‘All the varieties of Nature’s works under ground’: the Geological Imagination of Alexander Pope —

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Introduction

In 1719, the English poet Alexander Pope settled down on the left bank of the River Thames at Twickenham. The land he rented was separated by a highway running eastwards towards London, with a house on the river side and a garden on the other.[1] To allow himself to enter the garden from the house without having to cross the road, Pope dug a tunnel, connecting the ground level of the house to the garden. Along with working on a newly designed Palladian house and garden, Pope began decorating the tunnel or subterranean passage as a grotto.[2] In September 1725, the poet was congratulated by Jonathan Swift for converting ‘a blunder into a beauty which is a Piece of Ars Poetica’.[3] Earlier in June that year, Pope had described the grotto in rare detail in a letter to Edward Blount: ‘I there found a Spring of the clearest Water, which falls in a perpetual Rill, that echoes thro’ the Cavern day and night.’[4] The watery grotto was also an optical cave, with mirrors being installed at various places and a lamp hung from the ceiling of the central chamber.[5]

In 1740, about 15 years later, following his visits to several quarries and mines in Bristol and Bath owned by the entrepreneur Ralph Allen, a major transformation of the grotto took place.[6] Using large amounts of minerals bequeathed by friends, and especially the Cornish antiquary, naturalist and geologist William Borlase, Pope redesigned his grotto. Under Borlase’s instruction, the position and direction of the minerals in the grotto were placed in the same way as those in the fissures through strata in an actual mine. The grotto, which initially represented a cryptoporticus, now looked ‘roughly hew’d out of Rocks and Beds of mineral strata’.[7] In his own words, Pope had introduced into the grotto ‘all the varieties of Nature’s works under ground – Spars, Minerals & Marbles’, so that the place was now ‘a Study for Virtuosi, & a Scene for contemplation’.[8] He had, Borlase was to remark, ‘most strictly followed Nature’.[9]

This transformation may be observed in two drawings by Pope’s hand. The first drawing (Fig.1) is an ink sketch dated 14 January 1740. Intended to solicit Borlase’s advice on the envisioned elaboration, it shows the grotto’s plan as of that date. The second drawing (Fig.2), dated 11 months later, from December of the same year, shows the plan of the grotto after the transformation. Both plans have previously drawn the attention of scholars, such as Benjamin Boyce, Anthony Willson, and J. Vanessa Lyon.[10] Comparing the two, the changes to the shapes of the rooms in the grotto are evident: the walls in the earlier plan consisted of straight lines and formed geometrical spaces, while those in the latter were composed of irregular curves and amorphous forms. The initial regularity is further confirmed by a much earlier drawing (Fig.3), dating from 1725–30, by the landscape garden designer and Pope’s close friend, William Kent. Kent’s drawing, also an ink sketch, shows Pope sitting at a desk by a lamp in the centre of the chamber – around him is an arcaded space where uniform vaults spring from regularly spaced, rusticated pilasters.[11]

Whilst it may appear that the grotto in its earlier stage conformed to an architectural order, which embodied the classical and Renaissance concept of a universal, natural order identified with reason, a closer examination of the use of rustication in the grotto at this early stage suggests that an interest in ‘the work of nature’ – a phrase Sebastiano Serlio used to define rustic stone work in the *Fourth Book of Architecture* of 1537 – was already present.[12]

This connection with ‘the work of nature’ in the earlier grotto is rarely discussed in relation to geology, the charm of which, scholars have maintained, was discovered by the poet only somewhere between 1725 and 1740.[13] Boyce, for example, in his canonical research on the transformation of the designs of the grotto from 1739–40, claimed:

> [the grotto used to be] suggestive of the poetic grottoes imagined by Virgil and various Renaissance authors. It was a poet’s plaything. But now in Bristol and Bath, with rocks and talks of rocks around him, Pope new-conceived his grotto as a cavernous place very much like an actual mine and an actual quarry.[14]

Such on-site experiences of quarries and mines, which were becoming more available in England with the growth of the mining industry, would have served as catalysts for Pope’s transformation of the grotto to ‘strictly follow Nature’. However, favouring ‘an actual mine’, Boyce and others seem to have understood the ‘Nature’ which the poet aimed to follow to be the objective, natural world as construed by modern science. Yet the concept of nature in 18th-century Britain was as ambivalent and multifaceted as in earlier times. Among many connotations, the inexplicable forces of nature as substances (like water and fire) were of paramount interest to hermetic chemists, polymaths, artists and poets of the Renaissance, who sought to create art as a second nature.[15] Both Ovid’s *Metamorphoses* as a popular theme of the 16th-century grottoes and Bernard Palissy’s ‘rustic style’ conveyed the hermetic notion of nature in terms of endless change and processes of decay and growth.[16] Whilst the spectacular successes of mechanical philosophy dominated 17th-century scientific thinking, the heterogeneous, hermetic notion of nature along with Neoplatonist philosophy continued to find English adepts such as Inigo Jones, John Dryden and Pope.[17] Laying out his grotto as a ‘poet’s plaything’ and in a ‘natural taste’ from its conception, Pope was not so much initiating a revolutionary genre of naturalism, as most garden historians have long held, as further developing the earlier 16th-century tradition that already sought to imitate nature as processes.[18] Whilst he was indeed inspired by his on-site subterranean experiences in Bristol and Bath, this does not imply

Fig.1 Alexander Pope, Plan of the Twickenham Grotto, placed on a letter from William Oliver to William Borlase dated January 1740. Courtesy of the Morrab Library, Penzance.

