Voyages to the ‘House of Diversion’: the Seventeenth-Century Water Gardens of the Cope Family at Hanwell, Oxfordshire.

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Stephen Wass BEd MA MCIfA

Kellogg College

Student Number 694948

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Abstract

Archaeological investigations, beginning in 2012, have done much to recover, record and interpret the remains of a large garden of the seventeenth century in the grounds of Hanwell Castle, Oxfordshire. The garden is important not only because it is a rare example of an essentially intact garden from the period but also because of a reference made to Sir Anthony Cope by Robert Plot in his *Natural History of Oxfordshire* where he describes his house, and by extension the contents of his garden, as the real 'New Atlantis', referring to a fictional prototype of a science based community posited by Sir Francis Bacon in 1626. Some of the features within the garden are reported on and a number of individuals associated with it documented. The implications of Plot's record of 'a society of learned virtuosi living obscurely' at another Cope family property at Tangley, also in Oxfordshire, are examined.

Beginning with a consideration of the practical and theoretical basis for the study of historic gardens this work goes on to look at the evolution of garden design from the middle ages to the start of the seventeenth century. It emphasises the indigenous tradition of working with bodies of water whilst also considering the effects of continental developments, through the course of the Renaissance, on garden design and especially, hydraulic engineering. A detailed account of the Cope family, their social and intellectual circle and their work on the gardens at Hanwell is accompanied by description and analysis of the physical remains of the garden which are compared and contrasted with other contemporary gardens. Of particular importance is the discovery of a unique assemblage of seventeenth-century terra-cotta

garden urns which are reported on and set within the context of the technology and economics of the time. In taking up Plot's challenging remark possible links with the early scientific community in Oxford are established and the role of the site in the development of contemporary thinking reviewed along with a general consideration of the part played by gardens in the development of science in the early modern period.

List of Figures

Abbreviations and Conventions

A/TC	Collection relating to Hanwell Castle and the Cope family in the possession of Rowena E. Archer and Christopher Taylor, The Coach House, Hanwell Castle
CBA	Council for British Archaeology
Hants. CRO	Hampshire County Record Office
ODNB	*Oxford Dictionary of National Biography*
Oxon. HER	Oxfordshire Historic Environment Record
RCHME	Royal Commission on Historic Monuments (England)
HOP	*History of Parliament*
OED	*Oxford English Dictionary*
TNA	The National Archives
VCH Oxon.	Mary Lobel and Alan Crossley, (eds.), 'Hanwell' in *A History of the County of Oxford: Volume 9, Bloxham Hundred* (London, 1969)

Archaeological Labelling Conventions:

for example: HANK21/009/3

HAN = Hanwell, K = the'K'site (see map p. 255 and appendix 2), 21 = the year,

009 = Numbering of individual archaeological feature or context,

3 = Numbering of individual find or artefact

All photographs and drawings are by the author unless otherwise stated. Every effort has been made to contact the relevant organisations for permission to reproduce other images.

A full plan of the site showing the layout and location of all significant archaeological features is presented as figure 56, page 256.

Preface: Robert Plot and Sir Anthony Cope

> … that great *Virtuoso*, the Right Worshipful *Sir Anthony Cope* of *Hanwell*… whose House I thought seemed to be the real *New Atlantis* which my Lord Viscount *Verulam* had only in Fancy. [1]

So wrote Robert Plot (1640-96) in *The Natural History of Oxfordshire,* first published in 1677. This reference to the status of Sir Anthony Cope (1636-75) as a 'great virtuoso' and the identification of his house at Hanwell as the 'real *New Atlantis*' is a remarkable one. It suggests that the Cope household in the early 1670s resembled the early proto-scientific university as outlined in Sir Francis Bacon's visionary book of 1626, *The New Atlantis*. [2] In this work Bacon made the argument that if progress were to be made in the realm of natural philosophy there were two essential components: a community of like minded people with an interest in experimental method and a supportive environment within which to carry out any investigations. This statement by Plot has been the mainspring for this historical and archaeological investigation into the garden at Hanwell Castle, Oxfordshire. [3] Either Plot was describing something of real significance or else was simply flattering Sir Anthony in the most outrageous way. It is, therefore, appropriate to begin by out-lining what Plot has to tell us about Sir Anthony and his interests.

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[1] Robert Plot, *The Natural History of Oxfordshire* (London, Second Edition 1705), p. 74.
As a day to day working copy a facsimile edition was used, Paul Minnet (Scolar Press, 1972).

[2] Francis Bacon, *The New Atlantis* (London 1627). Edition used in this study is Susan Bruce (ed.) *Three Early Modern Utopias, Utopia, New Atlantis and The Island of Pines* (Oxford, 2008).

[3] Although originally named house or hall since at least the nineteenth century the property has been known as Hanwell Castle and this is how it appears in modern mapping and other sources.

Early in 1675 Robert Plot was riding by the village of Shutford when he found a large fossil bivalve.

> … which being much too heavy for my Horse-portage, was afterward upon my Direction, fetch'd away by the Ingenious Sir *Anthony Cope*, since whose Decease it is come I suppose into the hands of his equally Ingenious Brother Sir *John Cope*, the Heir of his Virtues as well as Estate. [4]

This incident hints at a close relationship and is confirmed in ten additional entries referring to the Cope family and their park at Hanwell. Plot knew the location well enough to comment on freshwater mussels in a pond. [5] He also gave an account of a distinctive variety of small leaved elm. [6] The inside of the Castle was evidently also familiar as he describes in some detail a water clock. [7] Plot further mentions a collection of anamorphic paintings he must have examined. [8] Presumably he had been invited to dine at the Castle for he comments on the polished stone handles of some of Sir Anthony's cutlery. [9] Beyond that he had clearly been treated to a display of the waterworks in the garden noting,

> There are some other *Water-works* at the same Sir *Anthony Cope's, in* a House of *Diversion* built in a small *Island* on one of the *Fish-ponds*, Eastward of his House, where a *Ball* is tost by a *Column* of *Water* and artificial *Showers* descend at pleasure; within which they can yet so place a *Candle,* that though

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[4] Plot, *Natural History*, p. 128.

[5] Ibid., p. 190.

[6] Ibid., p. 161.

[7] Ibid., p. 240.

[8] Ibid., p. 279.

[9] Ibid., p. 74.

> one would think it must needs be overwhelmed with *Water,* it shall not be extinguish'd. [10]

He had also become acquainted with a mill

> […] of wonderful contrivance, where-with that great *Virtuoso* did not only grind the *Corn* for his House, but with the same motion turned a very large *Engine* for cutting the hardest Stone […] and another for boaring of *Guns*. [11]

However the most remarkable comment is that in chapter 4, '*Of Stones*', where Plot eulogises Sir Anthony in these terms,

> … that great *Virtuoso*, the Right Worshipful Sir *Anthony Cope* of *Hanwell*, the most eminent *Artist* and *Naturalist* while he lived, if not of *England*, most certainly of this *County*, whose House I thought seemed to be the real *New Atlantis*, which my Lord Viscount *Verulam* had only in Fancy. [12]

Plot's *History* forms the starting point for the present study of Sir Anthony Cope, his family and his park at Hanwell. [13] Plot mentions in his *History* a number of eminent natural philosophers including Christopher Wren and Robert Boyle and other members of the gentry such as Sir Thomas Pennyston of Cornwell Park. However, no one else is treated to such a torrent of praise, all of which raises questions about Sir Anthony's potential role in the development of early scientific thinking associated with Oxford. [14] Equally astonishing is Plot's reference to 'a Learned Society of *Virtuosi*, that, During the late Usurpation lived obscurely at *Tangley*', another Cope

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[10] Ibid., p. 240.

[11] Ibid., p. 269.

[12] Ibid., p. 74.

[13] See Appendix 1 for Cope family tree, p. 391.

[14] Plot, *Natural History*, p. 99.

family property. [15] The account of Sir Anthony's life examines someone who, in the 1650s and 1660s, may have been promoting informal communities dedicated to learning and research, an enterprise akin to the formation of the Royal Society in 1662. Beyond the history lies the physical fact of the garden at Hanwell that has remained largely hidden for more than three centuries. Such survivals of seventeenth-century gardens are extremely rare and the garden merits study in its own right as an unusual instance of a garden of the period that was not levelled in the eighteenth century as part of the English landscape movement. This comprehensive study interleaves historical analysis with archaeological fieldwork carried out at Hanwell and elsewhere over the past decade and begins with an examination of the principles that underpins the work. As Roy Strong queried, 'What was the relationship between gardening and the advent of impulses like Baconian experimentalism which led to the Newtonian mechanistic universe? There is indeed still much to be done before one can fully comprehend the Renaissance garden in England.' [16] This study sets out to make a contribution towards understanding that relationship.

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[15] Plot, *Natural History,* p. 92.

[16] Roy Strong, *The Renaissance Garden in England* (London, 1998), p. 6.

CHAPTER 1, INTRODUCTION

The Project: key questions, parameters and constraints

The original research proposal submitted in 2012 was based on a number of key questions the most obvious being what remained of the seventeenth-century gardens of Hanwell? Beyond that it was clear that the study would lead on to considerations of how they were built and maintained and to what sorts of usage they were put. Casting the net further afield comparisons with other gardens of the period and insights into the general progress of garden design and its relationship, if any, with the development of scientific thinking, were likely to figure largely in the study. The programme of research that evolved over the subsequent decade examined these questions but broadened and deepened as the work progressed and new discoveries were made. This was, and continues to be, an unusual project; dependent on a large number of volunteers and drawing on the methods of many disciplines. From the outset it operated on two fronts: the archaeological and the historical and as new material emerged more specific questions effectively replaced the initial queries. A crucial use of the archaeological data was to understand the precise nature of the key structures, especially the 'House of Diversion', and how they were built, used and destroyed. This led on to a broader questioning of the phasing and chronology of the gardens at Hanwell regarding different periods of construction and development. A deeper study of factors influencing their design looked at, in particular, the writings of Sir Francis Bacon his work on the Pondyards at Gorhambury and his literary output relating to gardens. Moving on from questions of design, querying

the nature of the activities pursued in the gardens, who was involved and how these contributed to the notion of Hanwell being the 'New Atlantis', became crucial.

To address the archaeological aspect of these questions the role of volunteers was crucial. In the course of the decade over 90 individuals from all sectors of education and many walks of life assisted with the excavation of differing sites around the park. The enthusiasm and expertise they brought to the project was invaluable but a shifting population meant that the effective induction and training of new volunteers became vital. Their roles ranged from assisting with survey and layout, through the actual digging, to helping with the processing of finds and initial reconstructions of some pots. Apart from some small grants from Kellogg College for travel and equipment the programme was self-funded with money being raised largely through a series of open days and public talks on the project.

The difficulty with this type of investigation is that there is, inevitably, a high degree of uncertainty built into the programme. No matter how much is done in advance in the way of prospecting through geophysics only the actual process of excavation reveals the nature of what lies buried. So it was that a key discovery, an assemblage of seventeenth-century terra-cotta garden urns, shifted the focus of the archaeology and demanded that new fields of investigation be opened up. Such discoveries are reported on here although, to a certain extent, they are tangential to the main questions under investigation. Another facet of archaeology as applied to historic gardens is the comparative absence of secure

dating evidence. As far as the excavations at Hanwell are concerned we have been quite fortunate in being able to use pottery and clay pipe bowls to assign certain features to the seventeenth century and in one particularly spectacular instance record the presence of a pot with a date inscribed on it. Nevertheless the dating of major periods of construction and development within the garden have remained problematic. The work outlined draws on the methodology associated with garden archaeology whose development is considered below.

The Study of Gardens in Theory and Practice

Garden archaeology is a study that embraces both survey and excavation to develop an understanding of a garden's form and development. This understanding is then extended through the use of maps, plans and particularly paintings and drawings, to explore wider issues such as garden technologies, symbolism or colonialism. Both archaeology and history have had their own schools of thought which from time to time have coalesced into particular theoretical standpoints. Both disciplines have also occasionally generated levels of disagreement and controversy that appear quite bewildering to outsiders. Straddling the theoretical fence between archaeological and historical principles and practices is particularly challenging. There is an extensive literature that examines the crossover potential, but also the difficulties, of defining Historical Archaeology within which Garden Archaeology is a sub-set. [17] In the case of writings about garden history this was largely, through much of the twentieth century, the province of art historians. An art historical perspective is, of course, a vital part of any study of an historic garden but the inevitable over-reliance upon images and associated aesthetic and symbolic interpretations has proved to be an occasional drawback in terms of taking attention away from the full spectrum of gardens and their social and technical significance. Most garden archaeologists have at one time or another pointed out the unreliability of many such images. This is as a result of artistic licence to rearrange compositions or exaggerate proportions to say

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[17] See for example: James Deetz, *In Small Things Forgotten* (New York, 1977), Charles E. Orser, *A Historical Archaeology of the Modern World* (New York, 1996) and Pedro P. A. Funari, 'Historical archaeology from a world perspective', in Pedro P. A. Funari, Martin Hall and Sian Jones (eds.), *Historical Archaeology, Back from the edge* (London, 1999).

nothing of the propensity to illustrate future plans rather than built actuality. [18] As Linda Halpern says of Italian gardens, 'They [the images] tell us what mattered to the villa owners, and in many respects they are most interesting in their contradiction of reality.' [19] Such maps, plans, paintings and drawings are artefacts in their own right and each one comes with its own cultural significance whilst being potentially unreliable guides to physical realities.

In perhaps the single most important volume on the subject, *The Renaissance Garden in England*, Roy Strong noted, in the preface to the 1998 edition, that, since the book 'was published in 1979 […] garden history has taken off as a serious academic industry'. [20] In a paper the following year, offering a reconsideration of the work, he listed as his sources, 'both visual and archival […] fields as various as contemporary literature, the history of science, ideas and the visual arts'. [21] However, he then went on to acknowledge the huge contribution made by archaeologists in the field, especially Christopher Taylor. Taylor, whilst working for the Royal Commission on Historic Monuments (RCHM) in Cambridgeshire and Northamptonshire in the early 1980s, commented that, 'The extraordinary riches unveiled by means of aerial photography backed up by the new discipline of field work in garden archaeology came as a revelation.' [22] He was not alone in spotting a trend. Writing in 1995 Tom

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[18] See for example, Christopher Currie, *Garden Archaeology a Handbook* (York, 2005), Chapter 3.

[19] Leslie Halpern, 'The Use of Paintings in Garden History', in John D. Hunt (ed.), *Garden History: Issues, Approaches, Methods* (Washington, 1982), p. 18.

[20] Strong, *The Renaissance Garden*, preface.

[21] Roy Strong, 'The Renaissance Garden in England Reconsidered', *Garden History*, vol. 27, no. 1 (1999), p. 2.

[22] Strong, 'The Renaissance Garden in England Reconsidered', p. 3.

Wilkinson suggested that, 'garden historians have turned attention away from dry and dusty documents. Armed with the tools of the archaeologist and others, the earthworks remaining from earlier phases of garden design have been assiduously traced and […] excavations have been conducted.' [23] At much the same time an important Dumbarton Oaks colloquium on the history of landscape architecture only gave archaeological field work the most cursory of glances. [24] However, in 2008, Landscape Architect, Raffaela Fabiani Giannetto, took on the might of the Italian garden history establishment. She challenged

> the common assumption that such gardens as Trebbio, Cafagglio, Careggi and Fiesole were the products of an established design practice whereby one client commissioned one architect or artist, [reversing] the belief that a garden is the practical application of theoretical principles extracted from garden treatises, [suggesting] that, in the case of the gardens in Florence, garden making preceded its theoretical articulation. [25]

More specifically, in the case of the gardens at Fiesole, generally regarded as the touchstone for early Renaissance planning, she overturned decades' worth of assumptions by the simple expedient of studying on the ground the order in which a series of terrace walls had been constructed. This enabled her to demonstrate a sequence that pre-dated any written account. However, despite occurrences such as this, the contribution that archaeology can make to the study of continental gardens is still not particularly well established. There also remains a strong tradition of art historical writing. For example in David Jacques 2017 volume *Gardens of Court and*

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[23] Tom Wilkinson, *Polite landscapes Gardens and Society in Eighteenth Century England* (Stroud, 1995), p. 5.

[24] Michel Conan (ed.), *Perspectives on Garden Histories*, *Dumbarton Oaks Colloquium on the History of Landscape Architecture XXI* (Washington, 1999).

[25] Raffaela Fabiani Giannetto, *Medici Gardens – from Making to Design* (Philadelphia, 2008), cover .

