold that the Egyptians used to catch the sun's rays on the Pyramidal cap of their obelisks. The base is pink granite and on each side is carved *Know Your Self*, in ancient Greek script, in Chinese characters and Egyptian hieroglyphs.

*KNOW YOUR SELF*



认识你自己

ΓΝΩΘΙ ΣΕΑΥΤΟΝ



Damon has placed his sculpture in a pond that lies at the centre of a spiral pathway, while Robert has placed his so that the point catches the rays of the setting sun as it dips behind Mt Soporis, home of the sacred *mother spirit* of the Ute Indians in the Rockies. One of the amazing things about this sculpture is that as the sun sets the tip seems to catch fire.

Voltaire's philosophy was an 'agnosticism tempered by deism'. He solved the conundrum of the *Miracle of the Being* by saying, *It is natural to admit the existence of God as soon as one opens one's eyes*. Sophocles said, *Numberless are the world's wonders, but none more wonderful than man*. All very well and good, but I am not sure philosophising about the existence of God or the purpose of Man solves many problems that arise in everyday life. Better surely to stick to the time honoured axiom of, *Know Your Self*, the key to self-discipline.

In the summer time Margie and I like to eat dinner in the studio, looking out on our orchard with classical music playing while we enjoy the meal, the sunset, and the garden's serenity. We often sit on into the dusk hoping to see an animal stalk by. We have seen foxes, hedgehogs, rabbits, once a deer, and occasionally an owl swoops by. Under the roof tiles of the studio there is a colony of tiny bats. When they wake up they patrol above our heads before crawling through a hole and escaping into the night to feed. The music adds to our tranquillity and the feeling of well-being. Amongst our favourite adagios is *Spring* from Beethoven's Fifth Violin Sonata, one of the most moving pieces of music ever written. Mozart's Third Violin Concerto is also a favourite and very special as it was the inspiration for my first Symbolic Sculpture, *Adagio*.



*Adagio*

Once we had been introduced to Classical music on the farm what a treasure trove we discovered! Jacqueline du Pré playing Elgar's *Cello Concerto* reduces me to pulp. Watching a video of her playing it on her cello as a teenager is one of the most enjoyable and emotionally charged experiences imaginable.

Many of these gifted artists, who have given so much pleasure to the world, have ended their lives in poverty or tragedy or both. Chopin died alone in agony and Tchaikovsky committed suicide after composing *Pathétique*. And then there is Mozart! The lack of recognition during his life is one of society's greatest sins. Painters have also suffered. Think of Van Gogh! Thank goodness a few escaped the cruelty of society! We were lucky to visit Claude Monet's gardens at Giverny before it became so popular.



*The Japanese Bridge at Giverny*

Copying a Monet painting is one of the most exciting things one can do. He was such a genius! I once tried my hand at *Sunshine and Snow*. What a joy!



*'Sunshine and Snow', by Monet, National Gallery, London*



Our word *paradise* comes from the Persian one for *garden*. As we have driven through Europe over the years we have been lucky enough to visit many gardens that were created as private wonderlands, but are now open to the public. The one that most excited us was built by the Rothschild family near Nice on a saddle of land that runs out to St Jean-Cap-Ferrat.



*Rothschild's villa at Villefranche*

We were there because a client had bought a black marble edition of *Eternity* and we stayed at the Welcome Hotel in Noel Coward's favourite bedroom, Number 42. We were able to spend all day in the villa gardens as they had a loggia café that served lunch and icy cold wine. It was utter magic, and we had the place to ourselves, which was marvellous as it was Margie's birthday! The house is a pink wonder from which you look out at what must be one of the most romantic water gardens ever designed for human pleasure.



*Rothschild's gardens from the villa*

On one of our trips to Italy we sidetracked across France so we could visit the *Pont du Gard*. We had seen photographs of this Roman wonder and as we had son Mark with us we thought it would also be a fun thing for him to see. We arrived in Nîmes and visited the amazing arena, which was made even more *breathhtaking* as the boys of the town were using it for a very energetic game of football. The enthusiastic shouting that echoed around the tiers of stone seats added a gladiator atmosphere to the spectacular ruins.