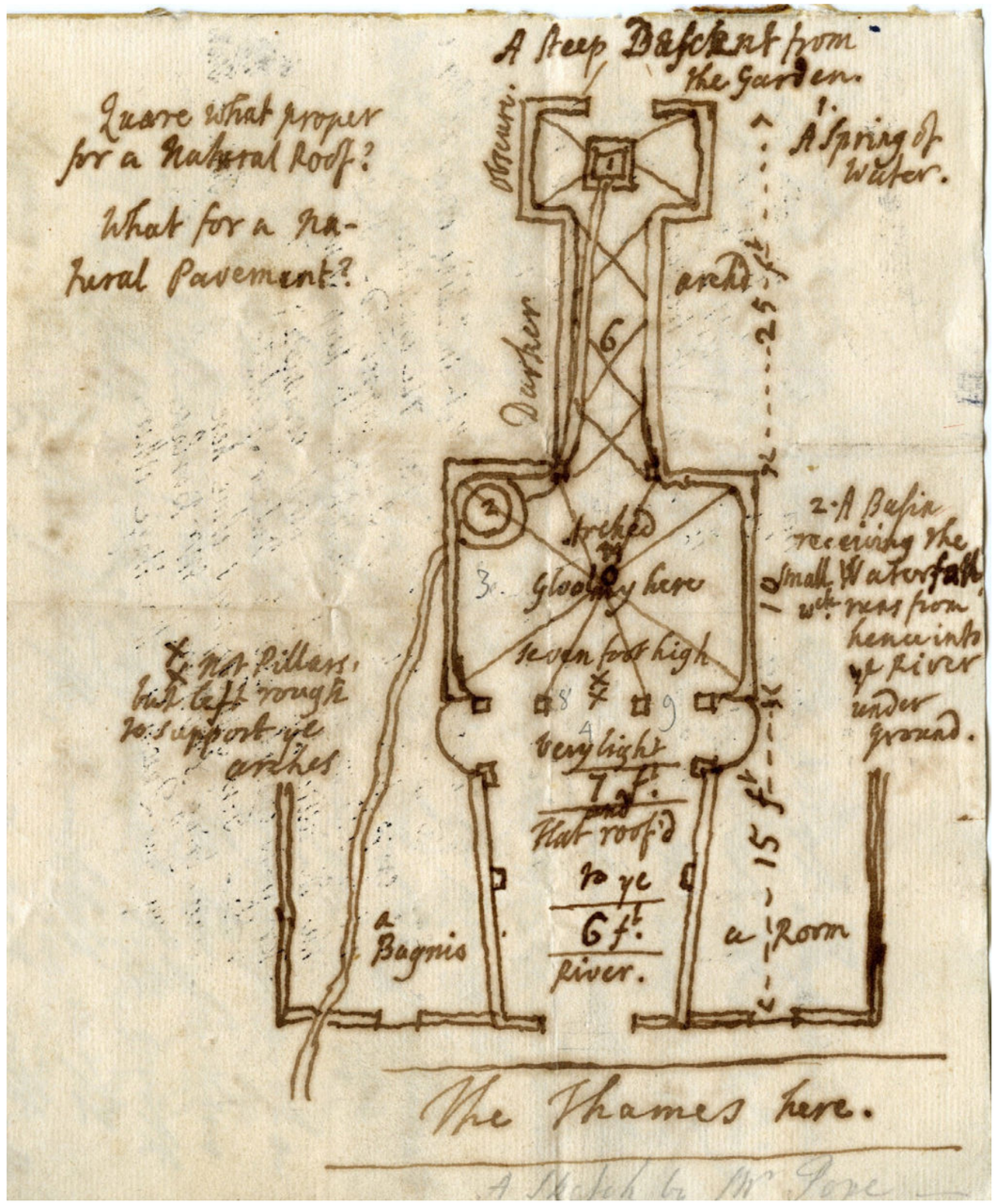


Fig.2 Alexander Pope, Plan of the Grotto, dated December 1740. Reproduced in Robert Carruthers, *The Life of Alexander Pope* (London: Bohn, 1857). Courtesy Forum Library, University of Exeter.

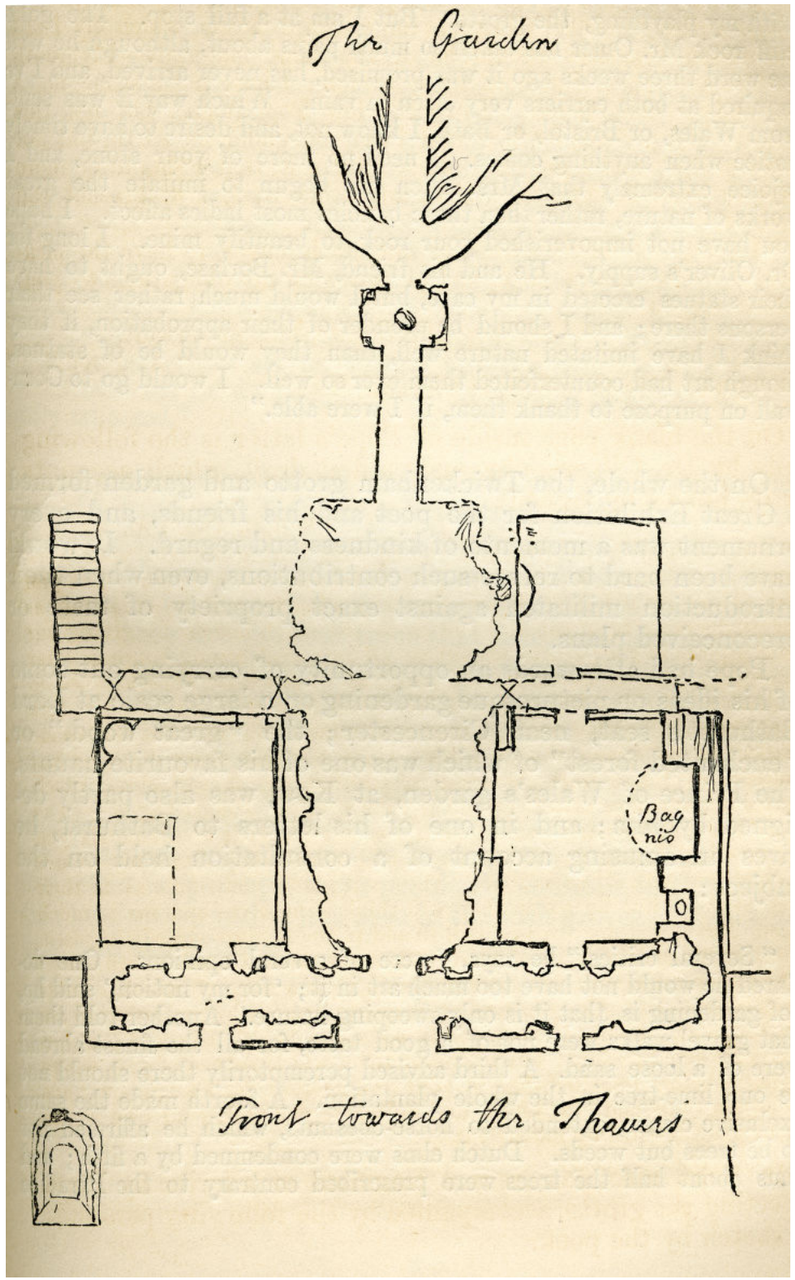


Fig.3 William Kent, *Alexander Pope in His Grotto*, *c.*1725–30. Devonshire Collection, Chatsworth. Reproduced by permission of Chatsworth Settlement Trustees.

that the existing preoccupations related to earthly matters – i.e., the operations of underground water and fire (lamp and light) – that informed the poet's grotto in 1725 were simply dispensed with. These early themes, as we shall show, continued after 1739 into the later stage.

It is important to appreciate that Pope's grotto, with its marvels of waterworks and mineral specimens as well as optical contrivances, maintained, as John Dixon Hunt points out, the old identity of garden grotto and laboratory.[19] This identity went hand in hand with the idea of mountain caverns or underground caves, since the Renaissance grottoes often complied with images of the interior of the earth, while the designs and installations within them habitually exemplified the workings of nature, or the earth, as then understood.[20] Renaissance grottoes were important sites of experiment and the epistemic display of earthly matters that encompassed hydrology, alchemy, metallurgy, pottery and the collection of natural curiosities. These intersecting traditions of grotto-making, mythology and natural sciences were evident in Britain as much as on the continent throughout the 17th century and were manifested in Pope's grotto.[21] However, when exploring Pope's interest in geology, previous scholars have focused only on the later stage of the grotto as a mine,[22] without considering such themes as hydrology, alchemy, and metallurgy, which were present from the beginning.

Scholars' dismissal of Pope's interest in earth matters during the earlier stage of the grotto reflects a kind of thinking that asserts a rigid boundary between the early modern period and the era of modern geology. This same 'modernist' thinking also leads to the common understanding of the later stage of the grotto as a mine representing an allegedly progressive aesthetic of the irregular and the natural, which replaces a Renaissance classicism often identified, somewhat reductively, as something static, outside time. To apply such an approach, with its attendant expectations, to historical studies may be anachronistic, even more so when it is concerned with a figure like Pope who was a trenchant satirist of the 'moderns'. Pope was committed to the idea of following nature throughout his life: 'First follow Nature … At once the *Source*, and *End*'.[23] Although he refused to define 'Nature', it is likely that his notion of nature was shaped by the Renaissance Hermetic-Neoplatonic system in which the universe is one – earth, planets, suns – all in motion and filled with changes.[24] As John Dryden articulated it in his translation of Ovid's *Metamorphoses*:

> …that Nature knows
> No steadfast Station, but, or Ebbs, or Flows:
> Ever in motion; she destroys her old,
> And casts new Figures in another Mold.[25]