Country, English Design 1630-1730 archaeology makes a poor showing. Jacques confronts the issue of the accuracy of many historic portrayals and comments, 'In the course of examining minutely hundreds of images, I have generally found a high degree of correspondence between their content and other evidence such as archives.' [26] It is perhaps significant though that achieving correspondence with archaeological evidence does not have a high priority. Even so Jacques admonishes the controversialists: 'there need be no disobliging words if everyone recognises the contribution of others. Garden history embraces very many aspects; indeed, this is the joy and reward of studying the subject.' [27] Amongst approaches to garden history that continue to under use archaeological data one could cite, without being disobliging, numbers of social, economic and plant histories. [28]

The framework, that was guiding much of the archaeological work that was being done, had been laid out by John Phibbs in 1983. He was drawing on a long tradition of earthwork survey dating back to the early years of the Ordnance Survey and the *Victoria County Histories*. [29] However, as is the case with many aspects of Historical Archaeology, important work was done rather earlier in the United States, in particular by Ivor and Audrey Noël Hume at Colonial Williamsburg from the 1960s onwards. [30] A key moment in the developing study of garden archaeology came in

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[26] David Jacques, *Gardens of Court and Country, English Design 1630-1730 (*Newhaven, 2017), p. 31.

[27] Ibid., p. 15.

[28] For example, Charles Quest-Ritson, *The English Garden: a Social History* (London, 2003), Floud, *Economic History of the English Garden* (2019) and Jill Francis, *Gardens and Gardening in Early Modern England and Wales* (New Haven, 2018).

[29] John Phibbs, 'An Approach to the Methodology of Recording Historic Landscapes', *Garden History*, vol. 11, no. 2 (1983), pp. 167-75.

[30] Audrey Noël Hume, *Archaeology and the Colonial Gardener*, Colonial Williamsburg Archaeological Series No. 7 (1974).

1988 with a conference organised by the Council for British Archaeology (CBA) and published as Research Report 78 in 1991. Christopher Taylor summed up the situation at the time:

> One of the latest, and arguably the fastest growing, developments in British archaeology is that associated with gardens. Vast numbers of abandoned gardens have been discovered and many have been recorded in detail. Excavations on gardens are now becoming relatively common. With the appointment of a Garden and Park Inspector by English Heritage and the appearance of the Register of Parks and Gardens of Special Historic Interest in England, it has been formally recognised that parks and gardens constitute historical and archaeological monuments worthy of protection. [31]

A number of very large scale excavations were underway, notably at Hampton Court (1992-95), Kirby Hall, Northamptonshire (1987-94) and Painshill, Surrey (1982 onwards) with the aim of informing equally large scale programmes of restoration. A possibly more nuanced approach to excavating an historic garden was taken by Chris Currie in his work at Castle Bromwich, West Midlands (1989-92).Here he dug in a thoughtful and self-critical way in an attempt, not to only to recover data, but to evaluate methodologies and publish the results. [32] Currie became one of the most prolific of garden archaeologists and was invited to edit, in 2005, the CBA's *Garden Archaeology a Handbook*. [33] This represented something of a high-water mark for garden archaeology as a fashionable pursuit. In subsequent years it has settled down to become an everyday component of any investigations of historic landscapes with

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[31] Christopher Taylor, 'Garden Archaeology: an Introduction', in E. A. Brown (ed.), *Garden Archaeology, CBA Research Report No. 78* (York, 1991), p. 1.

[32] Christopher Currie and Martin Locock, 'Excavations at Castle Bromwich Hall Gardens 1989-1991', *Post-Medieval Archaeology*, vol. 27 (1993), pp. 111-99.

[33] Currie, *Garden Archaeology*.

archaeologists routinely recording aspects of historic gardens within the wider framework of developer led projects. The publication, in 2002, of the first volume in Timothy Mowl's series on the Historic Gardens of England, on Gloucestershire, did much to cement together historical and archaeological sources into a single account of a county's gardens. [34] Since then a further thirteen volumes in the series have been published. [35]

If one were to attach a theoretical label to the current generation of garden archaeologists it would probably be what Bruce Trigger describes as 'practical synthesis'. This includes consideration of topics such as 'multivocality', 'contextualisation' and 'relativism' together with a certain lack of 'high-level' theory or, perhaps rather more positively, 'theoretical convergence'. [36] In reviewing the condition of archaeological theory in 2012 John Bintliff and Mark Pearce labelled a synthesis between processualism and post-processualism with the rather lengthy but descriptive term, 'archaeology as a human science of complementary discourses'. [37] Charting some of the theoretical shifts in the interpretation of gardens within the historic landscape that led to this position, Lu Ann De Cunzo and Julie Ernstein took particular issue with 'archaeologies that presented landscapes as "duping" subaltern populations and that assumed easy distinctions between ideological truths and

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[34] Timothy Mowl, *Historic Gardens of Gloucestershire* (Stroud, 2002).

[35] *Dorset* (2003), *Cornwall* (2005), *Worcestershire* (2006), *Oxfordshire* (2007), *Northamptonshire* (2008), *Cheshire* (2008), *Staffordshire* (2009), *Somerset* (2010), *Warwickshire* (2011), *Herefordshire* (2012), *Cambridgeshire* (2013) and *Hampshire* (2015).

[36] Bruce Trigger, *A History of Archaeological Thought* (Cambridge, 2006), pp. 484-528.

[37] John Bintliff and Mark Pearce, *The Death of Archaeological Theory? (*Oxford, 2012), p. 5.

falsehoods in landscape'. [38] Matthew Johnson, one of their principal targets, wrote in 1996, 'Around the great house gardens were planned as a mediation between the elite and the ordinary as well as between Nature and Culture.' [39] Despite trenchant criticism of this point of view on the grounds of partiality such notions of the use and abuse of gardens, especially as embodied in the concept of 'resistance' remains important. In some cases there has been a degree of reinterpretation, as with Williamson's contention that, 'most acts of aesthetic landscaping, it can be argued, were primarily directed not towards "the poor" but to rival groups within the propertied. Similarly, any opposition to the dominant ideology expressed in the design of landscape was mainly mounted by disaffected groups within the ranks of the franchised.' [40]

Another contribution to the current theoretical mix was expressed in anthropologist Tim Ingold's understanding of what he called a 'taskscape'. [41] An idea which did much to enhance some of the mono-focal views of gardens and parks as playgrounds for elites. This is a theme which is echoed elsewhere. For example, in commenting on other studies, Oliver Creighton in 2009 noted the dangers of, 'a rigid division between symbolic and utilitarian approaches to understanding landscape' and went on to remark on the challenges to a holistic understanding posed by the varying

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[38] Lu Ann De Cunzo and Julie Ernstein, 'Landscapes, ideology and experience in historical archaeology', in Dan Hicks and Mary Beaudrey (eds.), *The Cambridge Companion to Historical Archaeology* (Cambridge, 2006), p. 255.

[39] Matthew Johnson, *The Archaeology of Capitalism* (Oxford, 1996), p. 145.

[40] Tom Williamson, 'Gardens, Legitimation, and Resistance', *International Journal of Historical Archaeology*, vol. 3 (1999), p. 37.

[41] Tim Ingold, 'The Temporality of the Landscape', *World Archaeology*, vol. 25, no. 2 (1993), pp. 152-74.

approaches adopted by historians of buildings, gardens and landscapes to say nothing of the interventions of archaeologists. [42] Ingold and his successors such as Ulla Rajala and Philip Mills saw the landscape as the relatively fixed element through which moved actors absorbed in their various tasks. However, far from being a static background, such as the canvas an artist may apply paint to, the landscape influenced most of those activities and to a lesser extent was influenced by them. [43] This author's recent work on the late medieval park at Hesdin in northern France has capitalised on this approach. [44] In considering early modern landscapes Nicola Whyte has declared her intention of 'bringing landscape history and social history closer together'. [45] Understanding landscape as a social construct is a key task for any archaeologist with an interest in parks and gardens.

A parallel strand has been to view garden archaeology as a study of material culture, especially in respect of interactions between humankind and their surroundings typified by the idea of 'landscape as text'. Hicks describes the counter-modern model of 'local history' writers such as W.G. Hoskins and his idea of the English landscape as 'a vulnerable "palimpsest" wrought through centuries of human life', but is critical of some current analyses of landscapes where 'too often

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[42] Oliver Creighton, *Designs upon the Land: elite landscapes of the Middle Ages* (Woodbridge, 2009), p. 7.

[43] Ulla Rajala and Philip Mills, *Forms of Dwelling: 20 years of Taskscapes in Archaeology* (Oxford, 2017).

[44] Stephen Wass, 'Hesdin, Mud on your Boots in the Garden of Eden: Landscape legacies of the great medieval park at Hesdin, northern France', *Landscape History,* (Forthcoming).

[45] Nicola Whyte, *Inhabiting the Landscape, Place, Custom and Memory, 1500-1800* (Oxford, 2009), p. 6.

hermeneutic phenomenology has descended into a hyper-interpretive romanticism'. [46] Indeed questions of symbolic meanings continue to figure in garden studies, especially as applied to some of the better known Italian sites. In writing about the Sacro Bosca at Bomarzo Joscelyn Godwin commented:

> Bomarzo is a torment to the exegetes ... There have been comparisons with oriental art. Its execution has been called raw and dilettantish, but also a work of refined sculpture. It has been read as the perilous wood of the chivalric romances; a place of the triumphal entry of sovereigns, a biography in images of Vicino's military career; a pilgrimage through the pagan sacred mountain. It has been explained as a Neo-platonic sanctuary, a creation of Epicurean philosophy, the itinerary of the soul from human to divine love and a hieroglyph of the alchemical work. [47]

Such agonies of exegesis are rather less common in the analysis of historic gardens in this country although symbolic readings remain a distinct theme in Strong's *Renaissance Garden* as we move from the 'Heraldic Garden' of chapter two to the 'Emblematic Garden' of chapter three.

The current complexity of thinking on garden history was neatly summed up by Nicholas Blomley, 'the garden has become a crowded place of late. Sex, nature, patriarchy, and power jostle with the dahlias, parterres, and ha-has.' [48] However, as Currie pointed out, 'Historic gardens are a unique type of archaeological site, principally because they continue to evolve.' [49] This is certainly true of much of

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[46] Dan Hicks, 'The material-cultural turn: event and effect', in Dan Hicks and Mary Beaudry (eds.), *The Oxford Handbook of Material Culture Studies* (Oxford, 2010), p. 72.

[47] Joscelyn Godwin, *The Pagan Dream of the Renaissance (*Boston, 2005), p. 171.

[48] Nicholas Blomley, 'The borrowed view: privacy, propriety, and the entanglements of property', *Law and Social Enquiry,* vol. 30 (2005), p. 623.

[49] Currie, *Garden Archaeology*, p. 2.

garden archaeology where any intervention simply marks another stage in the garden's unfolding history and generally that intervention will go on to impinge on subsequent developments. Although Dan Hicks and Sarah Mallet were writing of landscape archaeology and the study of near contemporary events their point holds true for historic gardens too. 'Part of what archaeology brings […] is a distinctive sense of interventionist or transformational practice that weaves together the anthropological sense of participant and observation with the archaeological sense of discovery and making the undocumented visible.' [50]

Garden history would not exist without art history and much of what has been written by art historians constitutes an essential part of the study of gardens. However, many gardens, possibly most gardens, lack the source materials that makes them accessible to historical investigation and so the particular contribution that archaeology can make comes to the fore. The criticism has been made that the use of archaeology to study the historic past is, as James Deetz expressed it, 'the most expensive way in the world to know something we already know'. [51] Set against that is the fact that archaeology consistently offers not only fresh data but additional insights when it comes to the recent and not so recent documented past. [52] It does this by drawing on a variety of techniques to expose the material remains of the past. In the context of this study this includes survey, notably of earthworks, analysis of aerial

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[50] Dan Hicks and Sarah Mallett, *Lande: The Calais 'Jungle' and Beyond* (Bristol, 2019), p. 17.

[51] James Deetz, 'Introduction: Archaeological Evidence of Sixteenth- and Seventeenth-Century Encounters', in Lisa Falk (ed.), *Historical Archaeology in Global Perspective (*Washington D. C., 1991), p. 1.

[52] For example, Sarah Tarlow and Susie West (eds.), *The Familiar Past – Archeologies of Later Historical Britain* (London, 1999) and Martin Hall and Stephen Silliman (eds.), *Historical Archaeology (*Oxford, 2006).

photographs and LIDAR, geophysics and in several locations, excavation. This data has then been subject to what Kathryn Gleason describes as 'the ever expanding variety of analytical techniques available to archaeologists to help reconstruct the spatial and perceptual environment people would have experienced in the built landscape'. [53] Archaeologists may be deluding themselves in their claim to scientific objectivity but there is no doubt that archaeological input can have the effect of nailing theoreticians' feet to the ground. This study also touches on matters of significance within the history of science and specifically that episode commonly termed 'The Scientific Revolution'. In challenging the very concept Steven Shapin characterises his view of the historiography of the topic in these terms, 'In my view there is no essence of the Scientific Revolution, a multiplicity of stories can legitimately be told, each aiming to draw attention to some feature of that past culture.' [54] This is one of those stories and it begins with the ground on which the gardens at Hanwell were constructed, the very bedrock of this account.

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[53] Kathryn Gleason, 'To Bound and Cultivate: An Introduction to the Archaeology of Gardens and Fields', in Naomi Miller. and Kathryn Gleason (eds.), *The Archaeology of Garden and Field* (Philadelphia, 1994) .

[54] Steven Shapin, *The Scientific Revolution* (Chicago, 1998), p. 16.

Hanwell: Geology, Geography, Archaeology and History

The layout, usage and ultimate fate of the important seventeenth-century garden at Hanwell are all functions of the geology, topography and early history of the site. The village of Hanwell, Oxfordshire, lies close to the centre of a plateau of a ferruginous limestone known locally as ironstone. Indeed St. Peter's Church, Hanwell is one of the eight churches of what is called 'the Ironstone Benefice'. It is also within the region sometimes known as Banburyshire, denoting a distinctive part of north Oxfordshire centred on the former market town of Banbury but taking in a much larger area than the historical hundred. Raymond Wood-Jones in his important and pioneering account of the vernacular architecture of the area described it as a 'small but quite populous agrarian area [which has] evolved a distinctive regional style of domestic building of remarkable homogeneity in material and character'. [55] The rusty brown ironstone has been widely used locally for building and in times of necessity has been quarried as a low grade iron ore. [56] Geologically the area is a northern outlier of the Cotswolds: a southern tilting mass made up of early Jurassic marine shales, limestones and sands of the lias group. The most prominent part of these deposits is a marlstone bed, which is a calcareous, sandy ironstone and due to its relative hardness, forms an elevated ridge. [57] Because of this the scarp slope, known as Edge Hill, is quite steep with an overall height of around 50 metres. The dip slope, running north-east to south-west, is dissected by streams which come together in a shallow valley

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[55] Raymond Wood-Jones, *Traditional Domestic Architecture in the Banbury Region* (Manchester, 1963), p. 1.

[56] Philip Powell, *The Geology of Oxfordshire* (Wimborne, 2005), p. 22.

