

Freemasonry and the Royal Society
An Address given by VWBro Gary Muir, Grand Lecturer
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In 2004, the Royal Society of New Zealand, in conjunction with Freemasons New Zealand, launched a Big Science Adventure for Schools with the topic *The Transit of Venus*.

This led me to three questions:

- What is the Royal Society, and how is it connected to Freemasonry?
- What is the importance of the Transit of Venus?
- What are the Big Science Adventures?

To answer the first question, what is The Royal Society and how is it connected to Freemasonry, we must first look at the 17th century political situation in England. From 1640 to 1645 a devastating civil war was fought between the supporters of Parliament led by Oliver Cromwell, a Puritan, and the Royalist supporters of King Charles the First, a Catholic. The Royalists eventually lost, Cromwell ruled as Lord Protector of England and King Charles was tried and beheaded. It has been suggested that Cromwell was a Freemason, and it is known that his army commander and close friend, Sir Thomas Fairfax, was a member of the Craft.

One of the best sources of information about Freemasonry during this period was the diary of Elias Ashmole, who was initiated into the Craft in Scotland in October 1646. Although a known supporter of King Charles I, Ashmole moved to the Puritan stronghold of London and settled there. He mingled with high-ranking Puritans whilst being known as a Royalist supporter. There can be little doubt that as Ashmole was a member of the only non-religious, non-political organization of the day, he was safe wherever he travelled.

Ashmole became the friend and acquaintance of a small group of learned, intellectual men, who were interested in what was at that time called the "experimental" or "new" philosophy. Around 1645 these men began meeting informally at Gresham College, to attend lectures and discuss their mutual interests. Sir Thomas Gresham, who laid down in his will that the subjects to be taught were divinity, medicine, geometry, astronomy, rhetoric and music, founded Gresham College. Before his death Sir Thomas had been appointed joint General Warden of Masons so it is not surprising that he sought to instill his new college with the principles of Freemasonry. This group became known as an "invisible college".

This college consisted of a group of natural philosophers and scientists including Christopher Wren, who was a professor at the college and who later, became a freemason. The college's common theme was to acquire knowledge through experimental investigation, and to encourage its professors to discuss practical applications of their subjects. The professors of geometry and astronomy worked closely with the Royal Navy on maritime research.

By 1660, the "invisible college" consisted of twelve men who had supported both sides of the civil war. Among these was Sir Robert Moray, who along with Ashmole, Wren and the others, became very active in this "invisible college". Moray was a complex and confusing person. As a soldier he had fought on both sides of the Civil war, he was a French spy and was instrumental in having Charles II crowned King of the Scots.

At some point in the 16th Century, the Scottish mason's guild began accepting gentlemen members, who did not practice the art of stone cutting. However, these gentlemen were interested in the so-called *mysteries of the craft*; that is the mathematical and scientific knowledge that was the special keeping of the stonemasons. The gentlemen became 'accepted' masons with Sir Robert Moray becoming an 'accepted' member of the Lodge of Edinburgh in 1641. Although initiated into

a Scottish lodge, his initiation took place south of the Scottish Border, thereby giving the earliest, and still existing, record of a man initiated into speculative masonry on English soil.

Not only was Sir Robert Moray one of the strongest enthusiasts of the 'invisible college', he was well established in the good graces of King Charles II. Because of this he was chosen as the most suitable man to seek the approval, and the support of the King for this 'invisible college'. The King endorsed the principles of the college, was asked to be patron, and was pleased to grant the college a royal warrant.

In 1660 the Royal Society, the world's first assembly of scientists and engineers, dedicated to understanding the wonders created by the Great Architect of the Universe, was officially launched. By this stage many members of the society were also Freemasons. Moray chaired the meetings of the new society, and the new constitution made it possible to overcome any difficulties or differences that may have existed between members. Moray drew heavily on the teachings of Freemasonry and forbade any discussion on politics or religion, as these topics tended to divide men rather than uniting them in the pursuit of scientific knowledge.

Sir Robert Moray was the first president and held office until the enactment of the final Royal Charter, when Lord Brouncker was chosen, by the King, as its long term president. Sir Christopher Wren was a founding member of the Royal Society and president from 1680 to 1682. Like a Masonic Lodge, the Royal Society has three officers to rule it and the method of voting is the same as is used in lodges today.

A founding member of the society and a Freemason was John Aubrey, the noted antiquarian and miscellaneous writer who is best known for his famous work *The Lives of Eminent Men*. He also did field work on Avebury and Stonehenge and claimed that Avebury was an ancient cult centre of Druids.