Such a dynamic concept of nature was already embodied in Serlio's rustication, the poets of the Pleiades and the 'rustic' style of Renaissance grottoes.[26] Pierre de Ronsard's '*les piliers, rustiques | qui effacent l'honneur des colonnes antiques*' was echoed by Palissy's prescription for a rustic grotto (1563) – the walls of terracotta made to simulate the roughness of sharp stone surfaces, and the decomposed herm-pilasters corroded through time.[27] With its rusticated pilasters, its geological specimens, and the 'natural taste', Pope's grotto, rightly described as a 'Palissy-like object' by Joseph Rykwert, is aligned with this tradition of naturalism.[28]

The Neoplatonic view of the universe received new stimulus in the 17th century, namely, from Athanasius Kircher's concept of 'geocosm', which served to symbolise both the earth as an isolated planet and the whole universe centred upon it.[29] For Kircher, the terrestrial sphere was no longer a realm associated with corruption – rather, the endless duration and perpetuity of natural operations of subterranean fire

and water in the earth formed an equilibrium of opposites by which God established a cosmos out of the chaos of the elements.[30] Ingeniously blending a diverse range of approaches – the animistic, the (al-)chemical, the mechanical, and the scriptural – Kircher's geocosm, described in his influential *Mundus Subterraneus* (1665),[31] was an inspiration not only for contemporary theorists such as Nicolas Steno and Robert Boyle, but also for later antiquarian-naturalists such as William Borlase and William Stukeley, all of whom found wanting the mechanical Newtonian view of nature as passive matter.

This process of natural operations was held to be analogous with the processes of the imagination, an aspect of the doctrine of microcosm-macrocosm correspondence that survived through the 18th century, and covertly evolved into a view of dynamism and empathy between humans and nature that has since been associated with Romanticism. Pope's grotto grew with these changes. From Plato's cave to Locke's 'dark room' and to an antiquarian's cabinet, the grotto as an image of the mind and the world continuously attracted scholars' attention.[32] Yet few of them addressed the dynamic concept of nature underpinning the poet's cosmic view: '*Nature moves*, and *Rapture warms the Mind*',[33] as Pope exclaimed in 1711.

Bridging the gap between the early modern and 18th-century inquiries on earth matters, I want in this paper to explore the poet's consistent, interlocked interests in the poetic processes of imagination and the material processes of nature's (the earth's) workings. Whether a classical nymphaeum or an imitation of a mine, Pope's grotto, always in formation, is a demonstration of the natural operations of subterranean water and fire, the work of the divine artist, as well as the processes of the creative imagination. The themes of subterranean water and fire, which are reflected in Pope's grotto both before and after the transformation, were present through what he described as 'a perpetual rill' (the watercourse) and 'latent Metals' that 'innocently glow'. I will consider each of these in detail below.

'A perpetual Rill': the watercourse and the hydrological cycle

Pope highlighted in his 1725 letter to Blount the theme of water in the grotto – 'an Aquatic Idea of the whole Place'.[34] This would refer to the spring he discovered there, 'a Spring of the clearest Water, which falls in a perpetual Rill'. He also opined that the place 'wants nothing to compleat it but a good Statue with an Inscription':[35]

> Nymph of the Grot, these sacred Springs I keep,
> And to the Murmur of these Waters sleep;
> Whoe'er thou art, ah gently tread the Cave,
> Ah Bathe in silence, or in silence lave.

This 'good Statue' would have represented the sculpture of a reclining female – then believed to be Cleopatra – installed as part of a rustic fountain in the Belvedere statue court at the Vatican.[36] And although the statue does not appear ever to have been installed at Twickenham, one may assume that the 'Aquatic Idea' took the form of the waterworks that Pope did put in place.

In the earlier plan of January 1740 (Fig.1), a watercourse is clearly visible. The spring that Pope discovered is shown rising from the floor of the lobby at the garden end of the tunnel, marked with '1' and the annotation 'A Spring of Water'. It is shown running along the floor and discharging into a circular basin, marked '2', on the rear left-hand side of the grotto itself, with the annotation: 'A Basin receiving the small waterfall, which runs from hence into the river underground'. The water then disappeared through the wall via an overflow pipe and crossed in a conduit beneath the floor of the left-hand chamber (described as 'a Bagnio'[37]) that led out of the building and discharged into the river, which is in turn indicated by two lines and the annotation 'The Thames here'.

In the plan of December 1740 (Fig.2), the watercourse is no longer depicted so explicitly, although the position of the spring is clearly marked. The course of the spring that originally ran underground below the left-hand chamber may have changed to run below the right-hand one because the 'Bagnio' has been moved to here. At the bottom of the plan is the annotation 'Front towards the Thames'.

Pope's emphasis on a watercourse originating in the cave and flowing to the Thames recalls Renaissance grottoes and theatre design where hydrology was a key element. In Samuel Daniel's *Tethys' Festival*, performed in 1610 to celebrate the investiture of Prince Henry as Prince of Wales, Inigo Jones's design staged the physical embodiments of the greatest English waterways, the very life-blood of royal hegemony. Appearing in the grotto-like cave, the rivers symbolically returned to the sea via underground channels, thus enshrining the Renaissance geological and hydrological concepts of the natural circulation of water in relation to the great ocean.[38] Testimony to this sea-to-land, hydrological cycle is found in Ecclesiastes 1:7: 'All the rivers run into the sea; yet the sea is not full; unto the place from whence the rivers came, thither they return again.'

Pope's earlier engagement with the hydrological cycle, it may be said, took a mythological form. In *Windsor-Forest* (1713), the nymph Lodona's story re-performed the Ovidian myth of the nymph Arethusa, who made her escape from the pursuit of the river Alpheus through an undersea passage, before her regeneration as a spring at a new place, Ortygia. The happy discovery of the spring in the subterranean passage later at Twickenham would no doubt not only materialise the Ovidian myth for Pope, but also confirm the contemporary thesis of a compound origin of fresh water and of hidden passages – 'dark and mysterious paths' – connecting oceans and mountains.[39]

In accordance with scripture, Kircher's *Mundus Subterraneus* proposed that there are hidden channels within the earth by which sea water migrates up to the top of mountains and issues forth as spring water (Fig.4).[40] This sea-to-land theory continued to hold in the first half of the 18th century, notwithstanding the influential evaporation and precipitation theory published by Edmond Halley in 1687 and 1691.[41] Robert Plot, for example, cited the same passage from Ecclesiastes in his *Natural History of Stafford-Shire* (1686) to explain the origin of springs.[42] The garden designer Stephen Switzer, in his *An Introduction to a General System of Hydrostaticks and Hydraulicks* (1729), in which Pope's garden was praised, concluded that sea water travelled 'through all the permeable parts and subterraneous channels of the earth, in a due circulation and ascent … through those veins, channels, and ducts of the earth, till it breaks out of the sides of the hills, and traverses its way, even to its return into the sea again.'[43]

The very name of the spring – 'Nymph of the Grot' – that Pope gives to the genius of the place expressly conveys the idea that the origins of springs are deep in the earth. Noting that the spring has the purest water and 'falls in a perpetual Rill', Pope might have in mind the belief of William Derham, a fellow of the Royal Society, that terrestrial water originated in the sea because some springs flowed perennially at the same rate, exhibiting no perceptible correlation with variations in precipitation.[44]

The imagery of a perpetual spring in a cave is of course familiar from Homeric mythology, Pope's model of nature. The verses depicting Calypso's grotto in Pope's translation of the *Odyssey*, Book V, for example, might well have inspired his conception of the Twickenham grotto:

> Four limpid fountains from the clefts distill,
> And ev'ry fountain pours a sev'ral rill,
> In mazy windings wand'ring down the hill.[45]

Or, even more vivid, is the line ‘Perpetual water o’er the pavement glide’, referring to the naiads’ grotto in Book XIII.[46] A visual similarity between these Homeric caves and the Twickenham grotto, as illustrated by a frontispiece for Pope’s *Odyssey* showing Calypso’s cave, has been noted by Maynard Mack[47] (Figs 5, 6). But Pope’s imitation goes beyond appearances. The ‘perpetual Rill’ in the cave, epitomising the extraordinary animism of nature in Pope’s poems, is conceived as vital fluid flowing through the planet as a microcosm. Pope was familiar with the allegorical exegesis by the Neoplatonist philosopher Porphyry of the naiads’ grotto in the *Odyssey* – a watery cavern – as an image of the world, and the naiads as the powers presiding over the generative water nourished by a divine spirit.[48] In his notes on the *Odyssey*, Pope remarked that ‘water is one of the great principles of generation’,[49] a major theme of grottoes in classical and Renaissance gardens representing the hydrological cycle – as seen in the aforementioned example of *Tethys’ Festival* – and one alive and well in the early 18th century.[50] The course of the spring water – emerging from the subterranean passage, the ‘dark cavern’, through the poetically conceived watercourse, flowing into the Thames and to the sea – thus implies not only the natural operations of subterranean water in a circulatory motion, but also the process of (re-)generation in contexts that are cultural or personal.