[57] B. J. Williams, *Geology of the Country Around Stratford-upon-Avon and Evesham: Explanation of 1: 50,000 Geological Sheet 200, New Series* (London, 1975).

around 40m deep and 800m wide running north to south around 1.5km to the east of Hanwell (Figure 1). The lower slopes of this valley consist of hill-wash and eroded material derived from the underlying marlstone, whilst the valley bottom is composed of alluvial deposits of silt, clay and gravel. The Castle lies at the head of a small eastward flowing tributary which is fed by a series of springs around the 130m contour. As Timothy Mowl puts it, 'Hanwell stands above a narrow valley

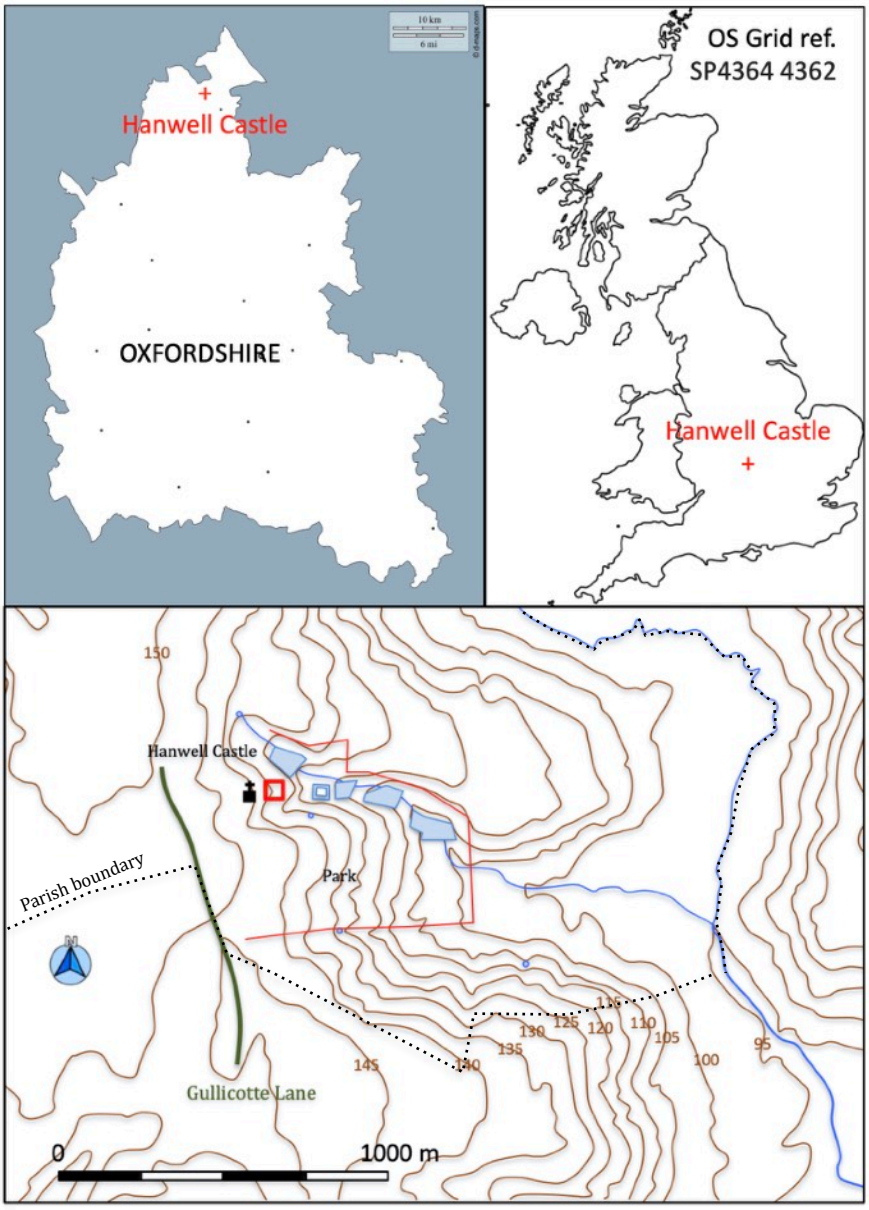

Figure 1. Hanwell, location and topography.

that oozes with springs.' [58] The resulting stream has carved out quite a steep sided little valley, around 10m deep and 120m wide at its midpoint. This formed the basis for the water gardens of the seventeenth century. The early park also took in an eastward facing slope to the south. The village today lies beyond the church and Castle to the north and west. Early, albeit transient, settlement of the area is attested to by the discovery of Mesolithic microliths (HAND14 003, HANI16 002) whilst a well-made Neolithic leaf-shaped arrow head (HANK17 001) with its tip broken off suggests hunting within the valley. There is limited evidence for Neolithic and Bronze Age occupation in the upper Cherwell valley. [59]

Developer led excavations on the land between Banbury and Hanwell have uncovered traces of late Iron Age agriculture. [60] Crop-marks suggested possible occupation from a similar period immediately to the north west of the village. [61] The 2014 proposal by Stephen Yeates, following excavations on the site of the Castle prior to redevelopment, that a deep ditch on the site of the Castle was of Iron Age date, is not supported by any finds. [62] The best known site from the Roman period, lying around 700m north west of the church, was listed in Alfred Beesley's *History of Banbury* thus, 'near the gate of the southern field some tessellated pavement was

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[58] Timothy Mowl, *The Historic Gardens of England, Oxfordshire (*Stroud, 2007), p. 23.

[59] For example Alan Hardy, 'The Excavation of a Medieval Cottage and Associated Agricultural Features at Manor Farm, Old Grimsbury, Banbury', *Oxoniensia,* vol. 65 (2000), pp. 345-80 and Charlotte Stevens, *Iron Age and Saxon settlement at Jugglers Close, Banbury, Oxfordshire* (John Moore Heritage Services, 2002).

[60] Christopher Chinock, *Trial trench evaluation at Hanwell Fields, Banbury, Oxfordshire, September 2014* (Museum of London Archaeology, unpublished report, 2014).

[61] Oxon HER no. 28019.

[62] Stephen Yeates, *Archaeological Excavation and Watching Brief at Hanwell Castle, Main Street, Hanwell, Oxfordshire* (John Moore Heritage Services, unpublished report, 2014).

discovered some years ago'. In addition he noted rock cut chambers, stairs, an oven and 'a profusion of burned stones, bones and pieces of Roman pottery'. [63] Beesley also illustrated part of a hoard of more than 70 Roman coins found in a pot in 1828 some 1.2km west of the church. [64] The 2014 excavations by Yeates produced a single sherd of Roman pottery; a paucity mirrored by finds further down the valley where again only a single sherd has been discovered (HAND15 008). [65]

Settlement of these 'redlands' in the post-Roman period is poorly documented. John Blair described a situation in the seventh century whereby 'hybrid communities' were developing in the north Cotswolds drawing on cultural influences from 'the Avon valley Angles and the Thames valley Saxons inter-breeding with what was doubtless a British majority'. [66] He concluded that both Banbury and Cropredy had early minster churches and that a settlement at Prescote just north of Cropredy could have been one of the earliest religious foundations in the area. [67] The settlement at Prescote lay on a route across the valley of the River Cherwell and the *VCH* suggested that the presence of a spring adjacent to this early east-west highway, *Hana's Weg,* was the focus for the original nucleus of the village of Hanwell. Later the existence of a 'never-failing spring' was sufficient to cause *welle* to be substituted for *weg*. [68] Excavations in 1995 in advance of building work at Spring Farm north of Main Street

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[63] Alfred Beesley, *The History of Banbury* (London, 1841), p. 41, and Oxon HER no. 1768.

[64] Beesley, *History of Banbury,* p. 23 and plate 6, and Oxon HER no. 3021.

[65] Yeates, *Archaeological Excavation at Hanwell Castle,* p. 20.

[66] John Blair, *Anglo-Saxon Oxfordshire* (Stroud, 1994), p. 16.

[67] Ibid., p. 75.

[68] *VCH Oxon*, p. 113.

uncovered a series of ditches with late Saxon pottery, chiefly St. Neott's ware. [69] A single sherd of Ipswich ware was not sufficient to establish a Saxon presence on the Castle site. [70]

Both before the conquest and at the time of Domesday Hanwell was held by the Saxon lord Leofwine before passing into the hands of the Vernons. In 1415 the manor was conveyed to Thomas Chaucer and then to his daughter Alice, at that point the wife of Sir John Phelip. She carried the property to her third husband, William de la Pole, earl of Suffolk in 1430. [71] The manor remained part of the holdings of the de la Poles until it was conveyed to William Cope in 1498. The *VCH* paints a picture of a rather undistinguished, middling sized village, a situation perhaps reinforced by the suggestion that 'it is doubtful whether there were any resident lords of the manor before the Copes and the early manor-house was presumably leased or occupied by bailiffs.' [72] The problems of an absentee lord are illustrated by the bill of complaint taken out by John Chambre against Richard Grevil of nearby Drayton for 'forcible entry and dispossession of the manor of Hanwell' in 1455. [73] It was alleged that the raiders, armed with 'many other forbidden weaponry' entered into the manor and drove the tenants 'from their homes for fear of their lives' before helping themselves to the livestock.

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[69] Oxford Archaeological Unit, *Spring Farm, Main Street, Hanwell Archaeological Evaluation* Ref. CHN. 391/93 (Oxford, 1995).

[70] Yeates, *Archaeological Excavation at Hanwell Castle,* p. 54.

[71] Rowena E. Archer, 'Alice Chaucer (c. 1404 – 75)', *ODNB*.

[72] *VCH Oxon,* p. 118.

[73] Hants. CRO, 43M48/93 (Transcript of petition or bill of complaint of John Chambre of Northampton against Ralph Grevill for forcible entry and dispossession of the manor of Hanwell on 7 Jan 1455).

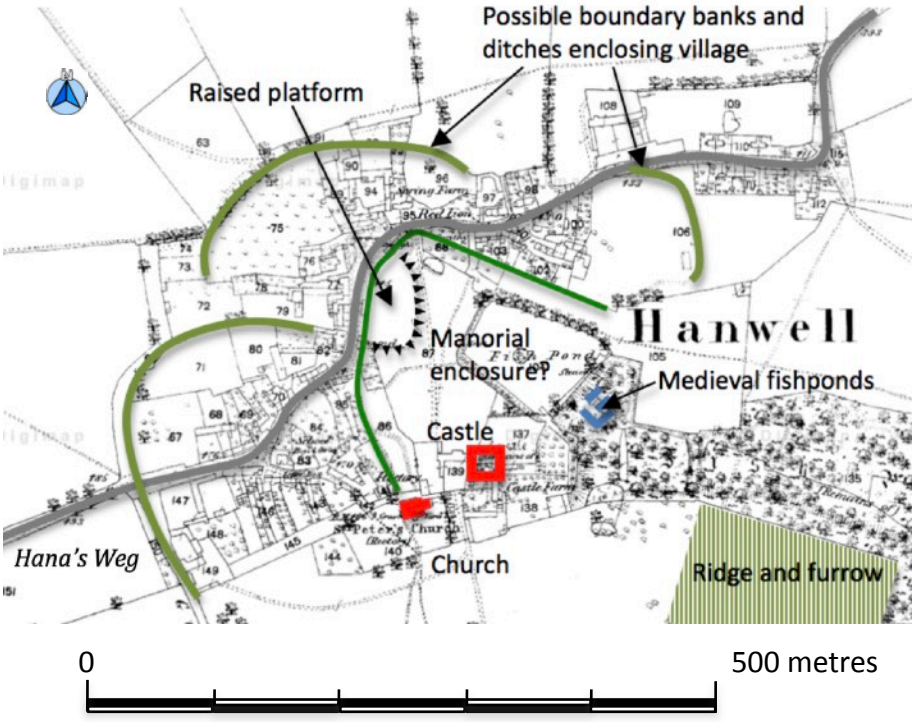

Figure 2. Hanwell Village, possible medieval features.

The layout of the village has some features of interest (Figure 2). The church, first mentioned in 1154 and almost completely rebuilt early in the fourteenth century occupies the high ground on the south side of the village. [74] The remaining portion of Hanwell Castle lies around 50m to the north east. What is striking is the area of open ground to the north of the Castle and church which the main road through the village skirts round. It is possible that this area simply reflects the boundary of the manorial enclosure broken into by Grevil and his thugs in 1455. One notable feature of this is a large area of raised ground immediately adjacent to the current boundary

[74] Jennifer Sherwood and Nikolaus Pevsner, *The Buildings of England, Oxfordshire (*London, 1974), p. 632.

wall on the west side of the plot. Whether this is evidence for significant building activity on this part of the site or possibly even the remains of an early earthwork fortification remains unknown. Data from the 2014 excavation does indicate early medieval occupation on the Castle site possibly associated with a defensive ditch. [75] The *VCH* proposed that the village was subject to an early form of ribbon development along the line of the through road because of the presence of open fields to the north and south. [76] There is certainly evidence of ridge and furrow to the south east later truncated by enclosure into the Castle park. Excavations in 1974 demonstrated that late medieval occupation extended to the east of the centre of the village. [77] Furthermore it was noted that this area was bounded by an earthwork bank and ditch which may have extended round the village to the north. This was the setting which William Cope acquired in 1498 with plans to build his new house.

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[75] Yeates, *Archaeological Excavation at Hanwell Castle*, p. 24.

[76] *VCH Oxon*, p. 112.

[77] Richard Chambers, 'Excavations at Hanwell nr. Banbury, Oxon. 1974', *Oxoniensia* vol. XL (1975), pp. 218-37.

CHAPTER 2, THE SIXTEENTH CENTURY

William Cope and the building of Hanwell House

Although the main focus of this study will be on the 4th. Baronet, Sir Anthony Cope, it is inevitable that his interests and opportunities to develop the gardens at Hanwell drew on the deep well of his family's fortunes. William Cope (d. 1513) was born into a lesser branch of the Cope family of Deanshanger in Northamptonshire and took service with Lady Margaret Beaufort and subsequently her husbands, Henry, Lord Stafford and Thomas, Lord Stanley. William Cope was among the most intimate of Lady Margaret's circle and served her in the management of her estates. [78] Researcher Bill Cope proposed that it was here that he was schooled in the intricacies of accounting and land management and here also where he acquired an appetite for the acquisition of large land holdings. [79] After the Battle of Bosworth in 1485 William was drawn into the service of Margaret Beaufort's son, Henry VII, although there is no evidence he actually fought in the battle. After sitting in the parliament of 1491 William became the Sergeant of the Catery with the task of supplying provisions to the King's household. [80] On 30 September 1494 he was promoted to the role of cofferer or accountant for the royal household. [81] Bill Cope drew attention to an indenture executed between the king and the royal household officials which he

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[78] Michael Jones and Malcolm Underwood, *The King's Mother: Lady Margaret Beaufort, Countess of Richmond and Derby* (Cambridge, 1992), p. 79.

[79] Bill Cope, 'William Cope of Hanwell (c. 1450 -1513)', *Cake and Cockhorse*, vol. 20, no. 5 (2017) , p. 140.

[80] Josiah Wedgwood and Anne Holt, *History of Parliament, 1439-1509,* vol. 2 (London, 1938), p. 710.

[81] Cope, 'William Cope', p. 143.

suggested established a system where responsibilities and accountabilities were clearly spelt out. He considered that this measure not only improved the financial security of the crown but also set the pattern for William's future business dealings and property management. Whilst in possession of a house in Banbury in 1496 William took a lease on the manor of Hardwick, a moated manor still partially surviving as an earthwork some 2.3 km north of the town centre. In 1498 William was granted the nearby manors of Fenny Compton and Wormleighton both in Warwickshire, the latter village being depopulated and enclosed. Thorpe gave the following account of what ensued: 'He promptly set about purchasing all the lands and tenements of minor lords in Wormleighton […] Having gained control of the entire parish he proceeded in 1499 to destroy 12 messuages and 3 cottages, converting 240 acres of arable land to enclosed pasture for animals and driving 60 persons from the land.' [82] Having already secured the Hanwell property in February 1498 from Edmund de la Pole, the latter's treason meant that William had to rely on Henry VII to guarantee the transfer of the manor into his ownership in October of that year. [83] William does not seem to have taken the same wholesale approach to clearances here as was done at many of his other holdings. This may be linked to his intention to develop Hanwell into his family seat by ordering the construction of a new residence.

This grand house would have formed the centre-piece for activities in the seventeenth century that led to Plot's identification of the space as the 'real *New Atlantis'* and so it is useful to consider how its original layout, that is rather

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[82] Harty Thorpe, 'The Lord ands the Landscape, Illustrated through the changing fortunes of a Warwickshire Parish, Wormleighton', *Birmingham Archaeological Society, Transactions and Proceedings*, vol. 80 (1965), p. 51.

[83] Hants. CRO, 43M48/94 17, (Release of rights in the manor of Hanwell, Oxon. 17 October 1498).

reminiscent of an Oxford college, came about. We do not have a precise date for the start of building work but it must have followed fairly closely on the family taking control in 1498. Although the term architect is not necessarily anachronistic, as a structure firmly anchored in the medieval tradition, it would be more appropriate to consider the role of a master mason in the design of this building. It is clear that architectural drawings were in use as there is a reference in William's will charging his executors to, 'finish and make my house in like manner and proportions as it is begun and according to a plat thereof made'. [84] Whilst we have no idea as to the dialogues between William as client and his master mason as contractor it must have been a costly undertaking. No building accounts survive but it is perhaps significant that in 1506 the property at Wormleighton was sold to his wife's cousin, John Spencer, for the large sum of £2,000. [85] Bill Cope made the entirely plausible suggestion that much of this cash would have been siphoned off to help cover the costs of the possibly halting progress with the building work at Hanwell. [86]

Hanwell Castle, as it commonly called today, is clearly a shadow of its former self and some effort needs to be exerted to appreciate its form during its heyday in the mid-seventeenth century. The building is surrounded by later accretions, the most recent of which were constructed between 2012 and 2017. It is now quite difficult to imagine its strictly symmetrical facade (Figure 3). This, according to John Goodall,

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[84] Hants. CRO, 43M48/96, (Office Copy of will and probate of William Cope esq. 1513).

[85] Thorpe, 'Wormleighton', *Birmingham Archaeological Society,* p. 57.

