

Geometry

The Source of our Inspiration

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I am afraid that the title of this Paper is somewhat forbidding. Let me therefore begin by making it clear that I am not going to talk about what they teach in schools as a specialised branch of mathematics. Indeed, when I was a school (alas! Many years ago) geometry was one of my weak subjects and, in my more mature years, I gained no special insight into Pythagoras's square of the hypotenuse or the mysteries of the isosceles triangle. I am in fact first going to ask you to cast your minds back to those ancient times when the word geometry had a much greater signification, and talk about what we Masons call the era of transition, the century that immediately preceded the constitution of the first Grand Lodge in 1717. I shall then draw certain conclusions applicable to our present-day conduct.

But first of all, I would like to point out, for this has a definite bearing on what I am about to say, that language is in a continuing state of evolution. The value of certain words changes as time goes on. Some are dropped from current use while new words are always being coined to express the same ideas. Likewise the meaning of others is either strengthened or weakened. Accordingly, it is a pre-requisite for Masonic researchers to give some thought to semantics, or the science of significations, if they wish to avoid the pitfalls of false conclusions due to the misinterpretations of certain words. Geometry is one of these words.

Its etymology is simple: geo the earth and metry measurement measurement of the earth. But in the 17th century, when the many sub-divisions of science we refer to today were unknown, the word had a much wider significance, All rationalist thought came under this heading.

For example, the 17th century philosopher Thomas Hobbes (who was not a Mason) regarded the geometric method of demonstration as the true scientific method and wrote the following:

... and therefore in Geometry (which is the only science it has pleased God hitherto to bestow on Mankind) men begin of settling of significations. (1.)

The Wood manuscript, a Masonic document said to date from 1610, tells us that Euclid, the great mathematician of antiquity, who lived some 300 years before our present era, equated geometry and Masonry. It states:

And that worthy clark Euclidean gave it the name of Geometry; and now it is called through all the land Masonry.

And it goes on to give the following definition:

Geometry, and that teacheth a man the mete and measure of the earth, and of all other things, which science is called Masonry.

The same document explains why Geometry is by far the most important of the seven liberal arts and sciences which, if I may presume to refresh your minds, are Grammar, Rhetoric, Arithmetic, Geometry, Music, Logic and Astronomy. I quote:

Note, I pray you, that these seven are contained under Geometry, for it teacheth mete and measure Ponderation and weight, for everything in and upon the whole earth for you to know; that every craftsman works by measure. He buys or sells by weight or measure. Husbandmen, navigators, planters and all of them use Geometry; for neither Grammar nor Logic, nor any of the said sciences can subsist without Geometry, which is therefore most Worthy and Honorable.

Since Geometry was considered to be synonymous with Omniscience, it is easy to see why the Supreme Being subsequently became known in the second degree as The Grand Geometrician of the Universe.

Now the operative masons of those days of course made use of the working tools, but did not speculate on them, or give them symbolic value. The corporative system that had regulated the craft during the Middle Ages was in pronounced decline. The system was doomed essentially because the whole social structure of the country was undergoing a radical and irreversible change. No more cathedrals were being built and King Charles II dealt the final death-blow to the operative guilds in 1666 he decided to allow non-members of the guilds to play their part in the rebuilding of London after the Great Fire. Anderson himself tells us in the historical part of his Constitutions, issued in 1723, that in the reign of James II (1685-1688) the lodges dwindled into ignorance by not being duly frequented and cultivated . This was obviously an understatement, because the tendency was certainly not confined to the three years of the reign of James II. Indeed we learn from the Masonic historians Knoop & Jones (2.) That they dwindled to such an extent during the century that only 579 mason-apprentices took their freedom in London during the 70 years from 1619-1689, an average of only eight per year. The plain fact is that it was not a very enviable fate to be an operative mason in those days. The great inflation of the 16th century, followed by the chronic economic crises of the early part of the 17th, had taken their toll. Many men drifted away from the profession, and those that remained were poor, hard-working, ignorant men, whose sole concern was earning a bare subsistence by some 14 hours of work a day. To quote a well-known social historian:

In a period when England swarmed with paupers, they knew no living society based on any principle but that of rank; they could not conceive of one that could be based on anything else. The view of society as essentially hierarchic was almost universally held in the sixteenth century and was still powerful in the seventeenth. (3.)