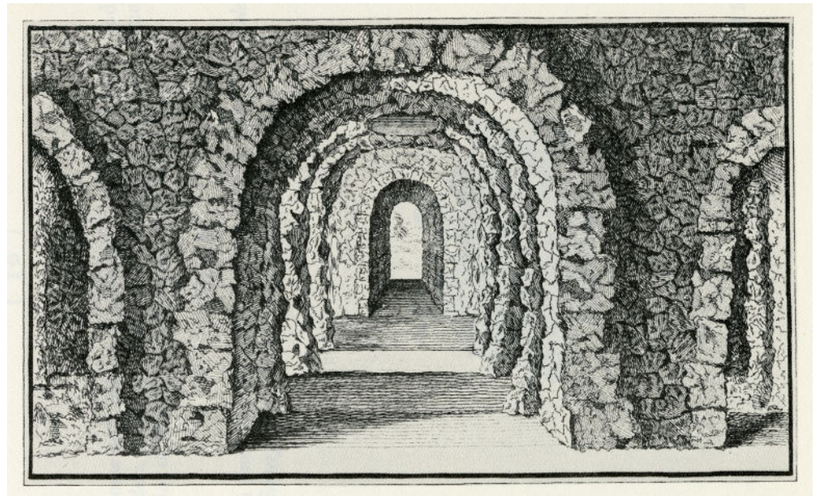
In recalling the ancient inscription *Hujus Nympha Loci*, Pope would have known that the lines were popularised by the Renaissance cult of the nymph celebrated by humanist circles at the court of Pope Leo X following the tradition revived in 15th-century Neoplatonic academies.[51] The Renaissance humanist cult’s aim of regenerating classical culture, and their identification with the nymph as the deity of spiritual creativity and natural fecundity, were shared by Pope himself. Pope had earlier praised Leo X, a patron to the humanist scholars and artists, for his reviving of Rome,[52] and told how his own imagination ‘brings the vanish’d piles to view, | And builds imaginary *Rome* a-new’.[53] Pope had expressly hoped that Queen Anne’s reign would be a golden age like Leo’s, but he was disillusioned following her death. With the ascent of George I in 1714, Pope and his family endured considerable suffering for their Catholic faith – the loss of his childhood home in Windsor Forest and the ill fate of family friends and acquaintances were paramount. In ways resonating with the nymph Lodona-Arethusa’s fate, Pope found expressions of the personal and political tragedy in images of earthly catastrophe. When first moving to Twickenham, he marvelled at the scene of the flooding Thames and described his house as being surrounded by water as Noah’s ark.[54] The shells, flints and iron ores with which he decorated the garden entrance of the grotto may be read as reminders of the Deluge and inundations, a theme that featured in contemporary geological writings. One of these, John Woodward’s *An Essay toward a Natural History of the Earth* (1695),[55] proposed that all the rocks of the earth were dissolved by the Deluge. This was refuted by Pope’s Scriblerian friend John Arbuthnot,[56] and the unfortunate Dr Woodward found himself satirised in the play *Three Hours after Marriage* (1717), written by Pope, Arbuthnot and John Gay. The operation of the subterranean water in Pope’s vision, thus, was not a simple exemplar of catastrophic damage – but rather, as in Kircher’s geocosm, the chthonic waterways and springs nourished the earth and made it fertile.[57]

The hydrological cycle may also be a metaphor of Pope’s own poetic imagination conforming with the Neoplatonist principle of regeneration following destruction, symbolised by the sleeping nymph who allegorised the awakening of the life of the soul.[58] Pope found the spring in the grotto. For him it was the fountain of the deep, recalling the Castalian fountain, the origin of poetry on Mount Parnassus. Its pure water, or ‘Castalian dews’,[59] as Pope’s friends called it, flowed into the Thames, which Pope likened to both the river Meles at Smyrna and the river Mincius near

Fig.4 Illustration in Athanasius Kircher, *Mundus Subterraneus* (Amsterdam, 1665), showing the underground source of rivers and springs from the sea. Public domain, via Wikipedia Commons, https://commons.wikimedia.org/wiki/File:Kircher_Mundus_Subterraneus_origin_of_rivers.jpg [accessed 17.10.22].

Fig.5 William Kent, Headpiece of Book V of Pope's quarto *Odyssey*, showing the grotto of Calypso. Reproduced in Alexander Pope, *The Odyssey of Homer, Book I–XII*, in *The Twickenham Edition of Poems of Alexander Pope, IX*, ed. Maynard Mack (London: Methuen & Co., 1967). Courtesy Forum Library, University of Exeter.

Fig.6 John Serle, 'A Perspective View of the Grotto', in his *A Plan of Mr. Pope's Garden* (London: printed for R. Dodsley, 1745). Reproduced in *A plan of Mr. Pope's garden: Gardens at Richmond, Kew, and environs*, ed. John Dixon Hunt (New York: Garland Publishing, 1982). Courtesy Forum Library, University of Exeter.



Mantua,[60] the birthplaces of Homer and Virgil respectively. With his material imagination, this watery purification process was equivalent to that which had inspired the greatest poetic imaginations of ancient Greece and Rome. His own perpetual rill might work to purify the morals of his country which, from his Tory Opposition point of view, had degenerated under the government of Robert Walpole during the early Hanoverian reign.

'Latent Metals innocently glow': the natural production of minerals

As already noted, previous scholarship has emphasised Pope's post-1739 commitment to 'strictly follow[ing] Nature' – as seen in the natural form of pavement and ceiling, the sides of the grotto imitating strata of rude marbles, and lodes of metal running between the east–west fissures.[61] Scholars have thus concluded that the grotto now revealed 'the earth's deep unprecedented realism'.[62] However, what has been less recognised is Pope's sustained interest in the natural growth or production of minerals from subterranean water and fire and its relation to his creative imagination.