[86] Cope, 'William Cope', p. 148. Work began on the Spencer's brick manor house at Wormleighton in 1516. As a local project to construct a major brick building it is possible that the same gang of brick makers, bricklayers and masons moved from one property to work on the other.

Figure 3. *Hanwell Castle in its Former State* by John Fittler 1827. Author's collection.

was a typical composition of tower, turret, gatehouse, turret and tower. [87] Some doubt the building's castle credentials: 'not a castle in the true sense', says Pevsner. [88] Indeed accounts prior to the nineteenth century use the term house or hall. Even so, it is likely that such a prestigious building with its martial trappings would have been viewed within the long tradition of castle building by those who put it up and those who came under its sway, even if it was constructed in what would have been an overtly modern material: brick. It is possible to read this as an example of how, as Matthew Johnson saw it, 'aristocracy and upper gentry in 16th-century England manipulated symbolic structures relating to the feudal past to lend ideological support to the Tudor social order'. [89] The early images indicate that the Castle was built as a

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[87] John Goodall, *The English Castle* (New Haven, 2011) p. 362.

[88] Sherwood and Pevsner, *Oxfordshire*, p. 632.

[89] Matthew Johnson, 'Meanings of Polite Architecture in Sixteenth Century England', *Historical Archaeology*, vol. 26, no. 3 (1992), p. 45.

series of two-storey ranges set around a square courtyard with three-storey towers at each corner. Using the dimensions of the existing south range and the engravings of the north and west fronts, with the additional information that the length of the frontage of the south range was 109 feet, it has been possible to reconstruct the ground plan. [90] A further assumption was made based on the degree of symmetry found at new properties such as Herstmonceux of 1441, Kirby Muxloe of 1480 and, showing the persistence of the form, Toddington from 1560. This results, as we have noted, in a layout strikingly reminiscent of a contemporary college (Figure 4). Goodall made much of the 'distinctive rhythm of elements […] that was to recur in major English buildings into the late sixteenth century' which he suggested was a characteristic of buildings with royal connections or pretensions. [91]

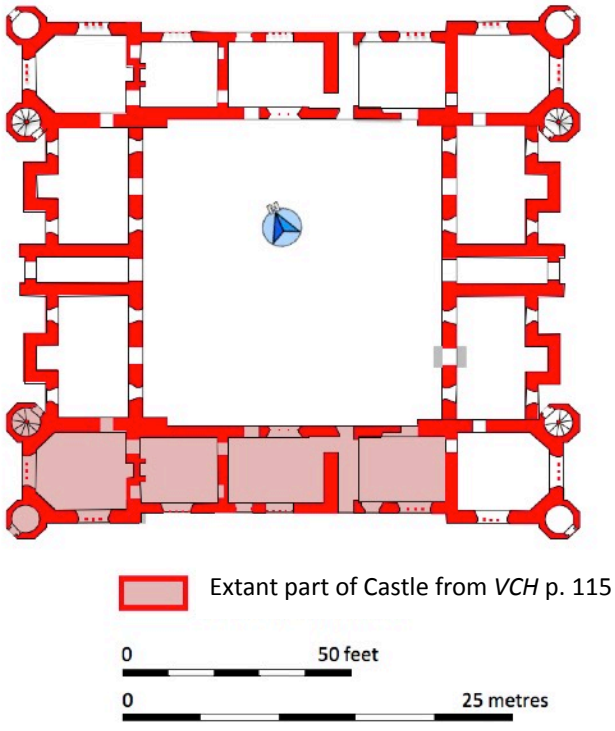

Figure 4. Hanwell Castle, reconstructed plan.

[90] Beesley, *History of Banbury,* p. 191.

[91] Goodall, *The English Castle,* p. 363.

At Hanwell the strongly symmetrical west front was typical of this pattern appearing to comprise two large square flanking towers with octagonal turrets on the western elevation, two smaller square turrets in intermediate positions and a comparatively restrained central gatehouse. This had an oriel window below a sculptured plaque which in turn was below a gabled pediment finished off with three square finials.

An exact parallel for this arrangement is hard to find. The corner towers in particular appear unique in their specific setting. They resemble on a smaller scale Ralph, Lord Cromwell's great brick tower of 1446 at Tattershall. Ralph also figured in the nation's financial affairs as treasurer to Henry VI. [92] Perhaps Cope hoped to reflect some of the glory of his illustrious predecessor. A closer parallel in terms of date is the tower begun in the 1470s at Buckden in Huntingdonshire by Thomas Rotherham, Bishop of Lincoln, but in both cases we are dealing with single towers. Hanwell has four, albeit slightly smaller in scale. The most common parallels for a tower with octagonal turrets are of course the many late medieval brick gatehouses, starting with Herstmonceux but running through Hertford of 1463, Kirby Muxloe from 1480 and Esher 1484 to the extravagances of Oxburgh built in 1482. At Hanwell the gatehouse is under-emphasised and the corner towers with their octagonal turrets remain an unusual and distinctive element in the design.

In practice the work on completing the Castle was delayed. Whether this was because of technical difficulties with construction, supply of materials, disputes with contractors or, most likely, shortage of ready money, remains uncertain. What is documented is the court of chancery case that followed William's death in 1513. In

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[92] A. C. Reeves, 'Cromwell, Ralph, third Baron Cromwell (1393? – 1456)', *ODNB*.

1518 his oldest son and heir Anthony Cope sued the executors, his half-brother Stephen and one William Bustard, for failing to finish the Castle in accordance with William's will. [93] The case presumably was resolved at which point the building must have been completed to a satisfactory standard to create what John Leland described in the 1540s as 'a very pleasaunt and gallaunt house'. [94] Maurice Howard characterises this comment about Hanwell as one that expresses Leland's perception that there is a, 'blend of the spirit of the past with modern domesticity'. [95]

Whilst the building of the house was consuming the site of the earlier manor house, work was probably under way to improve the adjacent gardens within the setting of the surrounding manorial enclosure and also to extend, or even introduce, a large park. However, given the difficulties that were encountered in finishing the Castle it may be that work on the surrounding park was postponed until well into the sixteenth century. When Anthony's mother, Jane Spencer Saunders Cope, died in 1525 her will listed 'Item, I give to my said sonne, Anthony, to the making of his poole £20 in forme followinge, viz., at the beginning of the making of the said poole £10, and when it is full made and finished other ten pounds'. [96] This considerable amount would have made a substantial contribution to work on the garden, perhaps reflecting his mother's frustration that more progress had not been made. This pool may be the precursor of the water parterre that became home to Sir Anthony Cope's

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[93] TNA, C 1/399/39, (Cope v. Cope, 1515-1518).

[94] John Leland, *The Itinerary of John Leland in or about the years 1535-1543* , ed. Lucy Toulmin Smith (London 1908), p. 40

[95] Maurice Howard, *The Early Tudor Country House* (London, 1987), p. 23.

[96] TNA, Prerogative Court of Canterbury, PROB 11/11/125, (Will of Jane Spencer Saunders Cope, 1525).

‘House of Diversion’. The dam to the east is rather modest in size compared to the other dams engineered up and down the valley and would have created a square pool with a sense of formality absent from the other bodies of water. It is notable how very little early brick is encountered within the wider park and garden, a material one might expect to come across if improvements had been underway during the building of the Castle. Where walls are seen, especially those on the eastern terraces and surrounding the deer park to the south, they are well made with ashlar blocks and may date to the opening decades of the seventeenth century. Whatever the case, developments in the park and garden early in the sixteenth century would have taken place within a tradition of garden making continuing from the middle ages and subject to a number of native and some continental influences.

The Origins of Early Modern Water Gardens

To appreciate the features described by Plot at Hanwell it is helpful to provide an outline account of the factors that supported the growth of the garden within a local tradition of working with water. In 1991 archaeologist Paul Everson remarked that

> The idea of medieval water management features as having an ornamental, garden-related aspect seems, then, to have considerable interest […] Not the least importance is that it might afford an insular/non-continental background through continuity of skills and interest in water features to the almost ubiquitous employment of water features found in 16th and 17th century gardens. [97]

In examining the origins of the gardens at Hanwell this proposed chain of causality needs to be considered in order to challenge the widespread view amongst many garden historians, that all good things in gardens ultimately derived from Italian and therefore classical progenitors. It is troubling that John Hale could note that, 'it was not until the mid-fifteenth century that actual gardens began to be developed as amenities that deliberately expressed social and aesthetic ideas'. [98] As recently as 2012 Louise Wickham maintained, of the early Renaissance, that enclosed medieval gardens, *Hortus conclusi,* were 'opened up by new ideas inspired by classical models' and that 'this was the first time that gardens had used borrowed scenery since Roman times'. [99] Over reliance on images has perhaps warped our views of medieval gardens. As Christopher Currie pointed out, 'The compressed perspectives of medieval illustration affected perceptions that medieval gardens uniformly consisted

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[97] Paul Everson, 'Field Survey and Garden earthworks', in *Garden Archaeology CBA Research Report No.78* (York, 1991), p. 11.

[98] John Hale, *The Civilization of Europe in the Renaissance* (London, 1993), p. 520.

[99] Louise Wickham, *Gardens in History – a Political Perspective* (Macclesfield, 2012), p. 62.

of small closely bounded spaces'. [100] Work over the past thirty years has opened up a whole new perspective on designed landscapes from the middle ages.

At the core of any study of medieval parks, gardens and managed landscapes lie the two great institutions of medieval England: the castle and the monastery. Whilst possibly more technologically advanced, monastic landscapes are limited in terms of evidence for conscious design to promote images of power and celebrate an aesthetic of beauty. In the case of secular landscapes there has been a significant move away from regarding castles and their surroundings as solely military mechanisms to a more nuanced appreciation of their role as administrative, social and cultural hubs which formed a back drop for economic, political and technological display. This is what Robert Liddiard called 'courtly choreography'. [101] Although a comprehensive history of medieval gardens and parks in Britain, incorporating archaeological data, has yet to be written, ample work has been done on individual sites and so there is much evidence for extensive and sophisticated developed landscapes in England from at least the twelfth century. [102] Indeed the Norman conquest is an appropriate place to begin; evidence for early Norman settlement is plentiful and the *Gens Normannorum* bought a degree of sophistication across western Europe from Ireland to Sicily. There are many instances of early Norman estates where the layout of castle, gardens and park clearly demonstrate the ability to use locations to establish dominance and subjugation whilst at the same time creating a landscape that was both productive and attractive.

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[100] Currie, *Garden Archaeology*, p. 9.

[101] Robert Liddiard, *Castles in Context* (Macclesfield, 2005), p. 51.

[102] See for example Liddiard, *Castles in Context* and Creighton, *Designs Upon the Land*

At Restormel in Cornwall the castle was established around 1100 by the Cardinham family. [103] Its location has many points of interest (Figure 9). It is not the most defensible spot in the area which lies to the south west and is occupied by the site of a Roman fort, nor is it close enough to offer protection to the town and bridge at Lostwithiel. However, it is inter-visible with the town and the surrounding countryside which, by the mid-thirteenth century, had become an elaborate park under the control of the earls of Cornwall. In his analysis of the landscape Creighton describes how, 'the building was "keyed into" a local setting that was manipulated, at least in part, with an eye for aesthetic value, thus amounting to a designed landscape'. [104] Features included a mill and hermitage on the banks of the Fowey below the castle and the careful alignment of the park boundary so it was invisible from the castle creating the illusion of a much larger estate. Particularly noteworthy is the circular wall walk on the castle which seems designed for appreciating the view but makes poor sense defensively. It may be argued that aspects of this are simply an over-interpretation of fortuitous juxtapositions within an entirely functional landscape but these ideas can be seen further developed at Kenilworth where the physical efforts to transform the landscape were enormous. Kenilworth Castle in Warwickshire was also begun in the twelfth century. From a study of contemporary charters Liddiard contends that the founder, Geoffrey de Clinton, defined a designed landscape

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[103] Mike Salter, *The Castles of Devon and Cornwall (*Malvern, 1999), p. 32.

[104] Creighton, *Designs Upon the Land*, p. 17.

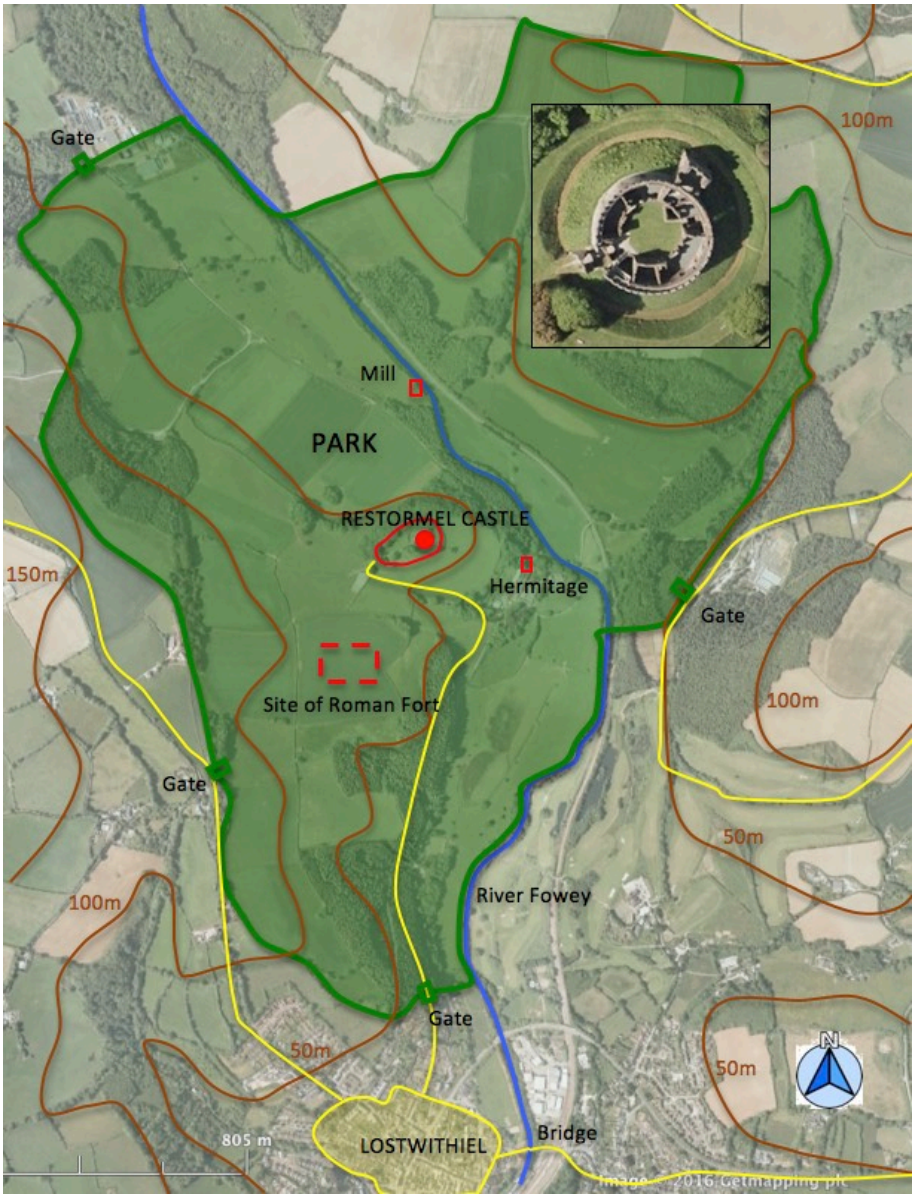

Figure 5. Restormel, the park (after Creighton). Inset aerial view of castle, (c) Google Earth.

of multiple components which formed the setting for four centuries of refinement. [105] Examination of the castle's plan as it stood prior to the famous siege of 1266 is instructive. A huge dam lay to the south of the main castle enclosure with further dams to the east which created an extensive mere surrounding the castle on the south and west sides (Figure 6). According to earlier accounts this defensive work

[105] Liddiard, *Castles in Context,* p. 120.