The following day we drove out to see the Pont. I have seen photographs of many famous constructions and not been surprised when I actually stood in front of them. The Pantheon, Pyramids, or El Deir in Petra all took my breath away, but I was not really surprised by the scale, maybe because the photograph usually included a human figure. This is impossible with the Pont du Gard. It is 100 times larger and more impressive than any photograph can lead you to believe. In my humble opinion it is one of the most breathtaking constructions in the world. Built in AD 14, six massive arches support 11 arches in the second tier and 35 above these carry the aqueduct that used to water Nîmes. The Pont floats across the river with amazing grace. What a feat of engineering! It really is a wonderful achievement.

We climbed up to the east end of the aqueduct and started to walk out to the middle along the water channel. Although it is some six foot wide and capped with slabs of stone you have the impression that you are walking on a knife-edge. Mark was only 12 years old and was leaping about like a goat, which caused us some concern so we turned round and retreated back to solid ground. Unfortunately there have been several tragic accidents recorded of people being blown off the top by freak gusts of wind.



*Pont du Gard*

It staggers me that the Roman civilisation was able to achieve so much and saddens me greatly to think it all came to an end. The abridged version of Gibbon's *Decline and Fall of the Roman Empire* is a book well worth reading because of the many parallels to the world's present situation between rich and poor nations.



My choice of a wonder of *exterior* construction is the Pont du Gard. On the other hand if I had to choose an *interior* wonder it would have to be the Mosque of Cordoba. Stepping inside the 10th-century building is quite one of the most overwhelming surprises I have ever had. The interior of the Pantheon is a majestic wonderment, whereas Cordoba is like stepping into an oasis of Epicurus's *peace and tranquillity*. The feeling is emphasised on a summer day when you pass from the scorching glare and heat of the courtyard into the cool dim interior, and is somewhat like diving into a swimming pool when you are hot, exhausted and you feel as though your brain has been fried!

The courtyard is vast, the size of a football ground. It is surrounded by high arched cloisters and crossed by cobbled paths running between groves of orange trees and splashing fountains. On stepping through the small doorway cut into the vast wooden gates of the mosque you enter a forest of pillars.



*'Mezquita' mosque of Cordoba*

Just enough bright sunlight filters into the interior to enable one's eyes to adjust quickly to the unique jewel box of alternating patterns of red and white double-horseshoe arches. It is as though the roof floats over the floor like a vast Bedouin tent. Every which way you look is the same, avenues of pillars stretching into eternity.

A small area in the middle of the mosque was converted into a cathedral in 1371. In one way it is an awful act of vandalism to see the garish gold furnishing of a 14th-century Spanish church embedded amongst the purity of the perfect Islamic architecture, but the juxtaposition actually adds to the splendour of the simplicity of what surrounds you, a bit like an offensive smell surrounded by orange blossom! By turning around and wandering again amongst the pillars you soon forget the carbuncle and drift back into the tranquillity of the symmetrical forest of pillars.



*A forest of pillars*

We had started our visit to Spain by driving from Lisbon down through the cork trees of Portugal across to Seville. We did all the things that one is meant to do in Seville like visiting Christopher Columbus's very impressive tomb in the cathedral and climbing the never-ending ramp up the bell tower to gaze out over the rooftops, but the only really enjoyable thing we saw there were the fountains in the Royal Palace gardens.