In June 1740, writing to William Borlase about the progress of the transformation, Pope described the stalactites above the spring which is like a 'little well', and 'Spars and Cornish Diamonds on the Edges [of the spring], with a perpetual drip of water into it from pipes above among the Icicles'.[63] Three months later, Pope spoke about 'two Rocks of Cornish Diamonds & Plymouth Marbles', over which three falls of water broke naturally.[64] This integration of waterworks and minerals is further confirmed by an anonymous Newcastle journalist's report in 1748, four years after Pope's death:

> Here [the spring of water] gurgles in a gushing Rill thro' fractur'd Ores and Flints; there it drips from depending Moss and Shells; here again, washing Beds of Sand and Pebbles, it rolls in Silver Streamlets…[65]

One might think that this integration of waterworks and minerals was an imitation of the mines, where such scenes were not uncommon. Indeed, letters from Borlase to Pope had detailed descriptions of such scenes in Cornish mines: 'In our mines the water issues from imperceptible crevices, here falls down the smooth sides of a Rock, there sprinkles it selfe from the Rugged Stones on every hand.'[66] However, as already noted, nature was not simply an objective, natural world for Pope; at the core of its multifarious connotations was a process of natural growth or production and decay, a process analogous to the poetic imagination. Inheriting ancient accounts, Renaissance natural lore held that the creative activity of water resided in the way it deposited, in its own fashion, 'the seeds of life', and hardened into stalactites and other forms.[67] Pope would have known the authoritative account by Pliny the Elder of the famous cave of the nymph Corycia on Mount Parnassus (a possible origin of the 'Nymph of the Grot'), which demonstrated the natural production of stone from water 'which kill those that drinke thereof': 'That the water issuing out of it into riuerets and rils, will congeale and grow to a stony substance'.[68] Early modern theorists of the earth further developed this view. Following the German mineralogist Georgius Agricola and the Italian cosmologist Giordano Bruno, Kircher maintained that there were 'seeds of things' in the universe.[69] When underground, as 'lapidifying juice', this seed-filled juice caused stony matter to grow in a multitude of forms.[70] This understanding was shared by Steno in his *Prodoromus*,[71] Boyle's 'Lapidifick spirit'[72] and other English writers like Thomas Lawrence's 'seeds of stone' in the second half of the 17th century.[73] Pope would therefore be familiar with the concept of subterranean water producing stones and minerals, although he understandably preferred the more

poetic concept of ‘seeds’, which had made earlier appearances in his *Essay on Man* in 1733–34, for example:

> Plant of celestial seed! if dropp’d below,
> Say, in what mortal soil thou deign’st to grow?
> Fair opening to some court’s propitious shine,
> Or deep with di’monds in the flaming mine?[74]

Whilst we cannot be certain whether he could be thinking of his own grotto here – although we do know that his collecting of minerals had certainly begun in the 1730s – it is clear that Pope did not see minerals merely as objects of beauty to please the eye. And neither were they simply expressions of his desire to imitate nature in a realistic manner. Rather they may be a demonstration of the process of natural production, comparable to that of plants. As Pope would have known well, ‘seeds of things’ (*panspermia*) are not only atoms of seminal power – Greek *sperma* and Latin *semen* are perfectly synonymous – but they are also words and ideas.[75] Like Renaissance poets, Pope’s play upon the terms ‘seeds’, ‘ideas’, and ‘seminal power’ traversed both the natural world and poetic criticism.[76]

Pope’s use of the term ‘flaming mine’ is also of note. Since the mid-16th century, the ancient theory of heat of the sun making the minerals and metals grow had been exposed to ridicule; rather, it was the underground fire that was required for their growth or transmutation.[77] Heat was central in many 17th- and 18th-century (al-) chemical accounts of the production of minerals and metals. Alchemical traditions sharply underlined the earth’s active powers, and thus fostered interest in fire and water, and in dynamic processes such as the growth and change of state of minerals, earthquakes and volcanoes.[78] Gabriel Plattes, for example, the English science writer and a member of Samuel Hartlib’s correspondence network, used laboratory experiments to replicate the formation of minerals and strata in nature: when receiving heat, vapours of bituminous and sulphureous substances in the earth will form rocks and mountains and engender veins of minerals in the cracks and crannies of the mountains.[79] In his discussion, Plattes refers to ‘the central heat’, an ancient notion that was later developed by Kircher.[80] In Kircher’s geocosm, the eternal fire at the centre of the earth is connected to its surface by a series of passageways (Fig.7). Together with underground passages of water, these two underground networks of fire and water, Kircher postulated, balanced each other like veins of the earth, or womb, filling it with the ‘seeds of things’ and producing life (minerals and metals) itself.[81] Pope’s ‘flaming mine’, and indeed his line in *Windsor-Forest* (1713), ‘Phoebus warm[ing] the ripening ore to gold’,[82] may be seen as an acknowledgment of the renewed understanding of metallurgy.

In the aforementioned drawing by Kent (*c.*1725–30) (Fig.3) Pope is shown seated, either writing or meditating at a desk, in what may be the central chamber, with the lamp hung from the ceiling. Another drawing (Fig.8), also by Kent (dating from 1725–30), similarly shows the poet seated in the grotto, leaning against a sarcophagus-like object. The lamp, suspended differently, is radiant in the centre of the drawing. It is presumably the one that he described in his 1725 letter to Blount:

> And when you have a mind to light it up, it affords you a very different Scene: it is finished with Shells interspersed with Pieces of Looking-glass in angular forms; and in the Ceiling is a Star of the same Material, at which when a Lamp (of an orbicular Figure of thin Alabaster) is hung in the Middle, a thousand pointed Rays glitter and are reflected over the Place.[83]

It cannot be a coincidence that the poet was represented so close to the lamp in both drawings, with the interior of the grotto shown as endless arched spaces as the imagination stretches. With the ‘thousand pointed rays’ it set in motion, the lamp, as Mack has noted, would be equal to the Neoplatonist Plotinus’ notion of the mind as a power, giving ‘a radiance out of its own store’.[84] If the grotto, as we have shown, is modelled on Kircher’s nature as geocosm, the divine mind-earth, with a central fire at its very centre, the lamp may then be justifiably compared to the central fire in the geocosm. The lamp’s rays are ‘true Expressions’ of poetry, which, ‘like th’ unchanging Sun, | *Clears, and improves* whate’er it shines upon’,[85] in the same manner as rocks and the veins of minerals are formed in the earth.

The idea of the central fire in the earth as the vital flame that generated all lives resonated with the writings of contemporary English naturalists. Thomas Robinson, for example, wrote that:

> The natural Uses of this Central Fire seem to be Analogous to that vital Flame which is seated in the Heart or Center of all Animals; for as that by its Vital heat enlivens the whole Body; so this Central fire by that Vital warmth it disseminates through the whole mass of Matter, enlivens it and gives as well to the several Strata of Stones, Metals, Minerals and other subterranean Earths, their degrees of Consolidation; as to the several kinds of Ores, their different degrees of Purity and Perfection.[86]

It seems that a similar process of the growth of minerals with subterranean heat was being described in Pope’s *Epistle to Cobham* (1734):

> Court-virtues bear, like gems, the highest rate,
> Born where heaven’s influence scarce can penetrate:
> In life’s low vale, the soil the virtues like,
> They please as beauties, here as wonders strike.
> Tho’ the same Sun with all-diffusive rays
> Blush in the Rose, and in the Diamond blaze,
> We prize the stronger effort of his pow’r,
> And justly set the Gem above the Flow’r.[87]

Whilst we can only speculate that the poet’s metaphor of Lord Cobham’s virtue as gems formed underground could be a description of Pope’s grotto, these lines do indicate that the poet comprehended the principle of the growth of minerals with subterranean heat – which may be attained, symbolically, by the lamp and the mirrors’ reflections of rays which he described in his letter to Blount.

With Pope, the material and the poetic creative imagination were often fused, as reflected in his notes on Achilles’ shield in the *Iliad*. For Homer, Pope noted over two decades ago before the transformation of his grotto in 1739, the shield is the world: ‘The Gold, the Brass, the Silver, and the Tin are the Elements: Gold is Fire, the firm Brass is Earth, the Silver is Air, and the soft Tin, Water.’[88] ‘The working of the shield’ is ‘to be begun by Night, as indeed all Matter lay undistinguish’d in an original and universal Night; which is called Chaos by the poets.’[89] Commencing his grotto below ground, Pope perhaps saw himself as, in his way, comparable to Homer or the divine artist, who ‘is at this time to give a Form and Ornament to the World he is making’.[90] Under the effect of heat, the formless rock and earth mixed with vapour – like the genial seeds that are swollen by ‘the vital flame’ – metamorphose into glittering minerals. The process of poetic imagination may be understood to follow a similar manner. Like the formless rock or earth, the primeval matter, the poet’s imagination requires purification and polishing – by the ‘touch’ of water and light – to become shining ideas.