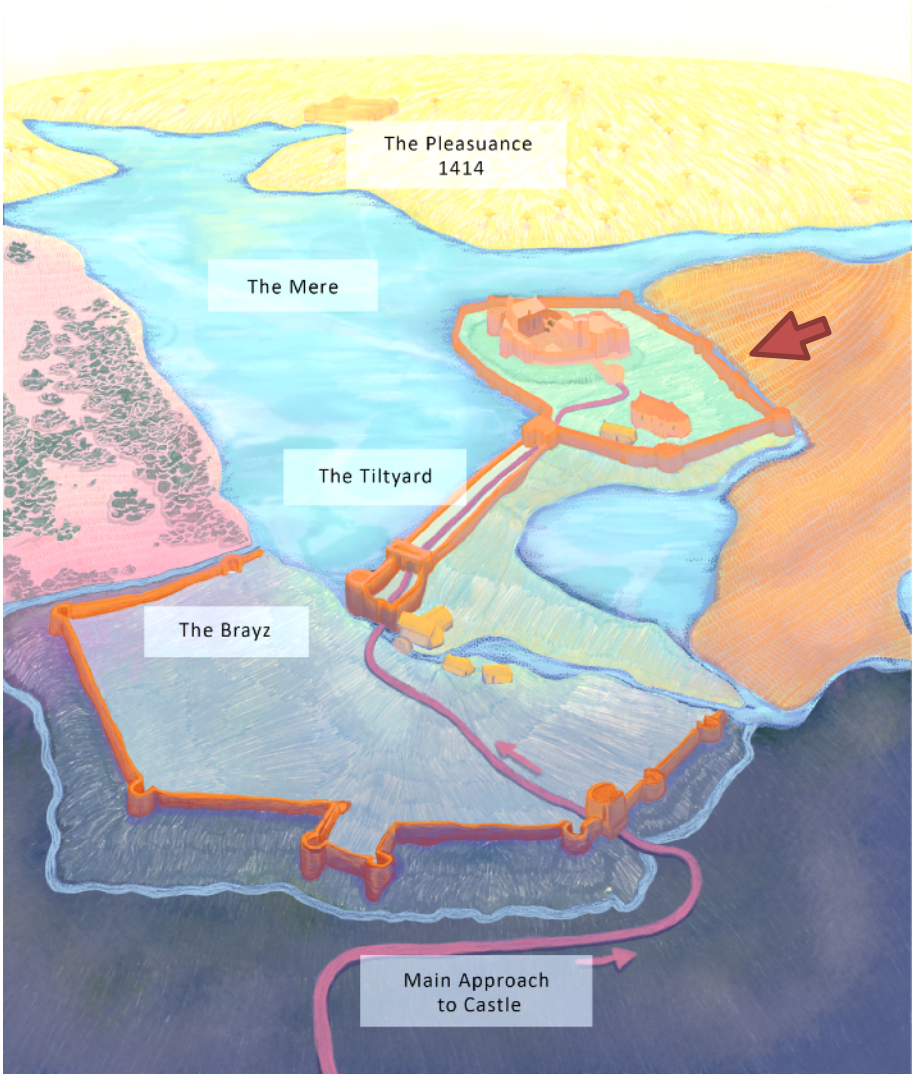

Figure 6. Kenilworth, the landscape showing direction of attack in 1266. Background image by Lizzie Robertson.

was further protected by a massive crescentic earthwork known as the *Brayz* and together formed one of the most sophisticated examples of military engineering seen in the country. [106] In practice this huge investment makes little sense militarily as it could be simply ignored by mounting an attack on the weakly defended northern side of the castle. Further developments in the thirteenth century underlined the true nature of this complex as a grand ceremonial entrance to the castle with a staged unfolding

[106] Michael Thompson, *Kenilworth Castle, English Heritage Guide (*London, 1982), p. 25.

of what was a landscape of pleasure and beauty. When approaching from the south the view is blocked by the *Brayz* and only starts to appear once one has passed through the first gate. In 1374 instructions were given to create an enclosed garden which may have been on the site of the Elizabethan garden created in the early 1570s. [107] This investment continued; in 1414 Henry V ordered the construction of a *pleasaunce* north east of the castle, a large rectangular moated site enclosing gardens and pavilions, all approached by boat across the mere.

Another early example of an enclosed pleasure garden, known as Rosamund's Bower, was seen near to the royal palace of Woodstock in Oxfordshire. This garden, based on a water source known as Everswell, lay around 300m to the west of the medieval palace. The surviving remains are fragmentary but John Aubrey produced a measured sketch of the ruins in the seventeenth century enabling a tentative reconstruction to be made. [108] The site consisted of a walled garden with an entrance tower. Inside were a series of interconnected rectangular pools and walk ways with seats and niches (Figure 7). The particular significance of this site is its early date, the 1170s, and the possible design links with the Sicilio-Norman tradition of palace and garden building. The fact that there were dynastic and cultural links at the time with both Sicily and Iberia is well established. [109] Howard Colvin in his exhaustive *History of the Kings Works* refers specifically to the palace of *La Zisa* in Palermo. [110]

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[107] George Demidowicz, ' The North Court Prior to Leicester's Works', in Anna Keay and John Watkins, (eds.), *The Elizabethan Garden at Kenilworth Castl*e (Swindon, 2013), p. 33.

[108] James Bond and Kate Tiller, *Blenheim Landscape for a Palace (*Stroud, 1997), p. 46.

[109] Thomas James, *The palaces of medieval England c.1050-1550 : royalty, nobility, the episcopate and their residences from Edward the Confessor to Henry VIII* (London, 1990), p. 54.

[110] Howard Colvin, *The History of the King's Works* (London, 1963), p. 1015.

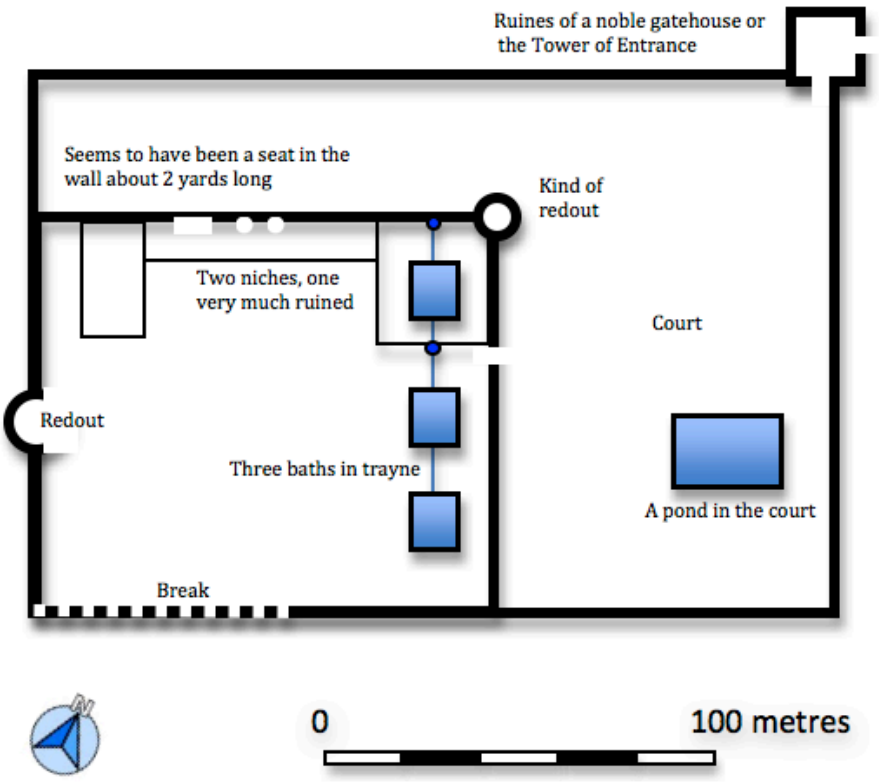

Figure 7. Everswell, 12th-century enclosed garden based on measured sketch by John Aubrey.

The later medieval system of triple moats at Beckley Park, Oxfordshire owes far more to landscaping than to defence. (Figure 8) Documentary evidence shows the outer moat was completed in 1376, a feature that, as Timothy Mowl remarks, 'can be quite easily jumped or even stepped over'. [111] A further complex of fishponds some 300m to the south may be part of the same designed landscape. What is important is that when a new house came to be built around 1540 the watery aspect of the grounds was sufficiently valued that the scheme was maintained in its entirety. There are many instances of multiple moats, some concentric, as at Strensham in Worcestershire and some in line such as Alvechurch in the same county,

[111] Timothy Mowl, *The Historic Gardens of England, Oxfordshire* (Stroud, 2007), p. 19

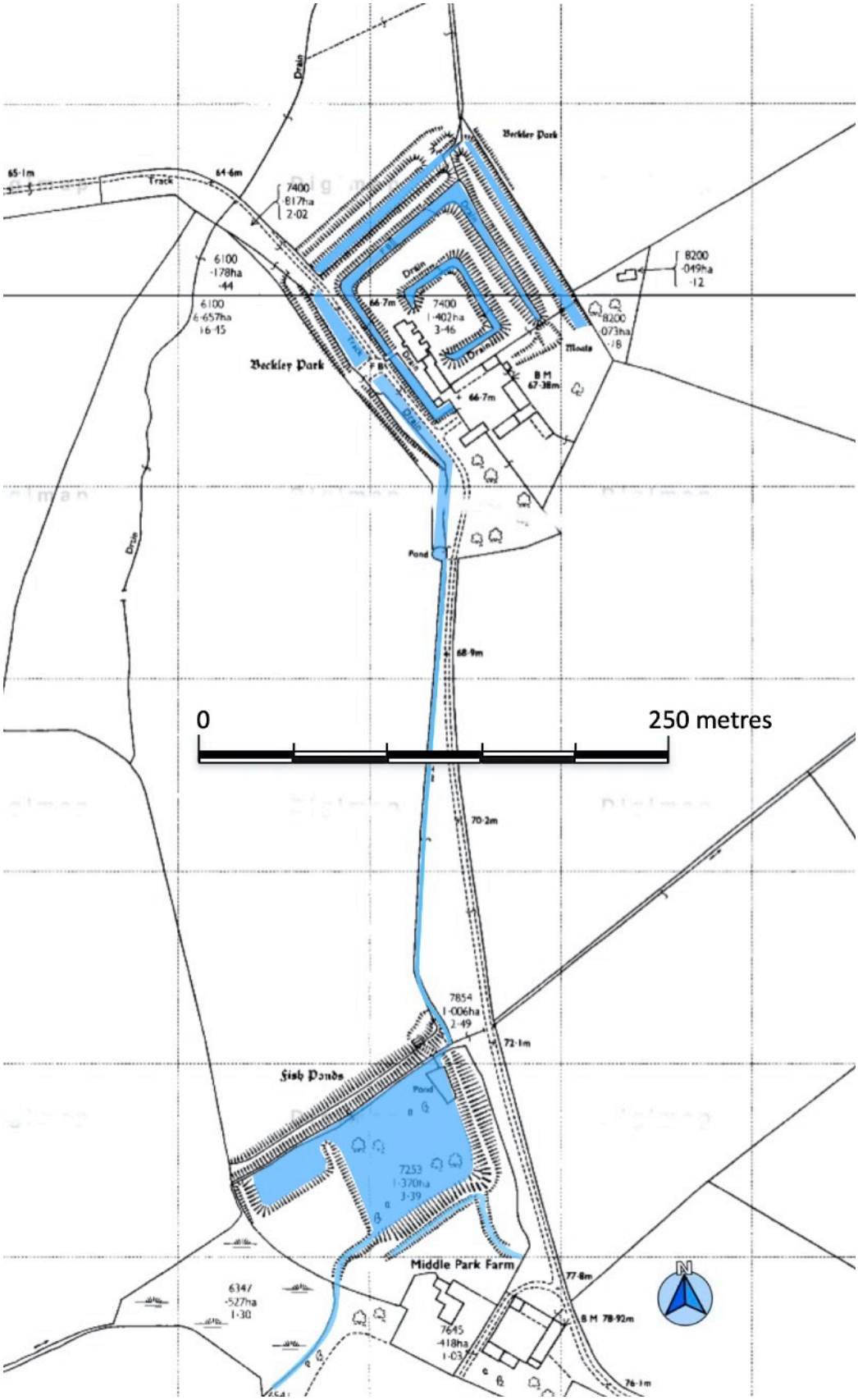

Figure 8. Beckley Park, plan of earthworks from 1970 OS 6 inch map.

that originated in the middle ages but were maintained as significant items of landscaping through into the sixteenth century. [112]

Although the evidence for designed landscapes in monastic settings is less clear it is evident that they shared with the secular community technologies of water management and in many instances managed that technology more adeptly. [113] A case in point is the Cistercian house at Bordesley Abbey, Redditch, where investigations over nearly a quarter of a century established the diversity of applications for water and the lengthy time frame during which water was continually managed and that management adapted as circumstances, including the climate, changed. [114] Whether it is in the provision of fishponds to support the monastic diet, flowing water to carry away waste or even as a source of power for semi-industrial applications, a huge body of expertise and a widespread legacy of managed landscapes survived into the middle of the sixteenth century, as we shall see in the case of Bindon Abbey. [115] Throughout the middle ages there are examples of large and small scale undertakings whereby ground was cleared, terraced and planted for effect; enclosed gardens were built and extensive systems of waterworks incorporated into grand schemes of improvement and enhancement of the landscape. This is far removed from the standard view of medieval gardens and demonstrates that there was a well established and sophisticated tradition of garden and park construction well

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[112] See for example James Bond, 'Moated Sites in Worcestershire' in F. A. Aberg (ed.) *CBA Research Report 17, Medieval Moated Sites* (London 1978), pp. 71-7

[113] For example, Creighton, *Designs Upon the Land,* p. 193.

[114] Stephen Wass, ' Subsidiary Excavations Through the Tailrace', in Grenville Astill, *A Medieval Industrial Complex and its Landscape: the Metalworking Watermills and Workshops of Bordesley Abbey CBA Research Report 92* (York, 1993), pp. 98-103.

[115] See below, pp. 62-3.

before the advent of the Tudors. In support of this view Michael Leslie cites the layout of Scotney Castle, Kent and Bodiham Castle, Sussex as developed and elaborate examples of garden design. [116] By the early 1500s the English landscape could be characterised as one which was intensively managed and was both productive and in places ornamental. In terms of capacity the gentry and the aristocracy were able to command large scale operations which facilitated the transformation of landscapes by engineering ponds, lakes and leats and constructing banks, mounds and terraces. This proficiency in managing projects of this type typically belonged to those regions of north western Europe where water was plentiful and the soils pliable. Frank Woodward has written, 'By the seventeenth century still-water features were being employed primarily for decorative reasons, though the influence of medieval defensive features and fishponds remains apparent.' [117] It is this tradition of working with water which underpins the later proliferation of water gardens. As Paula Henderson says, 'The inspiration for water gardens was largely indigenous.' [118]

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[116] Michael Leslie, 'An English landscape garden before "The English Landscape Garden"?', *Journal of Garden History*, vol. 13, no. 1 (1993) pp. 3-15.

[117] Frank Woodward, *Oxfordshire Park*s (Woodstock, 1982), p. 13.

[118] Paula Henderson , *The Tudor House and Garden* (New Haven, 2005), p. 129.

Water Gardens in the Sixteenth Century.

Following the completion of the house at Hanwell work would have been undertaken to improve the park and lay out a formal garden commensurate with the status and ambitions of the Cope family. The archaeological record for such early developments at Hanwell is limited but it is worth considering contemporary instances of garden making to give some context to the works. As we shall see, Oxfordshire and the immediate counties surrounding it, are rich in such sites. Jane Whitaker emphasises the importance of water in gardens, 'the fashion for large and ornate water gardens and fountains as part of a desirable setting for an important house became one of the hallmarks of a wealthy and ambitious courtier'. [119] It is, however, possible to differentiate gardens in which ponds featured as important elements from ones in which the whole design was based on complex interaction between channels, moats and ponds. In these cases the relationship between wet and dry becomes fundamental in the overall plan of the garden. A significant example of the first category was Henry VIII's developments at the newly acquired Hampton Court from 1529 onwards. In competing with the formal gardens associated with the courts of France and Burgundy additions included the Privy Garden, the Mount Garden and the Pond Garden. The latter, sometimes termed the Pondyard, was not especially innovative in design terms consisting of three rectangular pools surrounded by low stone walls. However, information that survives about construction is interesting in the account they present of methods and materials. In March of 1535 work on 'dyggyng the fondacyons of the ponds' began. Jacques sums up the progress of the work:

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[119] Elizabeth Whitaker, *Gardens for Gloriana* (London 2019), p. 53.