The legend that has been spread by so many Masonic authors who do not appear to have studied the social context of the period, to the effect that gentlemen joined the operative lodges in increasing numbers until they finally took them over, can only be described as grotesque. There were very few professional architects in those early days, and such new ideas as came to light were mostly brought to England from foreign sources by wealthy young men who had made what was called the Grand Tour of Europe to complete their education. Some of them may conceivably have had mansions built on their return, and even have become honorary members of operative lodges. But this was patronage, and quite different from becoming a member on the same level, which socially speaking was impossible. Class distinctions were very clearly defined in those days, and strictly observed.

But some legends are very tenacious, and the fiction that our kind of Freemasonry was evolved from the corporative system that presided over the building trade for so many centuries is so romantic and so appealing to the rank and file of the Craft that it has been carefully fostered, although there is not a shadow of proof to substantiate it.

If we now turn to the gentlemen of the period, we find that the 17th century proved to be one of the most fertile and progressive England has ever seen. It all stemmed from the teachings of Sir Francis Bacon (1561-1626), the father of Experimental Philosophy. He advocated the use of inductive as opposed to deductive reasoning, and knowledge based on actual experiments as opposed to the sterile scholasticism of the Middle Ages.

The new of Natural philosophy that derived from Bacon's teachings was based on geometry, which was equated with reason and experiment, and it was quite revolutionary. In the words of Christopher Hill:

If Professor Butterfield is right to regard the emergence of a new scientific civilization in the late 17th century as the greatest landmark since the rise of Christianity, then so far as England is concerned, Bacon is clearly the decisive figure and was recognised to be so in the 17th century. (4.)

And again:

Many of the ideas . . . can be linked by the emphasis on experience, experiment rather than authority; on things rather than words, on the test of the senses and the heart as against intellectual exercises divorced from practice, on thinking as against the learning by rote which had been necessary before the invention of printing; on reason against precedent, but on experience against reasonings vain (5.)

The empirical school of thought is summed up as follows in the British Encyclopaedia:

Dedication to reason, the belief in intellectual progress, the confidence in Nature as a source of inspiration and value, and the search for tolerance and freedom in political and social institutions. (6.)

The gentlemen who founded this school of thought under Cromwell in about 1645 it was known as the Invisible College and Cromwell's brother-in-law was one of the moving spirits finally found official recognition after the restoration of the Stuarts, when Charles II granted them a Royal Charter, and they formed a body call The Royal Society for the Improving of Natural Knowledge, now known (for it still exists) more simply as The Royal Society. It is perhaps significant that Sir Robert Moray, who is the first gentleman on record as having joined a Masonic lodge in 1641, and who was familiar of the King, was instrumental in obtaining a charter, which specifically states that the society was being formed for the purpose of promoting the knowledge of natural things and for making experiments in all matters philosophical, mathematical and mechanical . It is to be noted that mathematics were not taught at the universities in those days, although they made a modest debut at Cambridge University in 1663.

The Royal Society became the centre of progressive thought in England, and almost all the gentlemen of any note became members. It should be remembered in this connection that the England of those days was very sparsely populated. The entire population numbered four to five million souls (about a twelfth of what it is today), of which about 250,000 lived in London itself. The gentry represented less than 5% of the total, but it must also be said that the illiterate gentleman was no rarity, and the Royal Society was composed of the cream. Its membership was extremely eclectic, for although its avowed aim was to conduct scientific experiments, it actually took all knowledge as its province. It is thus that, among the 200 odd early members, we find men of letters like Dryden the poet laureate, prominent men like Waller, Evelyn and Aubrey alongside Samuel Pepys the diarist, Sir Christopher Wren, the great architect and astronomer, Sire William Petty, the inventor of statistics (then known as political arithmetic), Robert Boyle the chemist, etc.

The case of Sir Christopher Wren is extremely interesting, for it illustrates the cleavage between the world of thought and the operative masons of the time, who were quite incapable of any intellectual achievement, and in particular of inventing the broad, sound, and valid for all time, principles on which Speculative Freemasonry is founded. He began his professional life as an astronomer, becoming Professor of Astronomy at Gresham College in London at the early age of 25, then Savilian Professor of Astronomy at Oxford University, before turning to architecture when he was 30 years old. The reason why he decided to become an architect is suggested in the following quotation from the British Encyclopaedia:

One of the reason why Wren turned to architecture may have been the almost complete absence of serious architectural endeavour in England at the time. The architect Inigo Jones had died in 1652, his career having virtually terminated ten years previously. There were perhaps half a dozen man in England with a reasonable grasp of architectural theory and none with the confidence to bring the art of building within the intellectual range of Royal Society thought that is to say, as an art capable of beneficial scientific inquiry. (7.)