While such poetic imitation of natural processes may have existed only as an idea before 1739, Pope’s visits to the quarries and mines in Bath and Bristol that year, as well as his intensive correspondence with

Fig.7 Illustration in Athanasius Kircher, *Mundus Subterraneus* (Amsterdam, 1665), showing underground fiery passageways and the central fire in the earth. Public domain, via Wikipedia Commons, https://commons.wikimedia.org/wiki/File:Kircher_Mundus_Subterraneus_fire_canals.jpg [accessed 17.10.22].

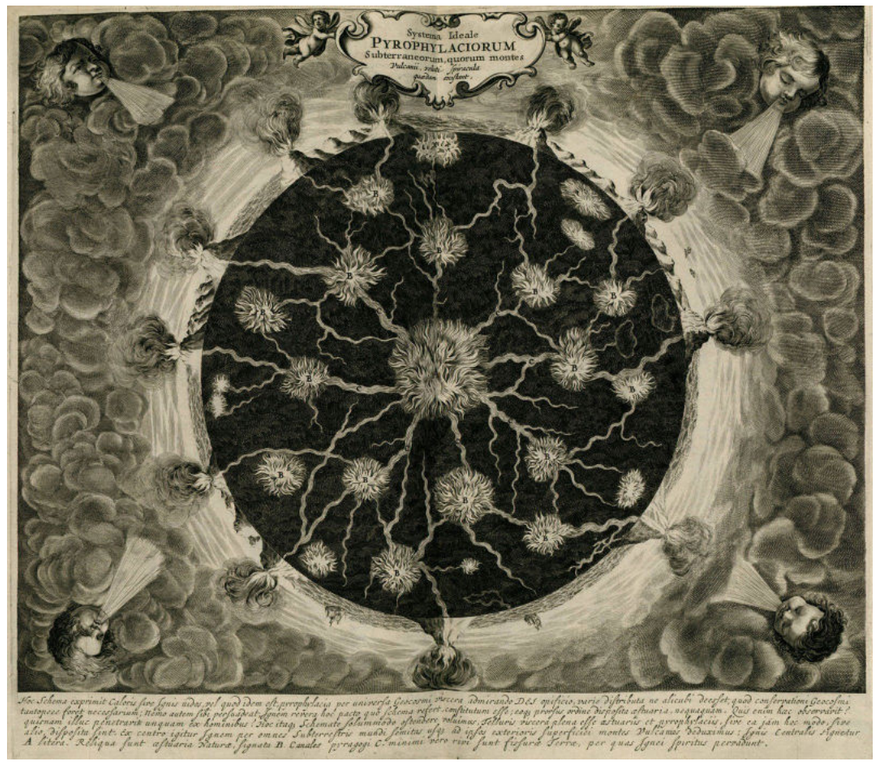


Fig.8 William Kent, *Alexander Pope in His Grotto*, c.1725–30. Pencil, pen and ink, brown wash, 22 x 18.5 cm. Devonshire Collection, Chatsworth. Reproduced by permission of Chatsworth Settlement Trustees.

Borlase in 1740, made the previously conceptual vision *actual*. He was now able to experiment with the newly available information about mines, stratification, and the specific materials – mundics (copper ore), spars, crystal, or diamonds and all else.

Pope would have found Borlase a knowing interlocutor who understood his vision of nature in terms of dynamic processes. 'As you desire to imitate nature,' Borlase wrote to the poet, 'nothing can be more uncertain, irregular and various than her *subterraneous workings*.'[91] Discussing Pope's grotto with Dr William Oliver, Borlase noted how the poet would have it look like 'a Rock interspersed with veins of ore, glittering minerals and all the Variety of shapes, shoots and pendants into which the Lapideous and Metallic juices sport themselves, now and then, without the Help of light tools or molds to assist them'.[92] Later, in his *A Natural History of Cornwall*, Borlase referred to the same chemical principle of the fluid: 'There is a kind of stony lapidific matter which runs through and mixes more or less with the substance of all stones, and may justly be esteemed the universal cement, by which earth and minerals are combined into all the several orders and species of stones.'[93] Borlase further noted that 'when this cement is dissipated by fire, or dissolved by a menstruum, the stone becomes earth or metal.'[94]

In *The Mind is a Collection*, Sean Silver considers Pope's grotto as a museum of natural history as well as an alchemist's lab.[95] He suggests that the grotto was oriented by the design the poet had trained himself to see: 'the starving chemist in his golden views', 'Supremely blest', just like 'the poet in his muse'.[96] To extend Silver's metaphor, the mind, as I have tried to show, is more than a collection – rather, it is an alembic, where endless animistic, alchemical processes take place. And to borrow Gaston Bachelard's phrase, 'meditation on such processes cultivates an open imagination'.[97] While the poet's eyes would be struck by rocks, strata, fissures, and crystals in the dark, underground places, they are not to be viewed as lifeless objects. Rather they are the substances that are part of a chthonic drama in which the virtuous souls of Tory patriots could be compared with humble, 'Unpolish'd Gemms'. As Pope presented the scene himself in his *Verse on a Grotto by the River Thames at Twickenham, composed of Marbles, Spars, and Minerals*:

> Thou who shalt stop, where *Thames*' translucent Wave
> Shines a broad Mirrour thro' the shadowy Cave;
> Where lingering Drops from Mineral Roofs distill,
> And pointed Crystals break the sparkling Rill,
> Unpolish'd Gemms no Ray on Pride bestow,
> And latent Metals innocently glow:
> Approach. Great Nature studiously behold!
> And eye the Mine without a wish for Gold.
> Approach: But aweful! Lo th' *Ægerian* Grott,
> Where, nobly-pensive St. John sate and thought;
> Where *British* Sighs from dying Wyndham stole,
> And the bright Flame was shot thro' Marchmont's Soul.
> Let such, such only, tread this sacred Floor,
> Who dare to love their Country, and be poor.[98]

'Grottofying'

Whilst it is true that the transformation of Pope's grotto into a mine was encouraged by an up-to-date knowledge about the interior of the earth, it should be emphasised that his approach retained his earlier conceptualisation of nature. Indeed, it is only when we leave aside images of form and focus on images of matter – the operations of water and fire (light) in the grotto – that we are able to come close to Pope's dynamic and intimate vision of nature in terms of processes or regenerative cycles of substances.

Pope's fascination with imitating a mine, a place in which the variety of minerals is the product of creation and destruction impelled by natural subterranean forces, is because – I suggest – it is analogous to the most fertile imagination. A 'Variety of Flints, Spar, Ores, Shells' are discovered in the 'fissures and angular breaches' in the grotto as reported by the Newcastle journalist. For this design, Pope no doubt carefully followed Borlase's instructions: whereas the stratifications were the result of the Deluge, the fissures in the strata, known as lodes, are where veins of metal ore in the earth are found as 'a result of after-violences'.[99]

Importantly, Pope did not stop at imitating the mine in his grotto-making. During the summer of 1741, Pope was again 'grottofying' – requesting 'gold clift' and other stones from Richard Owen Cambridge in Gloucestershire.[100] At the same time, he wished that one 'wing' of the grotto be covered with shells. For a time in April and May that year, Pope also thought of having something 'of a Grotesque kind' painted in the grotto. The latter two ideas seem to have been abandoned; certainly, neither the shell-room nor the painting was mentioned in John Serle's detailed description included in the *Plan* and the Newcastle journalist's report. Benjamin Boyce regrets that 'fantasy returned to the grotto' in this post-mine era.[101] Yet from the perspective of the present essay, 'fantasy', or rather his material imagination, had never departed from the subterranean realm or from the poet's consciousness. For Pope, the so-called 'realistic' imitation of the mine was in accordance with poetic 'fantasy'. Either being drowsed by the murmurs of the spring, or dazzled by the thousand points of rays, or seeing 'pointed Crystals break the sparkling Rill', the poet not only gets in touch with the rhythms of nature, his muse, but also becomes one with her. His imagination merged into the works of nature underground, which is to say the endless regenerative cycles of the earth.