> The supply and retention of water were being worked on from April. Installation of pumps and lead pipes was commenced that month to fill the ponds from the river. The natural ground is extremely pervious sandy gravel and, so, in May the bottoms of the ponds were clayed. There were also sluices made of elmwood to enable the ponds to be drained. Various trials were made of filling and emptying the ponds from May to July. The arrangements seem to have worked, because in July a lead pipe was laid from the 'fountayne in the inner courtt to the pondds' to supplement the pumps; in September the construction of a well was being undertaken; and in December two further pumps were supplied to draw water from it. [120]

Excavations in 1993/94 in the adjoining privy garden uncovered brick lined drains of the period and recovered valuable information about a central fountain, albeit one probably dating from 1701. [121] Gardens at Whitehall and Nonsuch Palaces followed but apart from the occasional fountain and pool neither was a water garden as such. Similar 'pond gardens' existed at locations as dispersed as Chatsworth in Derbyshire, Penshurst, Kent, Melford Hall in Suffolk, Osterley, West London and in an earlier incarnation of the garden at Wilton in Wiltshire. [122]

The degree of continuity between medieval landscapes and Tudor water gardens can be illustrated by examining the works at Raglan Castle, Gwent. Elizabeth Whittle writing in 1989 adopted the conventional explanation that the extensive gardens still visible as earthworks were a phenomenon of the Renaissance 'made around the existing castle between 1550 and 1646 by the 3rd , 4th and 5th earls of Worcester'. [123] However, a building programme initiated in 1465 led to the creation

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[120] Quoted in David Jacques, ' The "Pond Garden" at Hampton Court Palace: 'One of the Best-Known Examples of a Sunk Garden', *Garden History*, vol. 33, no. 1 (2005), p. 89.

[121] Brian Dix and Stephen Parry, 'The Excavation of the Privy Garden', in Simon Thurley, (ed.), *The Privy Garden, Hampton Court Palace* (London, 1995), pp. 79-118.

[122] Whitaker, *Gardens for Gloriana*, pp. 66-70.

[123] Elizabeth Whittle, 'The Renaissance Gardens of Raglan Castle', *Garden History*, vol. 17, no. 1 (1989), pp. 83-94 .

of two courts enclosed with towers and a curtain wall lined with accommodation blocks and the truly colossal 'Yellow Tower of Gwent', a free standing structure of some magnificence. [124] Works on a comparable scale would have taken place within the associated park. Whittle reports that:

> There is some evidence that there were gardens of a utilitarian nature at Raglan in the fifteenth century. A 'Fysshe Pole' is mentioned in an inquest in 1465 and an early fifteenth-century manuscript states of Raglan '[…] about the palace there were orchards full of apple trees and plums, and figs and cherries and grapes, and French plums, and pears and nuts, and every fruit that is sweet and delicious'. [125]

The assumption of simple utilitarianism has been challenged by more recent scholarship. Although there is no hard and fast dating evidence it seems likely that the great pool to the north of castle was a late medieval construction as was the terracing to the west, an ideal location for the orchards described (Figure 9). The long pool to the south west with two rectangular islands at its southern end also seems to owe more to medieval methods of construction than those of the seventeenth century. Much is made of the terracing between the castle and the valley below as being a typically Renaissance feature yet examination on the ground reveals that the earlier fabric of the building hanging, as it does, above a narrow gorge to the east, needed the support of that terracing. It is possible that additional features such as stone steps, a balustrade and summer house were added post-1550 but the earth-moving had clearly already been completed.

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[124] Goodall, *The English Castle,* p. 368.

[125] Whittle, 'The Renaissance Gardens of Raglan Castle', p. 83.

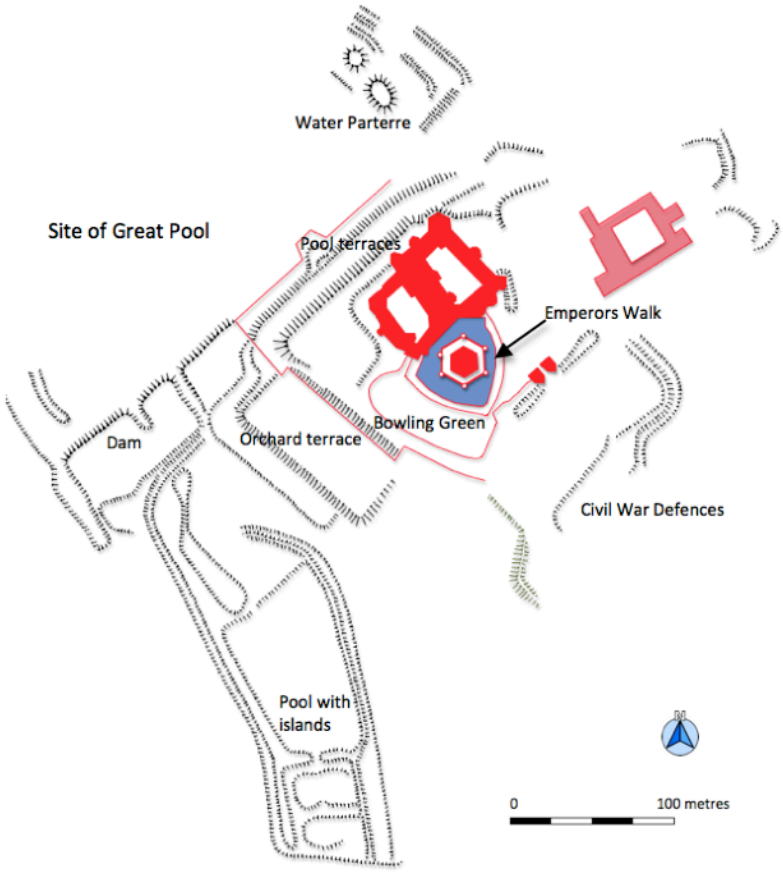

Figure 9. Raglan Castle, plan of earthworks redrawn from 1976 OS 6 inches to the mile map.

The point at which Renaissance influences occur is under the direction of Edward Somerset, the 4th Earl, who, after his succession in 1589, is believed to have commissioned a series of shell-lined niches around the perimeter of the moat surrounding the great tower. These formerly held statues of Roman emperors but like other features, a water parterre for example, were elaborations upon a landscape already fixed in the fifteenth century. General surveys of late medieval castles with significant continuation through the sixteenth century continually demonstrates the 'bolt on' nature of many Renaissance additions.

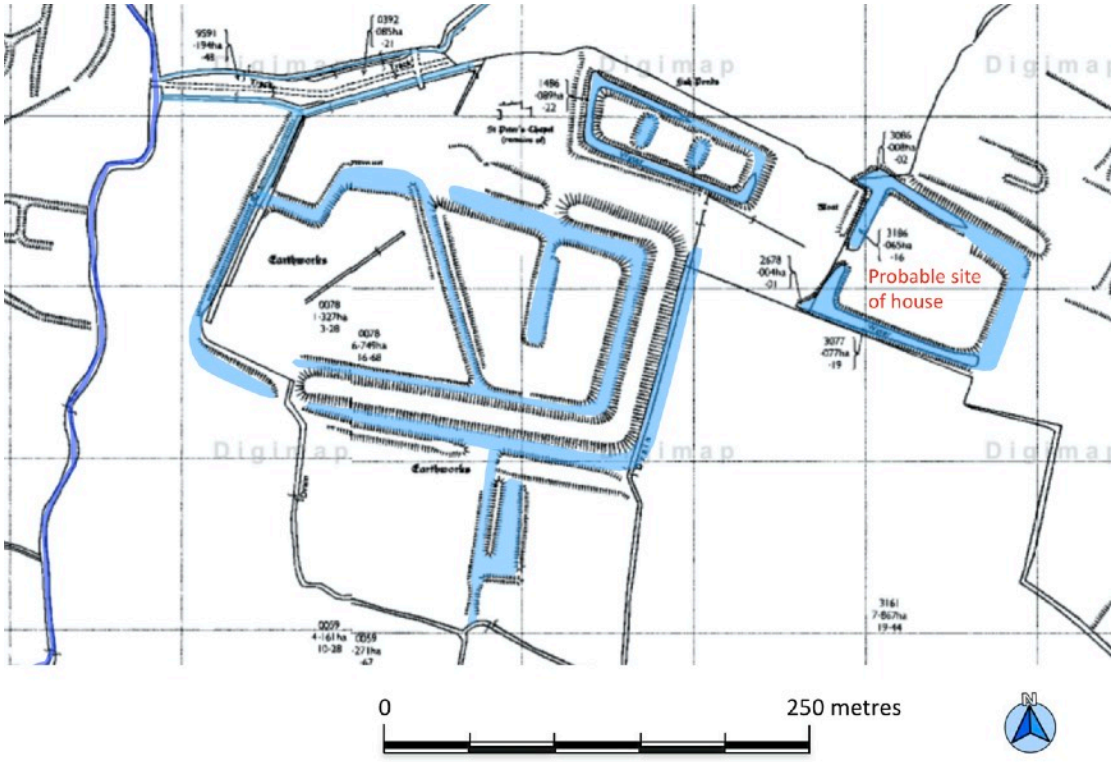

Figure 10. Quarrendon, plan of earthworks from 1970 OS 6 inch map.

At Quarrendon in Buckinghamshire a series of water features associated with a medieval manor and settlement and the site of St. Peter's Church were converted into an elaborate water garden possibly started by Sir Robert Lee prior to 1540. The gardens reached their fully developed form later in the century probably under the control of Sir Henry Lee (1513-1611), the Queen's champion, in anticipation of a visit by Elizabeth in 1592. Everson notes that, 'The earthwork remains of a grand country house and its accompanying formal gardens dating from the 16th and 17th centuries occupy the whole central section of the surveyed site. This elaborate complex is an outstanding survival of its date and type in England.' [126] The earthworks which today are extensive and impressive include huge raised terraces flanked by water filled

[126] Paul Everson, 'Peasants, Peers and Graziers: The Landscape of Quarrendon, Buckinghamshire, Interpreted', *Records of Buckinghamshire,* vol. 41 (2001), p. 24.

ditches and a water garden based on three linked square islands, although it is unclear to what extent some of the clearly medieval water courses featured in the later garden plan. (Figure 10). A similar arrangement could be seen up until the nineteenth century at Doddington Hall, Cheshire. Mowl uses the well known painting of Sir George Delves from 1577 and topographical information to argue that the painting depicts elements of the garden here. [127] The layout of square moats and canals shown in the estate map of 1815 support the case (Figures 11 and 12).

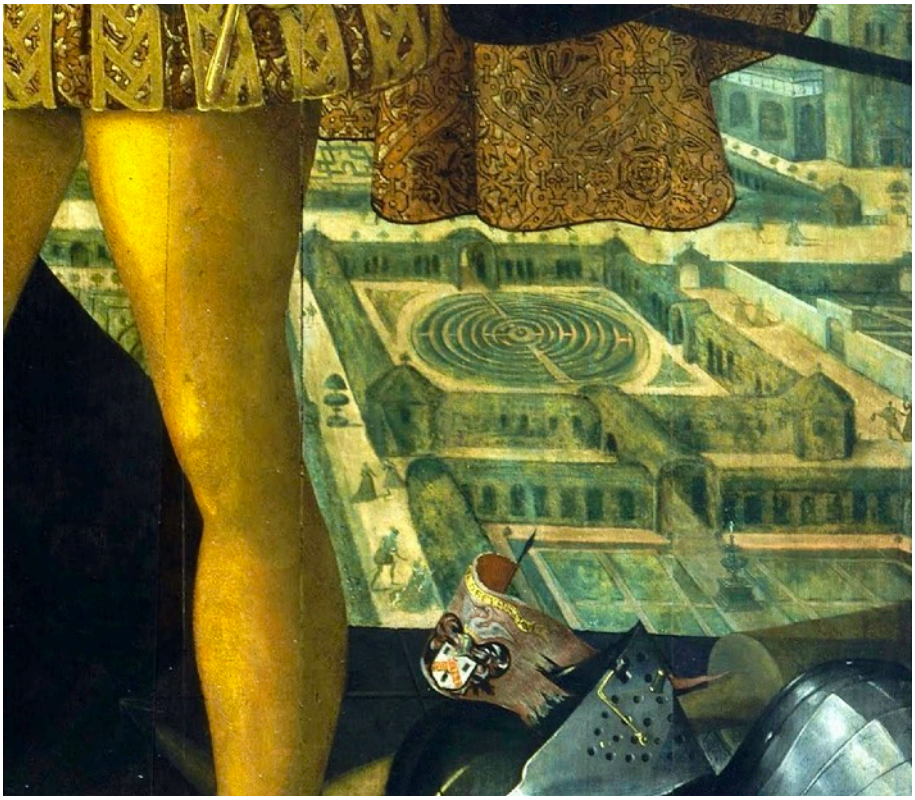

Figure 11. Detail from portrait of Sir George Delves from 1577 showing formal garden.
By permission of the Walker Art Gallery, Liverpool.

[127] Timothy Mowl, *The Historic Gardens of England, Cheshire* (Bristol, 2008), p. 24.

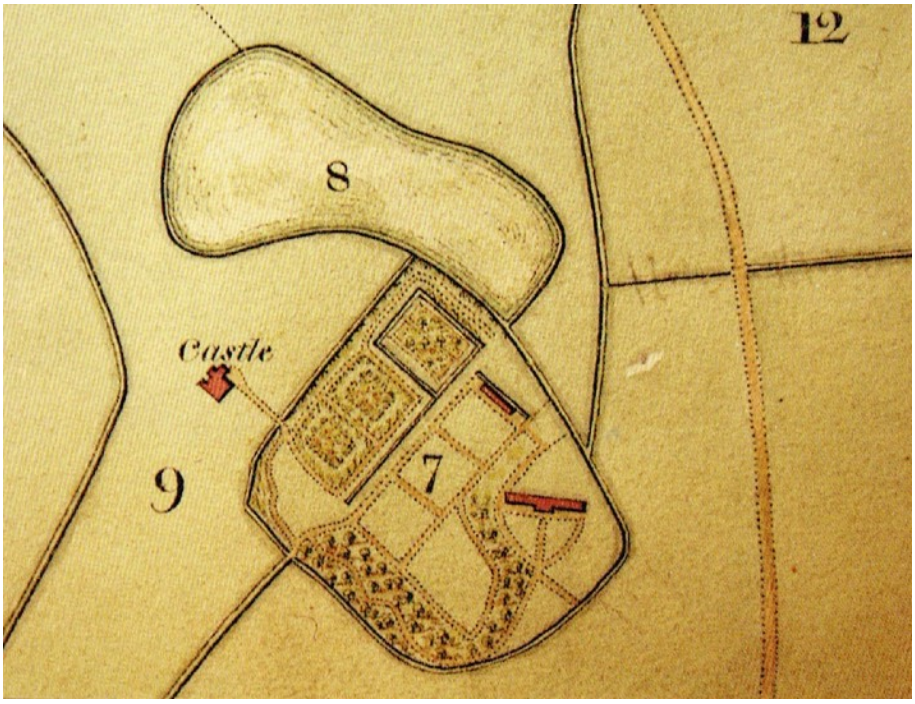

Figure 12. Doddington Hall, detail from estate map of 1815, Cheshire Record Office DDB/Q/2 no. VII. Permission applied for.

The transition post-Dissolution from medieval monastic landscape to Renaissance garden was rather more abrupt than was the case with solely secular properties. As well as instances of monastic structures being adapted for residential use, Titchfield Abbey in Hampshire, Wroxton Abbey in Oxfordshire and Combe Abbey in Warwickshire for example, we also have the wholesale takeover of associated gardens and parks and their water features. At Bindon Abbey, Wool, Dorset, a Cistercian House founded in 1172, the buildings were converted into a house in 1539 by Sir Thomas Poyning. Although the house itself was destroyed during the Civil War a fine series of earthworks illustrates the transition from monastic landscape to pleasure garden. [128] Thomas Howard purchased the property in 1544 and, as Mowl suggests, 'only five years after the Dissolution there would still have been some of the nine monks who had been pensioned off, or skilled *conversi* in

[128] Royal Commission on Historic Monuments (England), 'Wool', in *An Inventory of the Historical Monuments in Dorset, Volume 2, South east* (London, 1970), pp. 402-10.