*The fountain of the Seville Royal Palace*

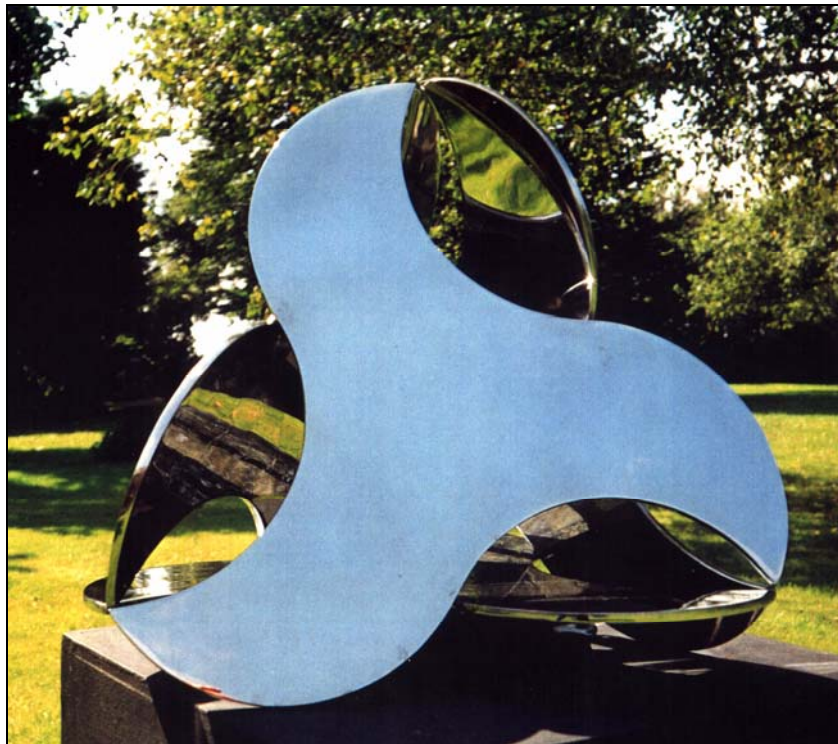
We were looking forward to reaching Granada to visit the Alhambra Palace that houses every known tile pattern that has ever been created. I had used one called the Andalusian tile in my sculpture *Prometheus' Hearth*.





*Alhambra Palace*

We had a overwhelming time at the Alhambra as for some reason we were virtually alone. We found the little alcove where the Harem girls sat in the sun with their backs against the wall of Andalusian tiles. It was utter perfection.



*'Prometheus' Hearth', Andalusian tiles from the harem alcove  
Frome College Somerset School of Mathematics and Drama*

It fascinates me that we are a product of all that has happened in the past, so thinking about Europe as a history book of art reaching back 35,000 years to Chauvet, the question continually has to be asked, "What if?"

What would have happened *if* in 1066 King Harold had *not* been struck in the eye by an arrow? Margie and I have tried to show Britain's history to our boys by taking them to places as varied as Stonehenge to the Tower of London, so it was natural that on one of our journeys we should visit Bayeux to see the tapestry that recorded the story of William the Conqueror. The strip of linen is 230 foot long and 20 inches wide made up of eight panels. Although it was probably embroidered in England it now hangs in France.



*'Bayeux Tapestry', near Caen in Brittany, 1070*



The Vikings are another important part of English history. The Oslo Boat Museum is one of the most mesmerising places one could ever see as not only do they have several elegant Viking boats, but also Thor Heyerdahl's balsa log *Kon Tiki*, but also his reed *RA II*. Whereas the *Kon Tiki* is *unbelievably* small and ugly, the Viking boats are *unbelievably* large and graceful. I don't think I have ever been so visually moved by the lines of a man-made creation as those of a Viking war ship. Sheer *Line of Grace!*



*Viking war ship, Oslo*

When the Bradshaw Foundation's construction team were in Copenhagen to erect the aluminium cast of the *Dabous Giraffe* carving outside the Natural History Museum, I took the opportunity to see the amazing collection of Viking bronze horns, swords, shields and urns that have been recovered from the peat bogs. These were all fascinating to see, but what caught my eye in particular was a 25-foot long boat carved out of a single two-foot diameter tree trunk that was labelled a *one-tree stretched boat*.