1 Scholarship on Pope's garden is abundant, see, e.g., Maynard Mack, *The Garden and the City: Retirement and Politics in the Later Poetry of Pope, 1713–1743* (Toronto: University of Toronto Press, 1969); Mavis Batey, *Alexander Pope: The Poet and the Landscape* (London: Barn Elms, 1999).

2 For scholarship on Pope's grotto, see, e.g., Mack, *op. cit.*, ch.2; Frederick Bracher, 'Pope's grotto: the Maze of Fancy', *The Huntington Library Quarterly*, 12 (1949), 141–62; Anthony Beckles Willson, 'Alexander Pope's grotto in Twickenham', *Garden History*, 26 (1998), 31–59.

3 Swift to Pope, 29 September 1725, in *The Correspondence of Alexander Pope*, ed. George Wiley Sherburn, vol.2, 1719–1728 (Oxford: Clarendon Press, 1956), 326. Henceforward *Correspondence*.

4 Pope to Blount, 2 June 1725, in *ibid.*, 297.

5 *Ibid.*

6 For a detailed account, see Benjamin Boyce, 'Mr. Pope, in Bath, improves the design of his grotto', in *Restoration and Eighteenth-Century Literature: Essays in Honor of Alan Dugald McKillop*, ed. Carroll Camden (Chicago: The University of Chicago Press, 1963), 143–53.

7 'An Epistolary Description of the Late Mr Pope's House and Gardens at Twickenham', in *The Newcastle General Magazine* (Newcastle-upon-Tyne, 1748), 25–28 (26).

8 Pope to Bolingbroke, 23 September 1740, *Correspondence*, *op. cit.*, vol.4, 262.

9 Borlase to Sir John St Aubyn, 5 May 1741, in *Borlase Correspondence*, MOR/ BOR/ 2A, The Morrab Library, Penzance.

10 Boyce, *op. cit.*, 148–9; Willson, *op. cit.*, 39, 44–45; and J. Vanessa Lyon, '"A Relic from the Cave of Pope": drawings of the grotto in an extra-illustrated plan of Mr. Pope's garden in the Huntington Library', *Huntington Library Quarterly*, 78 (2015), 448.

11 Cf. Lyon, *ibid.*, 461, where she considers these to be Tuscan columns. The plan (Fig.1) shows them actually to be pilasters. Also, it is difficult to identify any particular architectural order from the drawing.

12 Cited in James Ackerman, 'The Tuscan/ Rustic Order: a study in the metaphorical language of architecture', *Journal of the Society of Architectural Historians*, 42 (1983), 15–34 (27).

13 Boyce, *op. cit.*, 144–6; Marjorie Hope Nicolson and G.S. Rousseau, '*This Long Disease, My Life*': *Alexander Pope and the Sciences* (Princeton, N.J.: Princeton University Press, 1968), 253–4, 261; Willson, *op. cit.*, 41.

14 Boyce, *op. cit.*, 146.

15 Claudia Lazzaro, *The Italian Renaissance Garden* (New Haven: Yale University Press, 1990), 8–10, 289.

16 See, e.g., Ernst Kris, 'Der Stil "Rustique"', *Jahrbuch der Kunsthistorischen Sammlungen in Wien*, N.F., 1 (1926), 137–208 (203–4); Naomi Miller, 'Domain of illusion: the grotto in France', in *Fons Sapientiae: Renaissance Garden Fountains*, ed. Elisabeth B. MacDougall (Washington, DC: Dumbarton Oaks, 1978), 175–206; Malgorzata Szafranska, 'The philosophy of nature and the grotto in the Renaissance garden', *The Journal of Garden History*, 9 (1989), 76–85; Hervé Brunon and Monique Mosser, *L'Imaginaire des grottes dans les jardins européens* (Paris: Hazan, 2010).

17 See, e.g., Vaughan Hart, *Art and Magic in the Court of the Stuarts* (London: Routledge, 1994); Douglas Brooks-Davies, *Pope's* Dunciad *and the Queen of Night: A Study in Emotional Jacobitism* (Manchester: Manchester University Press, 1985).

18 See discussion below surrounding notes 26–28.

19 John Dixon Hunt, *Garden and Grove: The Italian Renaissance Garden and the English Imagination, 1600–1750* (London: Dent, 1986), 203–204.

20 Szafranska, *op. cit.*, 76–85; Chris Laoutaris, *Shakespearean Maternities: Crises of Conception in Early Modern England* (Edinburgh: Edinburgh University Press, 2008), 94.

21 Hunt, *op. cit.*, 137–38.

22 Nicolson and Rousseau, *op. cit.*, 251–65.

23 *An Essay on Criticism* (1711), in *The Twickenham Edition of the Poems of Alexander Pope*, 10 vols., I, ed. E. Audra, and Aubrey Williams (London: Methuen & Co., 1961), 246–47. Henceforward *TE*.

24 Nicolson and Rousseau, *op. cit.*, 226–28.

25 John Dryden, *Of the Pythagorean Philosophy, From Ovid's Metamorphoses Book XV*, ll. 262ff, cited in Brooks-Davies, *op. cit.*, 64.

26 Kris, *op. cit.*, 203–204.

27 Cited in Miller, *op. cit.*, 184.

28 Joseph Rykwert, *The First Moderns: The Architects of the Eighteenth Century* (Cambridge, MA: The MIT Press, 1991), 252; Kris, *op. cit.*, 207–208.

29 Tara E. Nummedal, 'Kircher's subterranean world and the dignity of the geocosm', in *The Great Art of Knowing: The Baroque Encyclopedia of Athanasius Kircher*, ed. Daniel Stolzenberg (Stanford: Stanford University Libraries, 2001), 37–47.