We find confirmation of this cleavage between architectural theory and practice in the book written by Thomas (late Bishop) Sprat in 1667, entitled *History of the Royal Society*. I quote two extracts:

The furniture and magnificence of houses is risen to a wonderful beauty within our memory: but few or none have thoroughly studied the well-ordering of timber, the hardness of stone, the improvement of mortar, and the making of better bricks. The like may be shewn in all the rest, wherein the solid inventions are wont to be overwhelmed by gaudiness and superfluity, which vanity has been caused by this, that the artists have chiefly been guided by the fancies of the rich or the young, or by vain humorists, and not by the rules and judgements of men of knowledge. (8.)

And again:

They (the Royal Society) have studied the promoting of architecture in our island, and the beauty of our late buildings, and the reformation of his (the king's) own houses, so sufficiently manifest his skill and inclination to that Art; of which magnificence we had seen more effects than this, if he had not been called off by this war, from houses of convenience to houses of strength. (9.)

And this is what Sprat had to say about the re-building of London after the Great Fire of 1666:

A new city is to be built, on the most advantageous seat of all Europe for trade and command. This therefore is the fittest season for use to apply their thoughts to the improving of the materials of building and to the invention of better models for houses, roofs, chimnies, conduits, wharfs and streets; all of which have already been under the consideration of the Royal Society; and that too before they had such a sad occasion of bringing their observations into practice. (10.)

Although the Royal Society obviously took considerable interest in architecture, it did not of course order or engage itself in any actual building; its interest was exclusively speculative and disinterested. It should also be noted that Thomas Sprat did not appear to have a very high opinion of the operative masons; it rather looks as if he scorned and despised them, and he certainly did not associate with them or join their lodges. Neither did Sir Christopher Wren, although he subsequently became a great architectural genius, and after the Great Fire of London, chalked up to his credit not only St. Paul's cathedral, but the re-building of fifty-two of the churches that had been destroyed.

It has been suggested, once again without the slightest proof, that Sir Christopher Wren became a Mason in 1691, when he was already sixty years old and at the height of his great career. But nobody seems to know what Lodge he joined, and whether it was of a speculative or operative character. It seems to me that this is analogous with the fact that the late Sir Winston Churchill patronised and was made a member of the Bricklayer s Guild.

Another great genius who became a prominent member of the Royal Society was Sir Isaac Newton. He made his first communication to the Society in 1672, when he was only thirty years old, the subject being his theory of light. He went on to become President of the Society in 1703, and remained in that office until his death some 25 years later. He never became a Freemason, but it is highly significant that his disciple John Desaguliers, who was 41 years younger, was the moving spirit behind the constitution of the first Grand Lodge. It is a safe bet that Newton knew of and approved this momentous event.

It is hardly necessary to mention Newton s great discoveries concerning universal gravitation and light for they are so well known, but it is perhaps of interest to emphasize that he was also a great geometrician, having discovered the binomial theorem and developed the calculus, a more powerful form of analysis that employs infinitesimal considerations in finding the slope of curves and areas under curves. (11.)

The great merit of Sprat and the men behind him derives from the fact that, over three hundred years ago, they formulated some of the great principles that were foreign to the times in which they lived, but are basic to modern Speculative Freemasonry. They are clearly the source of our inspiration. Their pronouncements were all the more remarkable in that the period was one when England was hidebound by prejudice of all kinds. It was impossible to worship God as one pleased and Roman Catholics in particular could not hold public office, neither could they live within ten miles of London. Foreigners were looked upon with scorn and derision by the narrow-minded men of those days.

Yet Sprat, in the name of the royal Society, proclaimed that men of all nationalities and beliefs were encouraged to join the Society, share in its labours, and contribute to its efforts. This audacity was in the context of the times nothing short of revolutionary, for the notion of universality was simply non-existent. This is what he wrote in this connection:

It is to be noted that they (the Royal Society) have freely admitted men of different Religions, Countries and Professions of Life. This they were obliged to do, or else they would come far short of the largeness of their own Declarations. For they openly profess, not to lay the Foundations of an English, Scottish, Irish, Popish or Protestant Philosophy, but a Philosophy of Mankind. (12.)