Wool village, who understood the system of sluices that kept the waters flowing.' [129] Amongst a series of sluices and canals were added a lozenge shaped pool with central island within a square moated enclosure considered by Mowl to be the earliest instance of this form in England, a form echoed at Raglan, Chipping Campden, Gloucestershire and to a certain extent, Hanwell. Further to the east was a larger rectangular moated area within which was situated a mount surrounded by a water filled ditch (Figure 13). The whole composition, according to Mowl, 'make up a Tudor water garden on a grand scale, one befitting a house of a cousin of the Queen. […] Here better than anywhere else it is possible to evoke the spirit of that great

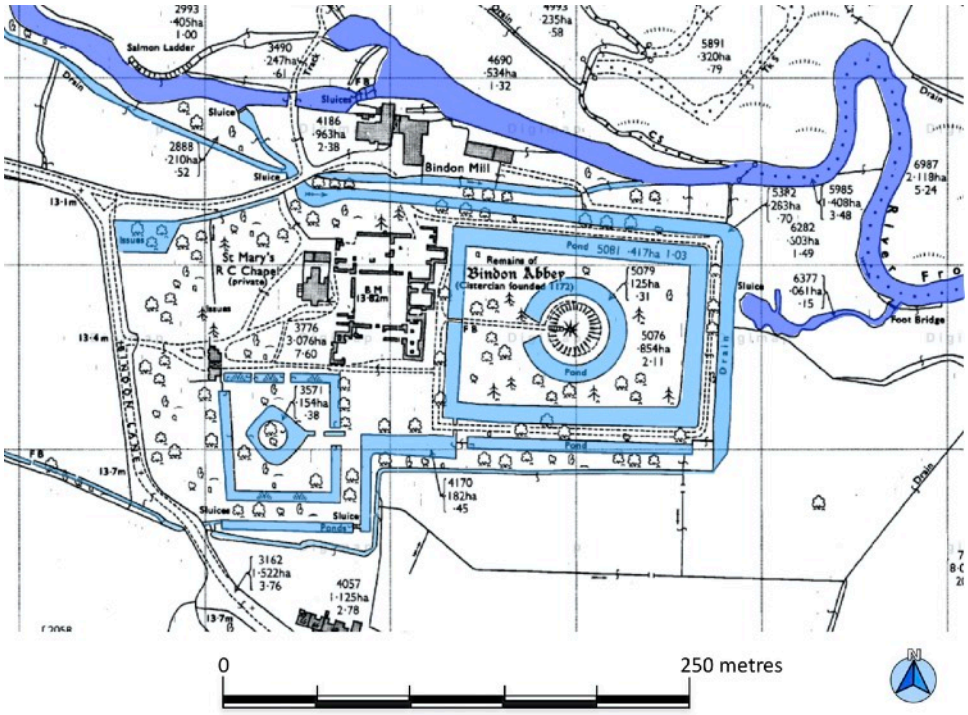

Figure 13. Bindon Abbey, plan of earthworks from 1970 OS 6 inch map.

[129] Timothy Mowl , *The Historic Gardens of Dorset* (Stroud, 2003), p. 16.

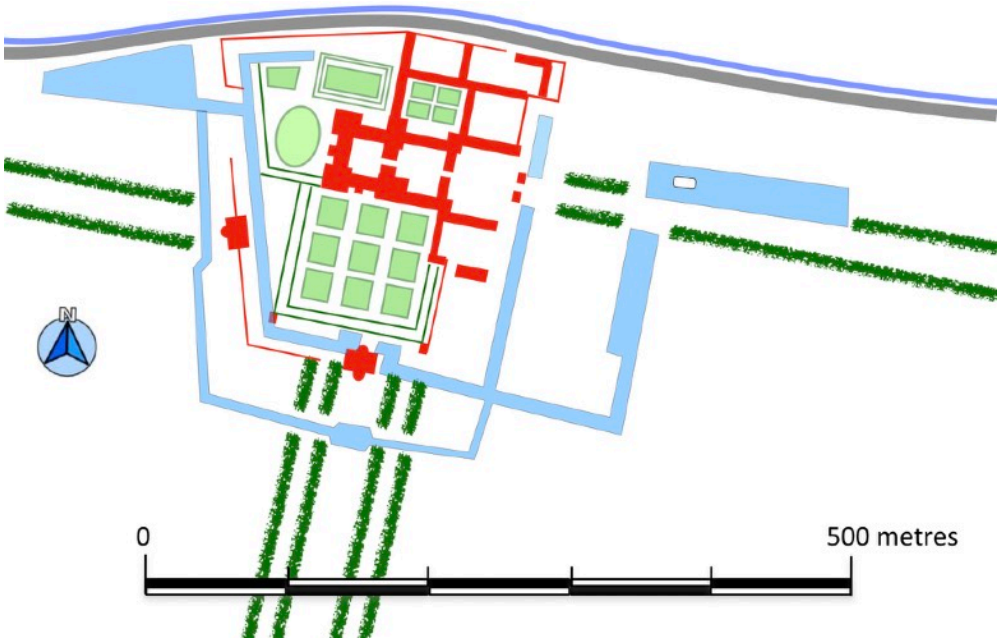

Figure 14. Theobalds, plan of gardens, reconstruction after Andrews (1993).

garden which William Cecil, Lord Burghley created […] at Theobalds in Hertfordshire.' [130] The importance of Theobalds as a model for garden design moving into the next century is hard to exaggerate (Figure 14). Strong says, 'Planted in the decade 1575 to 1585 Theobalds was the most influential Elizabethan garden, although its actual appearance and detailed layout can only be a matter for speculation.' [131] Situated close to the capital the manor was purchased by William Cecil in 1564. Work on the great courtyard house was completed in 1585; the interior echoing in many ways some of the extravagances of Italian gardens of the period. [132]

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[130] Ibid., pp. 17-9.

[131] Strong, *The Renaissance Garden*, p. 154.

[132] Martin Andrews, ' Theobalds Palace: The Gardens and Park', *Garden History,* vol. 21, no. 2 (1993), p. 130.

The gardens were built, as had become the practice at the time, around a series of walled courts with walks, hedges and arbours and, in discrete beds, plantings of what are often termed 'knot gardens'. One of the more distinctive features of the formal garden layout was the use of knots: geometric plantings defined by low hedges and sand or gravel. The origins of this motif in garden design remain obscure but it is generally recognised that the earliest depiction is in Colonna's notoriously obscure *Hypnerotomachia Poliphili* first printed in 1499. [133] Tom Turner, amongst others, conjectures that these decorative schemes are derived from Islamic carpets. [134] One of the first English references to knot gardens is in the contemporary account of the wedding of Catherine of Aragon to Arthur, Prince of Wales at Richmond in 1501.

> […] most faire and pleasant gardeyns, with ryall knots aleyed and herbid; many a marvellous beast, as lyons, dragons, and such other of dyvers kynde, properly fachyoned and carved in the grounde, right well sandid and compassed in with lede. [135]

Stephen Hawes' romance, *Passetyme of Pleasure, or the History of Grande Amour and la Bel Pucel* published in 1509 describes the design like this,

> With Flora paynted and wrought curiously,
> In dyvers knottes of mervaylous gretenes.
> Rampande lyions stode up wondersly,
> Made all of herbes with dulcet swetenes. [136]

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[133] Francesco Colonna, *Hypnerotomachia Poliphili (*Venice, 1499).

[134] Tom Turner, *Garden History, Philosophy and Design* (London, 2005), p. 221.

[135] Quoted in Christopher Thacker, *The Genius of Gardening – The History of Gardens in Britain and Ireland (*London, 1994), p. 41.

[136] Stephen Hawes, *Passetyme of Pleasure, or the History of Grande Amour and la Bel Pucel,* ed. W. E. Mead, *Early English Text Society*, vol. 19 (London, 1928) lines 2010-2.

Whatever the origins a close relation to the knot garden was the water parterre, a geometric arrangement of water channels and raised ground for planting. However, no such decorative element existed at Theobalds. The water features were, though extensive, from a design perspective fairly straight forward. They consisted of a series of moats and canals defining the garden plots and enabling a visitor of 1598 to 'go into the garden, encompassed with a ditch full of water, large enough for one to have the pleasure of going in a boat and rowing between the shrubs'. [137] Strong is of the opinion that, 'This arrangement could come from only one source, France, where the evolution of the moat into the decorative canal was one of the most striking features of garden design under the Valois.' [138] Margaret Willes, on the other hand, suggests that the water gardens at Wacquem in Flanders, possibly visited by William Cecil in the 1550s were a more likely influence. [139] Continental input there may have been but, as we have seen, there are ample examples of similar features laid out prior to work on the garden at Theobalds. Improvements continued to be made into the early years of the next century at which point we learn of the involvement of Sir Walter Cope. [140]

Perhaps the finest surviving garden of the late sixteenth century, albeit only in the form of earthworks, is at Holdenby in Northamptonshire. Its significance is also enhanced by the consideration that it may be one of the earliest garden designs in the country said to consciously echo some principles of Italianate design, specifically a

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[137] Quoted in Strong, *The Renaissance Garden*, p. 53, Paul Hentzner, *Travels in England During the Reign of Queen Elizabeth* (London, 1797).

[138] Ibid., p. 53.

[139] Margaret Willes, *The Making of the English Gardener, Plants, Books and Inspiration 1560-1660* (Newhaven, 2011), p. 19.

[140] See below, p. 90 for Sir Walter Cope at Theobalds.

strong sense of symmetry, terracing and the whole looking down onto a series of water features all anchored by the central positioning of the house. Constructed on the orders of Sir Christopher Hatton (1540-91) late in the 1570s, the gardens may have been subject to some alteration whilst held by the Crown between 1607 and 1651. [141] Hatton's motivation for the vast expense involved is expressed by Wallace MacCaffrey as a determination, 'to surpass his colleagues' seats, such as Burghley's Theobalds, in grandeur'. He goes on to assert that, 'Hatton set out to erect on his ancestral Northamptonshire manor of Holdenby a palace that would fulfil his ambition.' [142] Despite suggestions of Catholic leanings there is no evidence that he ever travelled abroad although his protégé, Sir Henry Unton, undertook a grand tour, including a visit to Italy, in 1575 and may have returned with material relating to garden designs. [143] Alternatively a Catholic priest named Hugh Hall may have had a hand in the design, going on later to work for the notable recusant, Thomas Tresham. [144] In addition, according to Andrew Eburne, a well known Dutch engineer, Pieter Morris was advising on the hydraulic engineering. [145] The grounds lay on a south facing slope to the south of his huge courtyard house and consisted of a central parterre flanked by several gently descending terraces overlooking a complex of pools. (Figure 15) Strong considers it, 'perhaps a distant response to gardens such as the Vatican's Villa Belvedere, the Villa D'Este and the Villa Lante, Bagnaia.' [146]

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[141] Royal Commission on Historical Monuments (England), *An inventory of the historical monuments in the North West Northamptonshire* (London, 1975), p. 106.

[142] Wallace MacCaffrey, 'Hatton, Sir Christopher' (c. 1540–1591)' *ODNB*.

[143] M. Greengrass,. 'Unton [Umpton], Sir Henry (c. 1558–1596), *ODNB*.

[144] Henderson, *The Tudor House and Garden,* p. 115.

[145] Andrew Eburne, 'The Passion of Sir Thomas Tresham: New Light on the Gardens and Lodge at Lyveden', *Garden History,* vol. 36, no. 1 (2008), p. 118.

[146] Strong, *The Renaissance Garden*, p. 5.

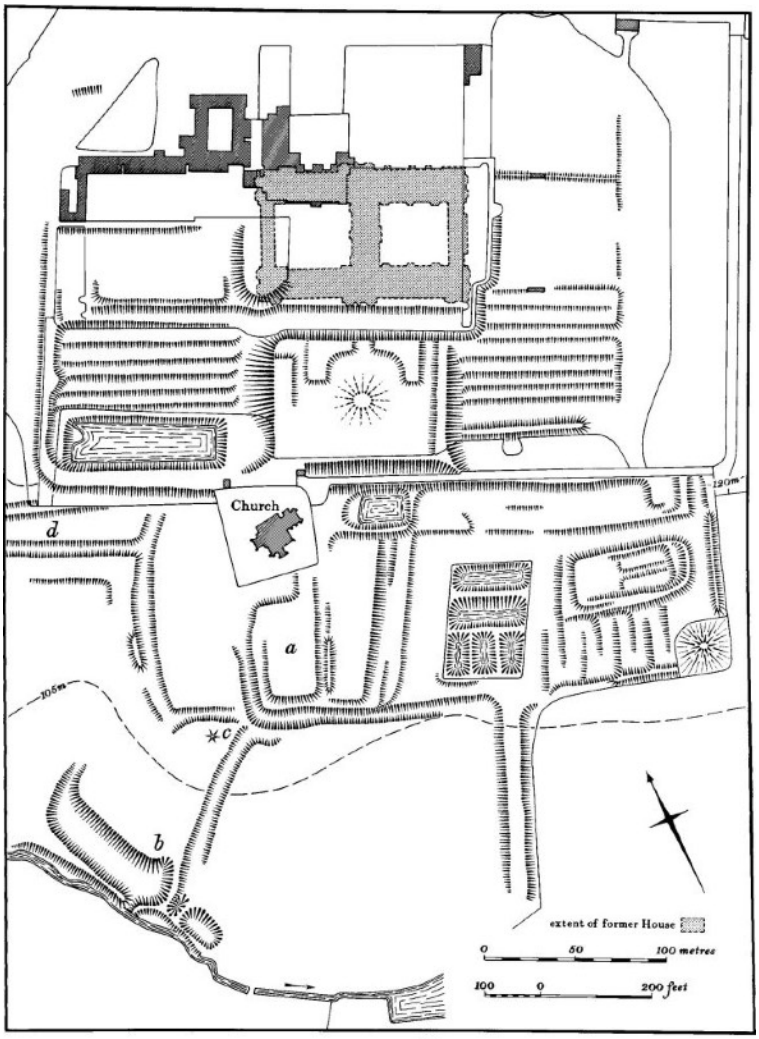

Figure 15. Holdenby, plan of the earthworks. © RCHME.

More developed and arguably more sophisticated instances of this layout can be seen at Chipping Campden and Enstone. [147] In these cases whilst some Italian influence may be discerned in the strong impetus towards symmetry and extensive use of terracing, the earth-working remains part of the native tradition. Also underway at broadly the same time was the garden of Sir Francis Carew (1530 -1611) at Beddington in Surrey. This may have been influenced by the work of the French engineer and ceramicist Bernard Palissy (c. 1510-89). Some idea of the decorative

[147] See below, pp. 120-7 for Enstone and 130-3 for Campden.

elements associated with the waterworks comes from the German traveller Baron Waldstein who visited in 1600 and reported on:

> … a most lovely garden belonging to a nobleman called Francis Carew. A little river runs through the middle of this garden, so crystal clear that you see the water-plants beneath the surface. A thing of interest is the oval fish-pond enclosed by trim hedges. The garden contains a beautiful square-shaped rock, sheltered on all sides and very cleverly contrived: the stream flows right through it and washes all around. In the stream one can see a number of different representations: the best of these is Polyphome playing on his pipe, surrounded by all kinds of animals. There is also a Hydra out of whose many heads the water gushes. [148]

A 'little house' that may have covered the water spouting hydra was repaired in 1650 when accounts list the necessary materials as being 'Laths, lath-nails, hair and tile pins', a strong indication of a timber-framed structure with walls of lath and plaster and a tiled roof. [149] In coming later to consider Hanwell's 'House of Diversion' a description from 1611 is of special interest:

> Not far away is an exceedingly fine pleasure house built all of mineralibus or various kinds of brass in cheerful fashion, the ceilings made like the sky from which rain pours down. Coelum pluens etc. On top is a fine and pleasant cabinet on whose ceiling Flanders Holland and Zealand etc. are beautifully painted. There is a mirror in the pleasure house which is laid in with all sorts of marble. Lapide Lydio. [150]

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[148] G. W. Groos (translator), '*Diary of Baron Waldstein: A Traveller in Elizabethan England* (London, 1981), pp. 163-5.

[149] John Phillips and Nicholas Burnett, ' The Chronology and Layout of Francis Carew's Garden at Beddington, Surrey', *Garden History*, vol. 33, no. 2 (2005), p 166.

[150] Quoted in Roy Strong, 'Sir Francis Carew's Garden at Beddington', in Edward Chancey and Peter Mack, (eds.), *England and the Continental Renaissance: Essays in Honour of J. B. Trapp* (Woodbridge, 1990), p. 235.

Excavations in 1995/96 uncovered the possible remains of a grotto and significantly also unearthed several fragments of Palissy-style ceramics and a small copper fish, probably designed to be animated by the flow of water. [151]

The unfinished gardens of Lyveden New Bield, Northamptonshire from 1597 are a further example of an elaborate water garden of the period. What is most striking about the site today is the sheer scale of the engineering involved with mounts and banks towering over an essentially flat landscape. Anthony Brown and Christopher Taylor explained the background to the work:

> The estate at Lyveden passed to the Treshams in the mid-fifteenth century and it was this family who in 1540 obtained a licence to empark 420 acres of land around the manor house there, now known as the Old Bield. In the late 1590s Sir Thomas Tresham started work on the New Bield which was intended as a symbol of the Passion of Christ. By I597 the building, designed by Robert Stickells, was well advanced but the work was still not complete by 1605 when Sir Thomas died and the building was abandoned. [152]

The garden had its physical origins in an earlier moated site that lies immediately to the west. A smaller moated area which may have been an enclosed garden, incorporated into the west side, testifies to the incomplete nature of the project. The principal element of the garden was to be a large square moated enclosure framed by banks and with two spiral mounds projecting into the moat at the southern corners (Figure 16). The central area was planted as an orchard with the trees arranged in circular rings, what Eburne refers to as 'a c*oup de theatre*, a dramatic

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[151] Phillips and Burnett, 'Beddington', *Garden History,* pp. 172-6.

