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GRESHAM'S BEQUEST TO SAMUEL PEPYS AND JOHN EVELYN

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In his vivid record of the Great Fire of London, Samuel Pepys noted on the 5th September 1666 how he walked into the City and found 'The Exchange a sad sight, nothing standing there of all the statues or pillars, but Sir Tho. Gresham's picture in the corner'.¹

By picture, he meant his portrait statue, which had been placed in the courtyard of the Royal Exchange, founded by Gresham just under a century earlier. Ranged around the courtyard were also statues of all the kings of England from Edward the Confessor to the current monarch, Charles II. The survival of just Gresham's statue was likewise observed by John Evelyn in an entry in his diary two days later. Describing people walking among the ruins as 'like men in some dismal desert' he noted how 'Sir Tho. Gresham's statue, tho' fallen from its nich in the Royal Exchange, remain'd entire, when all those of ye kings since ye Conquest were broken to pieces'.²

Did those wandering citizens, in their state of shock, fear this was a portent for the future? After all, it had been only six years since the Commonwealth had come to an end, and Charles restored to his throne. Perhaps they took comfort in the symbol of the survival of Gresham's statue presaging that the City would rise again like a phoenix. For the wealthy mercer, Sir Thomas, was still dominating the life of London with two bequests nearly a century after his death in 1579.

The first bequest was the Royal Exchange. In 1550 Gresham was the 'King's Merchant' or agent in Antwerp, becoming de facto England's ambassador in Europe. Impressed by the Antwerp bourse he resolved to create a similar trading centre in London. Purchase of land between Cornhill and Threadneedle Street was secured by subscriptions from the City's leading merchants and citizens, while Gresham built the bourse at his personal expense. Construction was completed at the end of 1567 and three years later it was given its royal title by Elizabeth I. The building consisted of a piazza where merchants could meet and do business, while shops were situated in the galleries.

Gresham's second bequest arose from the death of his only legitimate son, Richard, as a teenager in 1564. At the time Thomas was busy in the development of the Exchange, but he now had to think what to do with his vast fortune. In his will, drawn up in 1575, Gresham stipulated that the majority of his assets be divided between the Corporation of the City of London and the Worshipful Company of Mercers, to be used to fund a project that became Gresham College. Seven professors were to be appointed, drawn from the universities of Oxford and Cambridge. They were to lecture successively on each day of the week, giving their lectures in Latin and English 'for the gratuitous instruction of all those who chose to attend'. In addition to the traditional arts subjects of divinity, music, law and rhetoric, there were to be professors of astronomy, geometry and physics.

When Gresham's widow died in 1596, the College was founded in his extensive town house on Bishopsgate. Here the professors were to be housed - one of the provisions was that they should not be married - and paid the generous sum of £50 per annum for giving their lectures.

The College and its professors were to play an important part in the lives of the two great English diarists of the 17th century, John Evelyn and Samuel Pepys. These two men were to become close friends, but this was no foregone conclusion, for they were very different characters from very different backgrounds.



John Evelyn was born in 1620 at Wotton, a country house in Surrey, into a family that had made a considerable fortune from the monopoly in the manufacture of gunpowder. Fear of plague persuaded his parents to send him to his grandfather in Lewes in Sussex, and there he spent his childhood before going up to Oxford, followed by a brief stint at the Middle Temple. At the outbreak of the English civil war, Evelyn secured the King's permission to travel abroad.

During this period, he not only observed the great European gardens, initiating his passion for horticulture, but also studied various branches of science, or 'natural philosophy' as he would have known it. In Padua, for example, he studied human physiology with Johann Vesling, Professor of Anatomy, and viewed dissections in the university's anatomy theatre. In Paris he attended chemistry lessons given by Nicaise Le Fèvre. His reason for being in Paris was to marry the young daughter of the British Resident, Sir Richard Browne.