He further proclaimed the spirit of tolerance, another innovation of the period, when men had just been through a time when they were quite ready to kill one another because they differed in their political and religious opinions. This is what he wrote in this connection:

But now since the King s return the blindness of the former ages, and the miseries of the last, are vanished away; now men are generally weary of the Relicks of Antiquity, and satiated with religious disputes; now not only the eyes of men, but their hands are open and prepar d to labour. Now there is a universal desire after the peaceful, the fruitful, the nourishing knowledge: and not after that of ancient sects, which only yielded hard inadequate arguments or sharp contentions instead of food; which when the minds of men requir d bread, gave them only a stone. (13.)

He was likewise opposed to dogmatism, as is shown by the following quotation:

Nothing sound is to be expected from those who will fix blindly on whatever they can lay hold of, and nothing great from them who will always wander; who will never leave disputing whether they dream or wake...

They are therefore as far from being Scepticks as the greatest Dogmatists themselves. The Scepticks deny all, both doctrines and Works. The Dogmatists determine on doctrines without sufficient respect to Works; and this Assembly (though we should grant that they have wholly omitted doctrines) yet they have been very positive and affirmative in their Works. (14.)

These principles of universality, tolerance and absence of dogmatism are the very marrow of the Craft today. Thomas Sprat was the first to proclaim them on behalf of his fellows of the Royal Society and all homage is therefore due to them.

For there can be no doubt that the foundation of the first Grand Lodge in 1717 was strongly influenced by members of the Royal Society. The moving spirit in its formation was, as you know, John Desaguliers,. Himself a member of the Royal Society, professor of Speculative Philosophy at Oxford University, and a disciple of Sir Isaac Newton. It has conclusively been shown that well over half of the fellows of the Royal Society were members of the first Grand Lodge in the early days and most of the Grand Masters in the first 50 years of its existence were also fellows of the Royal Society. I am quite prepared to admit that the four Lodges who joined together to create the first Grand Lodge had both operative and speculative members among them. It is however impossible to say where the preponderance lay; and it is tendencious to suggest that most of them were manual workers, who, working some 14 hours a day, probably had neither the means nor the leisure to consort with their social superiors in the taverns where these lodges met, let alone attend the Annual Feast. It had generally been assumed that the first Grand Master, Anthony Sayer, was a manual worker until Bro. R. Theodore Beck, the Prestonian lecturer for 1875 (15.) Conclusively proved that he was in fact a bookseller by profession. John Desaguliers was a young man of 34 when the Grand Lodge was formed, and he was surrounded by a number of young

gentlemen of the same age group, of which the best known were Martin Folkes, William Stukely and Richard Rawlinson, all imbued with the philosophical ideas of the day and eager to make a reality of the universality of masonry. Thus we see Thomas Sprat's pronouncement echoed in the Constitutions of Anderson (1723), which were probably drafted by Desaguliers, and the Craft welcomed:

All good men and true, by whatever Denominations or Persuasions they may be distinguished; whereby Masonry becomes the centre of union and the means of conciliating true friendship among persons that must have remained at a perpetual distance.

While it is certain that Speculative Freemasonry existed long before the first Grand Lodge was formed, there are absolutely no records extant, and we must have recourse to conjecture to ascertain how operative and Speculative Masonry finally converged. There is a record of prominent American citizens, one Jonathon Belcher, who subsequently became Governor of Massachusetts and New Hampshire and was certainly not an operative, who made a trip to England and was initiated there in 1704. Then there are various references in the second half of the 17th century to geometric masons. In this connection, a learned French Jesuit priest, Father Michel Riquet, gave a talk on Freemasonry earlier this year, in the course of which he mentioned the distinction between:

Domestic masons, the actual builders of houses, and geometric ones, those who speculate about geometry. (16.)

But above all, we must remember that Speculative Freemasonry before Grand Lodge was a movement of ideas, which do not necessarily, like the operative lodges, have any concrete form. It is quite likely that the speculatives did not even meet in lodges, but in private houses, taverns or coffee-houses. For revolutions are not made by intellectuals. Steam is essential to driving a railway engine, but neither a locomotive nor a permanent way can be built out of steam. We can however presume that, as the movement grew, its authors must have realised that, if they wished to ensure the perennality of their ideas, it was necessary to confer a practical structure on them. What was the obvious way to do this? The almost moribund corporative system of the operatives was there. It had the obvious advantage of having also derived from geometry and there was analogy between practical and speculative building. It was an easy matter to confer a halo of legend on the building trade and lend symbolic value to the working tools. A take-over was the answer and that is probably what actually happened. Surely, Brethren, this theory makes more sense than the lame and quite improbable one that the gentlemen of the period joined operative lodges out of dilettantism. Support is given to this in an article to appear in the forthcoming issue of *Quatuor Coronati Transactions*.