30 Ingrid D. Rowland, *The Ecstatic Journey: Athanasius Kircher in Baroque Rome* (Chicago: University of Chicago Library, 2000), 58.
31 First published in Amsterdam in 1665, excerpts of *Mundus Subterraneus* were translated and published as Athanasius Kircher, *The Vulcano's … out of Kircher's Subterraneous World* (London: John Allen, 1669). For its influence in England, see Roy Porter, *The Making of Geology: Earth Science in Britain, 1660–1815* (Cambridge: Cambridge University Press, 1977), 30.
32 See Mack, *op. cit.*, n.1, 47; Helen Deutsch, *Resemblance & Disgrace: Alexander Pope and the Deformation of Culture* (Cambridge, MA/London: Harvard University Press, 1996), 89–90; Sean Silver, *The Mind Is a Collection: Case Studies in Eighteenth-Century Thought* (Philadelphia: University of Pennsylvania Press, 2015), 84–97.
33 *An Essay on Criticism*, line 236, in *The Poems of Alexander Pope: A One Volume Edition of the Twickenham Text with Selected Annotations*, ed. John Butt (Bungay: Methuen & Co), 151. Henceforward *Poems*.
34 *Correspondence*, *op. cit.*, vol.2, 298.
35 *Ibid.* An original, Latin version (*Hujus Nympha loci…*) is included in the letter to Blount. See Elisabeth B. MacDougall, 'The sleeping nymph: origins of a humanist fountain type', *The Art Bulletin*, 57 (1975), 357–65.
36 See *ibid.*, 357.
37 The *bagnio* was used for therapeutic baths to treat the after-effects of his bone tuberculosis. For discussion on domestic baths in private gardens in the 18th century, see Brunon and Mosser, *op. cit.*, 365–6.
38 Laoutaris, *op. cit.*, 100.
39 Francesco Luzzini, 'Through dark and mysterious paths. Early modern science and the search for the origin of springs from the 16th to the 18th Centuries', *Earth Sciences History*, 34 (2015), 174.
40 Nummedal, *op. cit.*, 40; Kircher (1665), *op. cit.*, 229, cited in Luzzini, *op. cit.*, 175.
41 David Deming, 'Edmond Halley's contributions to hydrogeology', *Ground Water*, 59 (2021), 147.
42 Robert Plot, *The Natural History of Stafford-Shire* (London: Charles Brome, 1686), 74.
43 Stephen Switzer, *An Introduction to a General System of Hydrostaticks and Hydraulicks* (London: T. Astley, 1729), 16.
44 William Derham, *Physico-Theology* (London: W. and J. Innys, 1720), 51. Cited in Deming, *op. cit.*, 150.
45 *TE*, *op. cit.*, IX, ed. Maynard Mack (London: Methuen & Co., 1967), 176.
46 *Ibid.*, X, 133.
47 Mack, *The Garden and the City*, *op. cit.*, n.1, 51.
48 Porphyry's *On the Cave of the Nymphs* (*De Antro Nympharum*) was the most influential text on the numerous grottoes throughout the landscape of Renaissance poetry and actual gardens. The Latin version was first published in Rome in 1518. Pope engaged with the treatise in his note on the naiads' grotto in *Homer's Odyssey*, Book XIII, in *TE*, *op. cit.*, X, 7–8.
49 Pope, *Homer's Odyssey*, Book XIX, in *TE*, X, *op. cit.*, 204.
50 E.g., 'Hymn to the Naiads' in *A Collection of Poems By Several Hands*, ed. Robert Dodsley, 2nd edn, 3 vols (London: Robert Dodsley, 1748/49).
51 See MacDougall, 'Sleeping nymph', *op. cit.*, 361–63, and Phyllis Pray Bober, 'The Coryciana and the Nymph Corycia', *Journal of the Warburg and Courtauld Institutes*, 40 (1977), 223–39.
52 *An Essay on Criticism* (1711), in *Poems*, *op. cit.*, 166.
53 *Epistle to Mr. Jervas* (1716), in *ibid.*, 249.
54 Pope to Teresa Blount, 11 December 1720, *Correspondence*, *op. cit.*, vol.2, 59.
55 Woodward, *An Essay toward a Natural History of the Earth* (1695), 11, 15–21. Woodward suggests that the shells found in land and mixed with minerals were organic remains of maritime creatures brought to land during the Deluge.
56 John Arbuthnot, *An Examination of Dr Woodward's Account of the Deluge* (London: C. Bateman, 1697).
57 Kircher (1669), *op. cit.*, 256, cited in Claire Preston, *The Poetics of Scientific Investigation in Seventeenth-Century England* (Oxford: Oxford University Press, 2015), 217.
58 See Bober, *op. cit.*, 233.
59 'A character of Mr. Pope's writings: being an episode from the poem call'd sickness', in John Serle, *A Plan of Mr. Pope's Garden* (New York: Garland Publishing, 1982), 22.
60 For Pope's design for the riverbank of Twickenham Villa evoking the two rivers and the two ancient poets, see Mack, *The Garden and the City*, *op. cit.*, n.1, 37–40.
61 Boyce, *op. cit.*, 149.
62 Katherine Myers, 'Shaftesbury, Pope, and Original Sacred Nature', *Garden History*, 38 (2010), 13.
63 Pope to Borlase, 8 June 1740, *Correspondence*, *op. cit.*, vol.4, 246.
64 Pope to Fortescue, 17 September 1740, *ibid.*, 267.
65 'An Epistolary Description', 25.
66 Borlase to Pope, 30 April 1740, MOR/BOR/3, The Morrab Library.
67 Szafranska, *op. cit.*, 79.
68 Pliny the Elder, *The Historie of the World* (London: Printed by Adam Islip, 1634), 405. The Corycian cave is the key to the Renaissance humanist cult of the nymph, according to Phyllis Bober's study.
69 Ingrid D. Rowland, 'Athanasius Kircher, Giordano Bruno and the *Panspermia* of the Infinite Universe', in *Athanasius Kircher: The Last Man Who Knew Everything*, ed. Paula Findlen (New York/London: Routledge, 2004), 191–206 (197–99).
70 Nummedal, *op. cit.*, 41.
71 Cited in Toshihiro Yamada, 'Hooke-Steno relations reconsidered: reassessing the roles of Ole Borch and Robert Boyle', in *The Revolution in Geology from the Renaissance to the Enlightenment*, ed. Gary D. Rosenberg (Boulder, CO: Geological Society of America, 2009), 107–26 (111).
72 *Ibid.*, 115.
73 Thomas Lawrence, *Mercurius Centralis* (London: J. Collins, 1664), 51.
74 *Essay on Man*, IV, lines 7–10 in *TE*, *op. cit.*, III–i, 129.
75 Rowland, *Kircher*, *op. cit.*, 197.
76 'Seeds of judgment' (*Essay on Criticism*, l.20), in *TE*, *op. cit.*, I, 241 refer to ideas; a similar use is in the Preface to his translation of the *Iliad*, where he had described Homer's work as 'a copious Nursery which contains the Seeds and first Productions of every kind, out of which those who followed him have but selected some particular Plants, each according to his Fancy, to cultivate and beautify'. *TE*, *op. cit.*, VII, 3. 'Seeds of fire' (*The Dunciad*, Book IV, l.494), in *TE*, *op. cit.*, V, 391 refer to atoms.
77 Rienk Vermij, 'Subterranean fire. Changing theories of the earth during the Renaissance', *Early Science and Medicine*, 3 (1998), 323–47.
78 Porter, *op. cit.*, 14.
79 Gabriel Plattes, *A Discovery of Subterraneall Treasure* (London, 1639), 9–10. Cited in Allen G. Debus, 'Gabriel Plattes and his chemical theory of the formation of the earth's crust', *Ambix*, 9 (1961), 164–5.
80 Plattes, *op. cit.*, 2.
81 Rowland, *op. cit.*, 199; Nummedal, *op. cit.*, 39–42.
82 Line 396, *Poems*, *op. cit.*, 209.
83 *Correspondence*, *op. cit.*, vol.2, 297.
84 Mack, *The Garden and the City*, *op. cit.*, n.1, 47.
85 *Essay on Criticism*, 315–16, in *TE*, *op. cit.*, I, 275.
86 Thomas Robinson, *New Observations on the Natural History of This World of Matter* (London: John Newton, 1696), 35.
87 *Epistle to Cobham* (1734), lines 97–100, in *Poems*, *op. cit.*, 553.
88 Note to verse 537, Book XVIII, *The Iliad: of Homer. Translated by Mr. Pope* (London: Bernard Lintott, 1715–20), Part 5, 120.
89 *Ibid.*
90 *Ibid.*
91 Borlase to Pope, 30 April 1740, MOR/BOR/3, The Morrab Library.
92 Answer to Dr Oliver's letter pa (1) … 4 Jan. 1739 (1740). MOR/BOR/3, The Morrab Library.
93 William Borlase, *The Natural History of Cornwall* (Oxford: Printed for the author, 1758), 117.
94 *Ibid.*
95 Silver, *op. cit.*, 84.
96 *Essay on Man*, *TE*, *op. cit.*, III–i, 87.
97 Gaston Bachelard, *Water and Dreams*, trans. Edith R. Farrell (Ann Arbor: The Pegasus Foundation, 1983), 2.
98 *Verse on a Grotto by the River Thames at Twickenham, composed of Marbles, Spars, and Minerals*, cited in Mack, *The Garden and The City*, *op. cit.*, 69–70. The verses were circulated in many versions and transcripts. The earliest version is in a letter of 3 September 1740 to Bolingbroke, *Correspondence*, *op. cit.*, vol.4, 262.
99 Borlase, *Natural History*, *op. cit.*, 143, 146.
100 Boyce, *op. cit.*, 152.
101 *Ibid.*

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