Once married, he returned to England in 1652, setting up home at Sayes Court in Deptford, an estate belonging to the Browne family. For the rest of the decade, Evelyn devoted himself to creating a famous garden, and corresponding with others interested in science. When he paid a visit to Oxford in 1654, the Warden of Wadham College, John Wilkins, showed him beehives designed by one of his students, Christopher Wren. Evelyn recorded in his diary how Wren had made these of glass, 'built like Castles & Palaces, & so ordered them one upon another, as to take the Hony without destroying the Bees'. He was shown other curiosities created by Wren, whom he described as 'that prodigious young scholar'.³

Samuel Pepys could not have come from a more different background. He was born in 1633 in Salisbury Court in London, in a house next to St Bride's Church, Fleet Street. His father was a tailor catering for the nearby legal profession, his mother had been a laundrymaid before her marriage. There was very little money in his immediate family, but fortunately Samuel had more influential relations who must have spotted that he was an intelligent boy with an enquiring mind. He was therefore sent to St Paul's, one of the best educational establishments in the country. Pepys went on to study at Magdalene College in Cambridge, enjoying his time there and doing well in his studies. Back in London in the 1650s, he secured a position as clerk to his cousin, Edward Montague, a rising star in the Commonwealth period. And at the Restoration of Charles II in 1660, Montague helped Pepys become Clerk of the Acts at the Navy Board.

He was very musical, and was also fascinated by science, having received rudimentary instruction in the four subjects of the quadrivium, mathematics, geometry, astronomy and music, while at Cambridge. In a letter to his cousin Montague in 1656, he referred to them both attending experiments in magnetism with 'Sir W.P'. So, I was surprised when I read in his diary for 1661, when Pepys went to a meeting at Gresham College with the instrument maker Ralph Greatorex, he described this as his first visit there.

On the face of it, the young, curious Pepys would seem a natural attender of the Gresham lectures, on music, mathematics and astronomy. But the lectures established as a result of Sir Thomas Gresham's generous bequest were experiencing difficult times. As early as 1613, it was noted that the audiences for some of the lectures were tiny. A few years later, the playwright Ben Jonson poked fun, albeit in a gentle manner, on the College in his *Staple of News*, describing it as a school for canting, the specialised terms used by particular social groups. Dr Almanac was to talk on astrology, while a character called Shirfield should lecture on the military arts, such as carving meat and assaulting custard pies.

In a tract published in 1647, 'Sir Thomas Gresham his Ghost', the spirit of the financier walked the streets of London at night to mourn the fact that the professors were not fulfilling their obligations, while the authorities were accused of using the funds designated to the College for other purposes. Two years later a proposal for reform was drawn up: the chairs of divinity, law and rhetoric should be done away with as they were no longer of use to the citizens of London, who could get the information provided by their lectures just as easily from books, or from sermons in the case of divinity. Given the practical nature of the remaining four disciplines, the teaching should be directed towards experiment and utility.

These ambitious reforms were not implemented, although when Christopher Wren, 'that prodigious young scholar' became Gresham Professor of Astronomy in the summer of 1657, his inaugural lecture propounded



considerations about experimental philosophy and particularly astronomy that convinced his audience there were exciting times ahead. A year later, with the sudden death of Oliver Cromwell, political changes unfolded with extraordinary rapidity, and the fortunes of Gresham College were set upon a different course.

After Charles II had been restored to his throne, a meeting was held at the College to create a new society 'for the promotion of Natural Knowledge'. John Evelyn was instrumental in getting the King interested in what became in 1662 the Royal Society, designing its coat of arms with the motto 'Nullis in Verba', take nobody's word for it from the Epistles of Horace, particularly appropriate for an institution whose primary motive was knowledge through practical experiment. He also provided the idea for the image to appear on the frontispiece of the history of the Society written in 1667 by Thomas Sprat. This depicted the bust of Charles II being crowned by Fame, with Lord Brouncker, the Society's first President (and Pepys's naval superior) on the left, and Francis Bacon on the right. Bacon had advocated the pursuit of knowledge through enquiry and experiment, so that he was regarded by Evelyn and his contemporaries as 'the godfather' of their new society.