It was written by Bro. Lt. Col. Eric Ward and is entitled The Birth of Freemasonry . The following is the relevant extract:

It thus follows that at some stage in the masonic saga elements contributing to ritual development were borrowed from external sources for the dual purpose of providing allegory and tradition. So if apochryphal material drawn from remote ages could be so usefully absorbed by the system without overstraining credulity, then a similar but even more borrowing could have taken place when the new movement was in embryo in the 17th century. This was to give the Society the appearance of having a direct historical linkage with the English stone masons of the Middle Ages, although the factual evidence for such a link was really no stronger than that imagined by medieval masons as relating to their forerunners engaged in the building of the Temple of Jerusalem. In all of this, the one aspect of unquestionable time immemorial custom is the practice of tacking ancient roots on to a new idea and then proclaiming that the innovation is not new at all, but really of time immemorial antiquity. This process is of course much more convincing when the new idea has the appearance of natural progression from the old. (17.)

Brethren, I have tried to convince you that the principles we uphold today originated among the intellectuals of the 17th century and were not merely an evolution of operative masonic practice. Your reaction may quite conceivably be: What does it all matter. And that is precisely where the trouble lies, and is my reason for writing this Paper. It must be patent to you that Freemasonry today is losing its inspiration. Our membership is made up of a few enthusiasts surrounded by a host of luke-warm, apathetic Brethren, who are more interested in the social and worldly aspect of the Craft than in its spiritual essence.

Already there are ominous signs: declining attendance in our Lodges, lack of enthusiasm for the ritual work, and fewer candidates. We live today in a world that has changed and continues to change at a tremendous rate. If we continue to delude ourselves that we are merely the continuators of the craftsmen of yore and remain static instead of upholding the ever-valid, inspiring principles put forward by the thinking men of the 17th century, we are bound to wither and decay as time goes on. Brotherhood, tolerance and universal beneficence may not have the same relief against the background of this modern world as they had in the old days, but certain truths are valid for all time, and should inspire our conduct. Ever since the last World War our Western civilization has been groping for something positive to believe in. We have been AGAINST this, and AGAINST that, but what do we believe in? We are losing our moral fibre, we bear the stigma of decadence, we are the tail-end of civilization.

I was writing this lecture in June 1978 when the Russian dissident Soljenitsyn gave a lecture at Harvard University. He stated with great evidence that the Western countries have for some time manifested weakness and indecision, are undermined by corruption, bad conscience, the absence of civic sense, confusion, nostalgia, bewilderment and illusion. This, he said, was in direct contrast to the Eastern countries, who show firmness of will, who know exactly what they want, and are determined to get it by fair means or foul. He went on to say that the future is very glum, unless some moral and intellectual reform takes place.

Almost at the same time, a round-table attended by many prominent people took place at the Paris headquarters of UNESCO. The theme was: What sort of a world are we going to leave to our children? The consensus of opinion was very pessimistic, and the fear was expressed that our children will hold against us the lack of character shown by parents in these modern days, when children go their own sweet way with scarcely any parental control.

It has now become clear that, despite all the material benefits man has derived from the generalisation of the machine, despite the fact that we spend a great deal less time working than our ancestors, there has been over the centuries no improvement in the moral level of mankind.

The Church seems to have failed in its efforts to induce men to give priority to their spiritual needs over their material well-being. What can Freemasonry claim to have done in this connection? Can it provide the leadership that it so badly needed or have we become smug and complacent, merely a part of the herd of swine unconsciously hurtling towards destruction?

It is fairly well known in the outside world that Freemasonry is an institution promoting Brotherhood and Charity but it is also widely believed that it is a secret organisation. The fact is that it is not secret, but selective. Candidates for membership can only be admitted after certain criteria have been satisfied. There is absolutely no rule in the Craft that prevents its members from letting it be known that they are Masons. For why should we be afraid of people knowing that we belong to an organisation which upholds the principle of brotherhood of all good men and true, whatever their nationalities, beliefs or colour, and whose watchwords are Brotherhood, Tolerance and Benevolence.

Speculative Freemasonry is of moral and spiritual essence, and therefore it transcends the events taking place in the outside world. We cannot therefore indulge in publicity, nor do we want numbers just for the sake of numbers. What we do need is for each and every Mason to be penetrated by the inspiration of our 17th century forebears and, freed from the trammels of operative myths, prove to the world the happy and beneficial effects of our ancient institution, dedicated to the moral and spiritual improvement of mankind.

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