Over the years there have been many notable scientist/freemasons in the Royal Society. Among them are Sir Isaac Newton, Benjamin Franklin, Sir Alexander Fleming and John Desaguliers (the first man to demonstrate the existence of the atom). Desaguliers became the Grand Master of Freemasonry in 1719 and was influential in shaping the form that 18th century Freemasonry was to take.

History shows that the Royal Society was founded by Freemasons, and was dominated by them for the first decades of its existence. Freemasonry encouraged its members to explore "the hidden mysteries of nature and science" and to "follow the paths of virtue and science" and the Royal Society translated this philosophical concept into observation and practical experiment, which has given us many of the technical benefits of the modern world.

The Duke of Sussex, Freemason's Grand Master and President of the Royal Society started the beginning of the separation of Freemasonry and the Royal Society. The reason for this is complex and has to do with, among other things, the rival Grand Lodges in England, which Sussex united in 1813. It was during Sussex's presidency that the histories of Freemasonry, written by Moray and Ashmole, disappeared from the Society's library and to this day no one knows why.

After one and a half centuries the ties of the two organizations began to wither. Joseph Banks (of Cook's voyage fame) became president of the Royal Society when it moved to Somerset House, and he favoured a mixture of working scientists and wealthy amateurs to finance the research work. In 1850 the British Government made a grant of one thousand pounds to assist the work of the society.

In 1847, almost two hundred years after the Society's beginning, it was decided that in future *Fellows of the Royal Society would be elected solely on the basis of their scientific work*. This saw the final parting of the ways with Freemasonry.

The Royal Society went on to become the premier organization of professional scientists that it is today, while Freemasonry went back to the secrecy of the lodge and the perfection of the ritual. Perhaps Freemasonry's task had been done as a child of Enlightenment. The once secret values of religious tolerance, democracy and the right to form parliaments had become universal. At a time when superstition and magic governed reason and the Church claimed monopoly on "true" knowledge, the Royal Society and the Freemasons called on the use of logic and experimentation to

establish the facts of nature. This new professional approach meant that the Society was no longer just a learned society, but also a de facto academy of scientists.

Over the next decades the Royal Society grew rapidly and now has a staff of over 120 and is housed in Numbers 6-9 Carlton House Terrace, a street in the St James district of London. It has branches in most countries of the world, including New Zealand.

And so to my second question - the **Importance of the Transit of Venus?**

For many years the measurement of longitude was a dead reckoning event when navigators would sail to the latitude of their destination, turn toward their destination and follow a line of constant latitude. This was a hit and miss way of sea travel and to have an accurate way of measuring longitude would make sailing safer and timelier.

As the earth rotates at a steady rate there is a direct relationship between time and longitude. If a sailor knew the time at a fixed reference point when some event occurred at this location, the difference between that time and his apparent local time would give him his position relative to the fixed position. The difficulty in measuring the time at a reference point at sea was overcome by John Hamilton, who invented the chronometer, which was in use for many years.

The transit of Venus occurs when the planet Venus passes directly between the Earth and the Sun and its unlit side can be seen as a small black circle moving across the face of the Sun. By observing this phenomenon, the speed of the planet's orbit can be calculated and the Earth-Sun distance can be determined. Because of the way the orbits of Earth, Sun and Venus coincide, transits of Venus occur in pairs, eight years apart, approximately once every 120 years. Therefore as the Transit of Venus would be at a known time, taking simultaneous measurements from widely spaced geographical locations could make an accurate calculation of the distance of the Earth from the Sun. In the mid 17th century the first recorded observation of the transit of Venus was by Jeremiah Horrocks, who is believed to have been at Carr House.

British astronomers wanted to be at the forefront of new efforts to measure the Transit of Venus, which was due to take place in June 1769. It would be best seen from Tahiti and the Royal Society agreed to organize and finance the venture.

Having proven himself as an excellent sailor, navigator, chart maker and astronomer, James Cook, as Captain, was acceptable to the society. The weather was perfect for the transit and the results provided by Cook were used in the final calculations for the Nautical Almanac.

The next Transit of Venus will be in 2012, eight years after the 2004 event and will start on June the 5th. It will be visible in Hawaii, Australia, the Pacific and Asia. It is to be hoped that the Royal Society of New Zealand and the Freemasons New Zealand will come together again to support another project concerning the Transit of Venus.

And now to the third question - **The Big Science Adventures?**

On being invested as Fellow Craft freemasons, we are expected to make the liberal arts and sciences our future study. It is little wonder that the Freemasons NZ joined with the Royal Society of New Zealand and the Arts Foundation in the Big Science Adventures. The Royal Society is the pre-eminent organization in the country for the promotion and advancement of science, while the Arts Foundation honours the excellence of creativity and invests in the cultural heritage of the nation. Both are highly eminent organizations with which Freemasonry can feel very comfortable being associated with, and in whose activities and membership the message of Freemasonry will be recognized and respected.