The technique used to stretch the wood was to first carve a standard dugout canoe and then bury it in wet sand until the wood became pliable. The canoe was then dug up, the middle stretched wider by hammering in wooden crossbars and reburied, left, dug up and the process repeated until the canoe was stretched to have a four-foot wide seat across the middle, a three-foot wide seat either side of the middle one, and next to them a two-foot seat. The five benches keep the sides of the boat apart. This process lowered the central gunwales and raised the bow and stern so it looked like a Viking boat!

In the Antigua Museum a notice told us that the Caribs of Venezuela built similar *one-tree stretched boats* for their raids on the West Indies tribes. The museum claimed that the Caribs' boats carried up to 100 warriors! This is hard to believe, as it means the tree must have been gigantic, but Columbus reported to the King of Spain in 1493 he saw such boats, with 80 rowers!

What intrigued me was that it seems that both the Vikings and Caribs used the same boat-building technique! This raises the question, could such a technique have been discovered separately on either side of the Atlantic?

When considering the *Migration of Man* around the world, we know that the Vikings reached North America around AD 1,000. They arrived via Iceland and Greenland, crossing to Baffin Island, sailed south down the coast of Labrador, and arrived in the mouth of the St Lawrence River in boats built with clinker planks held in place with iron rivets. The archaeological remains found at a settlement in Newfoundland are definitely of Viking origin.

The Vikings used 50 to 60-foot long cargo boats called Knarrs. The 12-man crew boats had a 40-foot high mast that carried a square sail, had a three-foot draft and storage for 20 tons of goods.

The question in my mind is, *Why would such adventurers as the Vikings wish to remain in a place like Newfoundland that has such an awful climate?* Surely the Vikings would want to sail on down the coast all the way to the Caribbean. They had the ability to do it, so why then not continue south to Venezuela? Are the Central American Aztec tales of bearded white skinned Gods arriving, staying for a while and promising to return, describing Vikings?

In the Tropics the wooden boats would have quickly been destroyed by borer worm and as it would have been impossible to cut planks to build another boat, maybe they used the ancient Danish technique of stretching single trees into boats, and this was how the Caribs learnt the technology!

The Vikings regularly sailed all the way down the Atlantic coast of France and Portugal, passed through the Straits of Gibraltar, to trade at ports along the coasts of Spain, Italy, Greece, reached Constantinople and sailed out into the Black Sea and up the Volga. Possibly a ship was blown off course, picked up by the Trade Winds and ended up in the New World, without going anywhere near Newfoundland! After all, Thor Heyerdahl made this crossing in *RA II*, a 50-foot long reed boat built of papyrus grass in Morocco!

Of course all this is very fanciful and there is absolutely no proof that the Vikings reached Brazil, although there is no doubt that they certainly had the ability to do so. The fact that the Vikings and the Caribs natives both knew how to make *one-tree stretched boats* still puzzles me.

Oslo has some outstanding art and of course we had to see *The Scream* by Munch, but our sights were set on visiting *Frogner Park* to see for ourselves the works of the sculptor Gustav Vigeland. A brilliant sculptor and artistic genius!

In the first quarter of the 20th century the enlightened council of Oslo commissioned Vigeland to fill a park in the centre of the city with figurative sculptures. The theme of his work is the 'Continuity of Life'. The most striking of the sculptures for me are the figures set in trees, because they are so utterly original. They are enchantingly simple and when the grandchildren climb in our magnolia they look just like Vigeland sculptures. In the centre of the park is a giant stone column of life, made up of a writhing mass of humanity consisting of 121 bodies, all rising 'towards the light, the sun, towards the sphere of ideal'. Gustav Vigeland said, "It is my religion." The monolith is carved from a single 260 ton block of granite and is 55 foot high! The commissioning of the park by the council is an amazing example of Sperone Speroni's definition of Civilisation as being *the creation of wealth and the patronage of art*.