In addition to the regular meetings at Gresham College, experiments were held in different parts of the city. Evelyn, for example, went off to a private garden near St James's Park to satisfy the King's curiosity about *mimosa pudica*. The sensitive plant was tested not only by being touched, but also with the application of nitric acid and the use of a glass to intensify the sun's rays. An experiment with an 'arched vial' to sound strings with a keyboard was held at London's Post Office. Both Evelyn and Pepys recorded this occasion in their diaries in 1664. The latter, with his musical ear, noted with disapproval the awful sound that was produced by this automaton.

When Pepys was elected a fellow in 1665, the meeting that day at Gresham College witnessed an experiment conducted by Robert Hooke, the Society's Curator of Experiments. As Pepys noted in his diary the theme was 'the nature of fire, and how it goes out in a place where the ayre is not free' using an air pump or 'pneumatic engine'. He went on to say of Hooke that he was 'the most, and promises the least, of any man in the world that I ever saw'.⁴ This was a perceptive observation, for Hooke, like Pepys, came from a comparatively humble background, and both men had benefited from an excellent education. But while Pepys grew in confidence as he gained status, Hooke was thin-skinned and difficult. He was to become embroiled in all kinds of arguments, most famously with Isaac Newton over the source of gravity. Hooke for his part recognised that Pepys understood his nature, writing in his diary how he received kindness from him.

Alongside practical experiments, fellows devoted time to the receipt, reading and distribution of written discourses, and from 1665 these were published in a journal, *Philosophical Transactions*, circulating the Society's work in English throughout Europe and in North America. It is still going today. By the terms of the royal charter, the Society could also license books, a way of freeing the work of fellows from potential censorship by the Church. The first of these was written by John Evelyn and published in 1664. *Sylva or a Discourse of Forest Trees and the Propagation of Timber* tackled the shortage of wood for the navy by proposing that landowners should plant trees on their estates. Such planting became the height of horticultural fashion, and Evelyn's book an important volume to have in a gentleman's library.

The following year saw the publication by the Society of Robert Hooke's *Micrographia*, which as the subtitle explained, provided 'some physiological descriptions of minute bodies made by magnifying glasses, with observations and inquiries thereupon'. For the first time readers could see images of the tiniest creatures, such as the louse, skilfully drawn by Hooke, who oversaw the etchings for the book. The project caused a sensation. Pepys not only bought the book, but also a microscope and after some initial problems to do with sources of light, was able to write in triumph 'most excellently things appeared indeed, beyond imagination'.⁵

But, just as Gresham College in its initial form had hit difficulties, so the Royal Society lost some of its sparkle. It became beset by financial problems, with falling attendance and unpaid subscriptions. The King, who it was hoped would provide funding, failed to do so, and moreover had adopted a cavalier attitude towards the Society. Pepys was present at a meeting at Whitehall when the King mocked the fellows 'for spending time only in weighing of ayre and doing nothing else since they sat'.⁶



The Restoration dramatist Thomas Shadwell also began to make digs at the Royal Society in his plays, in particular in *The Virtuoso*, first performed in 1676. The play's principal character is Sir Nicholas Gimcrack, a 'rare mechanic philosopher' who presents a whole range of experiments, including the transfusion of blood, with Shadwell suggesting that if that of an ass was transfused to a virtuoso, there would be no discernible difference.

Robert Hooke, always thin skinned, considered the satire was directed straight at him, noting in his diary after attending a performance, 'Damned Dogs, *Vindica me Deus*. People almost pointed.'⁷ But there were references in the play that more appropriately applied to other fellows. Sir Formal Trifle, 'a florid coxcomb' who indulges in elaborate and abstruse language, reflected a particular trait of John Evelyn, and he suspected this, for when a friend questioned him about the play, he responded sharply. In a letter he wrote 'I have learned more profitable and useful things from some hours conversation in that Meeting [of the Royal Society] than ever I have done from the quintessence and sublimest rapture of those empty casks whose noise you admire at court'.⁸

In fact, Evelyn's attendance had also been falling off, partly because he recognised that the Society was failing to fulfil its ambitious early programme. In the preface to the third edition of *Sylva*, published in 1679, he made an impassioned plea for the Royal Society to be taken seriously and supported. And it was Samuel Pepys who stepped up to the plate and became the Society's President in 1686. Although he had never given papers, Pepys had served on the Society's council for many years and was known for his administrative skills.