The Freemasons Big Science Adventure video competition is a means of building the association between the Royal Society and the Freemasons, because they are youth orientated and enlarge the circle of people we touch. Each entrant produces a DVD on some aspect of the topic selected for the year.

The first of these Big Science Adventures was held in 2004 with the topic *The Transit of Venus* and its relevance to modern life. Seventy-two schools entered the project and the judges were impressed with all the entries. The winners from Nelson High School, Pakuranga College and

Burnside High School went to England, where one group viewed the transit at Carr House and the other two teams at Whitby.

Since 2004 Freemasons New Zealand, the Royal Society of New Zealand and the Arts Foundation have been involved in further Big Science Adventure school projects.

These are: -

2005 - This year celebrated the three major insights into the workings of the Universe as published by Albert Einstein one hundred years ago. The students made videos about a variety of physics topics, from special relativity to a demonstration of the laws of physics. The two winning teams, Kaitia College and Fairfield College, visited the UK and Europe and in particular the Royal Society of London and the Vatican Observatory. The girls from Kaitia demonstrated Newton's *laws of motion* with a dead opossum. The Fairfield team chose New Zealand born Nobel Prize winner, Maurice Wilkins, who discovered the DNA helix, as their subject.

2006 - This year the DVD had to cover something, someone or an adventure in his or her own region. Entries in this competition covered topics as diverse as adolescent sleep patterns and water spiders. The six winning teams went on film making field trips with some of the country's top scientists, to volcanoes, fiords, and remote islands. The team with the winning video from these trips, as judged by Sir Edmund Hillary himself, was taken on a trip to Scott Base in Antarctica. Timaru Boys High School was the winner. The winning DVD discussed natural selection, and evidence that exists to support it, following a trip to the Chatham Islands.

2007 - The Big Science Theme was *Climate and Energy* and the team from Otago Girls High School who visited the UK and Greenland won the competition. The entries covered diverse topics from white earth melting, to sex determination of fish. This year's winning team's subject was *Spottie the difference* - a look at fish reproduction from a different angle.

2008 - The Big Science theme was Darwin's *Theory of Evolution*. The participants were given quite a range of choices, from looking at New Zealand's unique plants and animals through to examining religious ideas in Darwin's day, and other interesting ideas in-between. Major prizes included a two-week trip to the UK and an adventure-packed visit to Sub Antarctic Islands. Three students each from Nelson College and Tauranga College were the overall winners. The Tauranga girls DVD investigated the evolution of New Zealand's unique plants and animals and the effects of the arrival of humans. Nelson College boys explained Rutherford's understanding of radioactivity, and underpinned Darwin's theory of evolution, that the earth was old enough for the slow process of evolution to have occurred.

This year, 2009, is the International Year of Astronomy, and it is 400 years since Galileo made a telescope. The theme honours Galileo Galilei and all the scientists before and since who have bravely put forward radical new ideas and theories, risking rejection, ridicule, imprisonment, or even death.

And so once again the Royal Society and the Freemasons have come together, and if Sir Robert Moray was alive to today he would be totally satisfied with the direction that his beloved Society and the Freemasons are taking in New Zealand and would fully support it.

On a different note but still relating to the Royal Society and Freemasonry, those of us who have visited Puketoi Lodge in Pongaroa, may or may not have noticed the monument in the village square. It consists of three balls placed one on top of the other and is said to represent the helix of the DNA molecule. The importance of this monument is that it was erected by the citizens of Pongaroa with assistance of the Royal Society of New Zealand, College of Sciences, Massey University and others, and commemorates Maurice Hugh Fredrick Wilkins. He was born in Pongaroa in 1916, the son of Dr Edgar Wilkins. In 1940, Maurice received his physics degree and worked on the radar system during WWII. Following the war he became an active anti nuclear and warfare activist and changed his science knowledge to the new science of biophysics. At Kings College of London, he and his colleague Rosalind Franklin studied the structure of DNA using X-ray diffraction techniques. Wilkins, Crick and Watson were awarded the 1962 Nobel Prize in Physiology and Medicine for their work. There appears to be no record of Wilkins having been a

Freemason but the link between the Royal Society and Freemasonry is established when Brethren visit Puketoi Lodge and spend a few minutes at the monument. It was Wilkins's discovery of the DNA molecule that was used by the winning team from Fairfield College in the 2005 Big Science Adventure competition.

In conclusion I would like to quote Georg (Gayork) Fabricus, the 16th Century German protestant poet, historian and archaeologist who said, *Death comes to us all but great achievements build a monument, which shall endure until the sun grows cold.*