The problem of subscription arrears was tackled by ordering the names of all miscreants to be omitted from the next list unless they paid up. A written statement of the cash position was demanded, and he prepared orders for the Society's clerks, based on his experience at training clerks at the Navy Office. These clerks had to be unmarried and childless, with a good knowledge of English, French and Latin, together with some mathematics. They must keep the minutes, not on loose papers, but in books with proper indices, and in return were paid a good annual salary of £50.

One of the ways that the Society had got itself into trouble was over publishing. With the two titles published in the 1660s, Evelyn's *Sylva* and Hooke's *Micrographia*, the Society had used its imprimatur along with guaranteed subscription to get the publishers to take the financial risks. But in the early 1680s the Society had agreed to fund the entire publication of a history of fish by Francis Willughby. When it was published, it turned out to a financial disaster, as well as being considered academically lightweight. The decision to fund Willughby's unfortunate book was made before Pepys became President, but he helped mitigate the situation by contributing the substantial sum of £63 to pay for the plates. While he was President, Pepys ordered the printing of a work with rather a different outcome, Isaac Newton's *Principia Mathematica*. Pepys was not present for subsequent meetings as the summer of 1685 proved extremely busy with the new King, James II, demanding his entire attention dealing with naval matters. His name, however, appears on the title page of the ground-breaking book on the laws of motion and universal gravitation, and he was very proud to be associated with it.

The energy expended by Samuel Pepys is extraordinary, for his health was always problematic. As a young man he had undergone the removal of a stone from his bladder, an excruciatingly painful operation without anaesthetic. It was a miracle that he survived, and he had recurrent problems thereafter. In the 1680s, he became gradually more housebound, and some of the meetings of the Royal Society were held at his home in York Buildings, off the Strand. Informal dinners were also held on a Saturday, known as 'Tripe Day' as this was one of his favourite dishes. Those attending the dinners were described by Evelyn as 'deipnosophists', a term derived from the title of a classical Greek work in which a group of learned men discussed cultural subjects over dinner. The letters between Pepys and Evelyn at this period make clear how important these occasions were to them.

Such meetings inevitably came to an end when Pepys retired to what Evelyn described as 'paradisiacal Clapham', But his devotion to the tenets of the Royal Society is demonstrated by the autopsy carried out at his death in May 1703. This was done at the request of Pepys's nephew, but probably had been stipulated by his uncle, in the hope that his chequered medical history might provide significant evidence for physicians. One of the doctors who performed the autopsy was Hans Sloane, a fellow of the Royal Society, while the other, by a twist of fate, was John Shadwell, son of the dramatist who had poked so much fun at the institution in his plays.



Evelyn continued to attend formal meetings of the Royal Society. In 1703 he witnessed Isaac Newton's assumption to the presidency, a post that he held for twenty years. The financial crises that had beset the Society in the 1670s and '80s were now past, and the future of the Society and of Gresham College in the new century had been assured.

John Evelyn and Samuel Pepys had learnt much from the bequest of Thomas Gresham, and now they, as loyal and long-serving fellows, had contributed in no small measure to this survival.

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¹ *The Diary of Samuel Pepys*, ed Robert Latham and William Matthews, 12 vols, Bell & Hyman, 1970-83, vol vii, p.276

² *The Diary of John Evelyn*, ed. E.S.de Beer, 6 vols, Clarendon Press, 1955, vol iii, p.460

³ *Ibid*, vol iii, pp.110-1

⁴ *Pepys Diary*, vol.vi, pp 36-7

⁵ *Ibid*, vol.vii, p.226

⁶ *Ibid*, vol.v, pp.32-3

⁷ *The Diary of Robert Hooke, 1672-80*, ed H.W.Robinson and W.Adams, Taylor & Francis, 1935, p.235

⁸ BL Add.Ms 78298, 18 July 1676