[152] A. E. Brown and Christopher Taylor, ' The Gardens at Lyveden, Northamptonshire, *Archaeological Journal*, vol. 129, no.1 (1972), pp.154-60.

revelation to the visitor as he ascended the terrace and mounts to the north. Like the lower orchard, it represented order and fecundity, beauty and productivity.' [153] Square mounds mark the ends of terracing to the north side of the moat and beyond that further terracing takes the garden down a slope towards the main house. The precise arrangement of these terraces requires further study as there is an undocumented amphitheatre like terrace lying to the east of the original house. Correspondence survives indicating the close interest Tresham took in the project, specifying measurements and materials for features such as arbours, paths, a sunken alley and a bowling green and requiring that the moat should be stocked with 'breeding congers'. [154] The effect of all this mingling of old and new is to end up generating rather haphazard garden plans in an era which was striving for regularity. In terms of the overall conception of the design for the associated lodge Eburne makes a number of points relating particularly to Tycho Brahe's observatory at Uraniborg commenting on the geometric layout, the sophistication in its use of water and noting that it was 'an influential model for the idea of the garden lodge as place of study and meditation'. [155] These are all points that could apply to Sir Anthony Cope's later 'House of Diversion' at Hanwell.

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[153] Eburne, 'The Gardens and Lodge at Lyveden', p. 124.

[154] Letter from Sir Thomas Tresham, Historical Manuscripts Commission, *Various Collections,* III , (1904) quoted in Brown and Taylor, 'The Gardens at Lyveden, Northamptonshire', p. 159.

[155] Eburne, 'The Gardens and Lodge at Lyveden', p. 119.

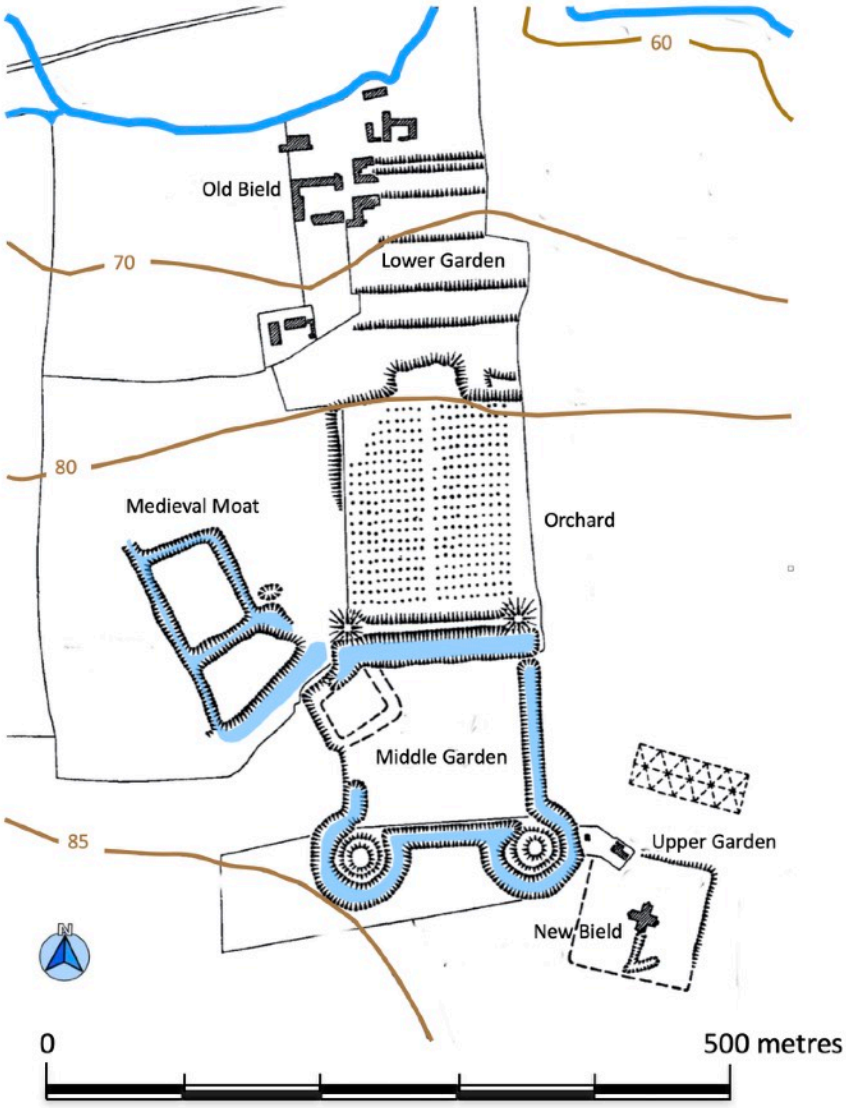

Figure 16. Lyveden, plan of earthworks, adapted from 1920 OS 6 inch map.

It seems that truly innovative additions to th garden scene had to wait on the new century and the arrival of expert engineers from the continent. The latter half of the sixteenth century saw many instances of garden making incorporating ambitious water features but drawing on an established tradition of design and a pre-existing body of engineering expertise. Significant continental influences may be discerned in the architecture of the assorted structures that were brought in late in the sixteenth

century to grace the gardens of the elite. These influences also applied to the design and decor of the great houses that were associated with these gardens although this in itself remains debatable. In analysing structural elements of the Cecils' work at Burghley in the late sixteenth century Mark Girouard argues that, 'the native Perpendicular Gothic tradition was too strong to succumb to the new style; that for thirty years or so in the middle of the century the two joined battle and classical architecture, having influential backers, nearly won the day; but that in the end the victory went to the native style.' [156] However, it is in the nature of garden buildings that as comparatively low cost, sometimes ephemeral, structures, they are ready arenas within which to experiment and boast of one's acquaintance with the very latest fashionable styles. Even in these architectural instances however, as Strong argues, 'the floodgates never opened until after Inigo Jones' second visit in 1613-14.' [157] Personnel and ideas, from France in particular, were to be brought in to contribute to the structural elements of gardens associated with some of the highest in the land and water features became a major component in this continentally inspired adventure.

Evidence for early garden making in association with the construction of the house at Hanwell is thin on the ground. We have already considered the 1525 bequest of £20 for the making of a pool. [158] Yeates notes the degree of terracing that was required to create a level area for the building, some of which extended to the north

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[156] Mark Girouard, 'Elizabethan Architecture and the Gothic Tradition', *Architectural History*, vol. 6 (1963), p. 30.

[157] Strong, *The Renaissance Garden,* p.4.

[158] See above, p. 44 for details.

and east, and reported on a series of shallow pits to the east of the house. [159] These may well have been planting pits for elements of a formal garden. Excavations in 2014 in an area known as the Sunken Garden (HANI(W)) indicated that this feature had originated as a quarry and given the lack of brick fragments amongst the debris and back-fill this arguably pre-dates the building of the Castle. However, given its proximity, it seems likely that landscaping of the area would have closely followed the completion of the residence. Evidence from elsewhere in the park for the sixteenth-century layout is limited. The LIDAR image of the paddock on the south side of the valley shows clearly the way in which the ridge and furrow of the medieval open fields was cut across by a double bank and ditch (Figure 55). As it is probable that the process of enclosure went hand in hand with the acquisition of the manor by the Copes this earthwork may be an indication of the boundary to the park in the early sixteenth century prior to later expansion. The existence of a deer park in 1563 is suggested by the provision made of venison to Banbury Corporation. [160] Further evidence of the original extent of the deer park comes from the field names used late in the eighteenth century (Figure 17). It seems likely that the next major phase in the expansion of the park and garden was at the behest of the 1st baronet, Sir Anthony and his brother Walter Cope in the opening decades of the seventeenth century, a project undertaken with full and expert knowledge of some of gardens described above.

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[159] Yeates, *Archaeological Excavation at Hanwell Castle,* p. 42.

[160] Beesley, *History of Banbury*, p. 230.

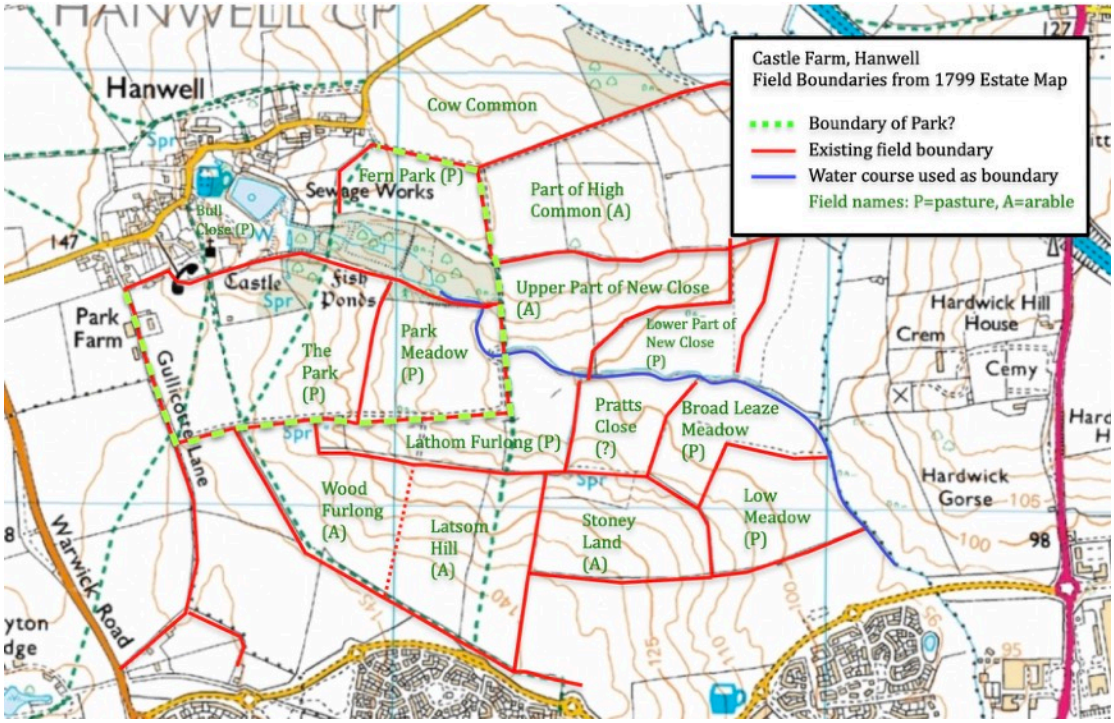

Figure 17. Hanwell, Park Boundary. [161]

[161] Field names taken from A/TC, *Welch Farm Estate map* (1799),

Continental Engineers and their Influence

Impressive and technically accomplished though the gardens of Italy certainly were, what is questionable is the extent to which they had an effect on garden design in England and by what mechanism such influences, if any, were conducted. In considering the ways in which local ingenuity was enhanced by imported ideas and expertise it is useful to determine how this may have happened. A major factor in the development of gardens later in the seventeenth century, and particularly into the eighteenth century, was the Grand Tour. As Edward Chancy and Timothy Wilks remarked of continental travel early in the seventeenth century,

> every Jacobean tour at some point in its conception was charged by an impulse to travel engendered by England's long period of isolation from Catholic Europe. While late-Elizabethan England had drawn heavily upon its native inventiveness in the arts it had largely escaped the new stimulus being provided [by events in Europe]. [162]

This had limited the amount of personal contact with early continental developments. Elizabeth Hyde makes the point that, 'The Renaissance garden was, like so many other aspects of Renaissance culture, shaped by the appearance of the printed book.' [163] In the context of water gardens, without a doubt the most important works were those published by the De Caus family early in the seventeenth century. Other volumes from the sixteenth century were in circulation. *A Brief Treatyse of Gardening* of around 1560 by Thomas Hill (c. 1528-74) was the first printed book in English on

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[162] Edward Chaney and Tim Wilks, *The Jacobean Grand Tour: Early Stuart Travellers in Europe (*London, 2014), p. 1.

[163] Elizabeth Hyde (ed.), 'Introduction', *A Cultural History of Gardens the Renaissance* (London, 2013), p. 9.

the subject and was followed by *The Profitable Arte of Gardening,* published in 1563 and *The Gardener's Labyrinth*, dedicated in 1577 to William Cecil; all were hugely successful in terms of sales. [164] Apart from the well known illustration of a gardener using a useful piece of technology, a pump to water the beds, Hill has little to say on the subject of water as a predominantly decorative element in the garden. This was presumably because his publication was aimed at gentry of the middling sort. In 1568 Hans Vredeman de Vries (1527-c.1607) published in Antwerp his *Artis Perspectivae* which contained a number of illustrated examples of fountain design, a volume which the earl of Leicester was familiar with and may have inspired the design for his fountain at Kenilworth. [165] Another notable source of illustrative material was Jacques Androuet du Cerceau's (1510-84) book, printed in 1576, *Les Plus Excellents Bastiments de France* which featured, amongst other sites, the gardens at Blois, Fontainebleau and Gaillon. The ceramicist and engineer Bernard Palissy's important work *Discours admirables, de la nature des eaux et fonteines* published in Paris in 1580 exists as a manuscript translation by one Thomas Watson for Henry Percy, the 9th Earl of Northumberland but there was no English edition. [166] It is possible, however, that some personal contacts may have resulted in the import of some of Palissy's ideas and materials for work in the 1570s on the gardens at Beddington. Illustrative material regarding the great Italian gardens does not seem to have become available until the following century. Detailed specifications for advanced water engineering in gardens by the engineer Salomon de Caus (1576-1626) may have acted as a blueprint for the Enstone Marvels and Hanwell's 'House of Diversion'. His

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[164] John Considine, 'Hill, Thomas [pseud. Didymus Mountaine] (c. 1528–c. 1574)', *ODNB*.

[165] Godfrey, 'Sources for the New Fountain' , *The Elizabethan Garden at Kenilworth Castl*e, p. 109.

[166] Hestor Lees-Jeffries, 'An Elizabethan translation of Bernard Palissy's "On Waters and Fountains"', *Studies in the History of Gardens & Designed Landscapes,* vol. 30, no. 1 (2010), pp. 1- 56.

magnum opus, *Les Raisons des forces mouvantes. Avec diverses machines tant utilles que plaisantes ausquelles sont adjoints plusieurs desseings de grotes et fontaines* appeared in 1615. [167] The first fifty pages or so of a later volume, John Bate's, *The Mysteryes of Nature and Art* published in 1634, covers some of the same ground with a series of small scale experiments. [168] Despite the availability of publications, de Caus's impact on the engineering of water features in England seems to have mainly come about through his employment in this country.

Salomon De Caus was probably born and raised in Dieppe, the significance of Dieppe lying in its active and innovative programme of municipal waterworks. Writing about their formative years Johnson remarks that, 'through the years marking the early lives of the de Caus brothers and beyond, the waterworks remained a significant source of civic pride for Dieppe and its citizens and required the regular attention of workmen and engineers. This elevation of the hydraulic arts cannot have failed to enter into the consciousness of town residents among them the young Salomon and Isaac de Caus.' [169] Luke Morgan established that Isaac was Salomon's younger brother, one who subsequently took over the family business. [170] Little is known of Salomon's early career although he spent time in Italy prior to 1598 where, 'passing Pratolino five miles from Florence, among other grotto works with which the said house is richly ornamented, I saw a figure of a great Cyclops, in the body of

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[167] Salomon De Caus, *Les Raisons des forces mouvantes. Avec diverses machines tant utilles que plaisantes ausquelles sont adjoints plusieurs desseings de grotes et fontaines* (Frankfurt, 1615).

[168] John Bate, *The Mysteryes of Nature and Art* (London, 1634), pp. 1-53.

[169] Paige Johnson, 'Producing pleasantness: the waterworks of Isaac de Caus, outlandish engineer', S*tudies in the History of Gardens & Designed Landscapes*, vol. 29, no. 3 (2009), p. 176.

[170] Luke Morgan, *Nature as Model, Salomon de Caus and Early Seventeenth-century landscape Design* (Pennsylvania, 2017), pp. 34-6.

which are some grottoes very artificially made'. [171] Designs published later in *Forces Mouvantes* suggest at least an acquaintance with the works at the Villa d'Este, Tribolo's Fountain of the Labyrinth at the Villa Medici at Petraia and possibly the *Sacro Bosco* at Bomarzo. By the turn of the century Salomon was plying his trade at the Coudenberg Palace in Brussels where he worked on fountains and grottoes until his departure in 1610. This was the longest settled period in his entire career. The precise point at which he arrived in London as tutor to Henry, Prince of Wales (1594-1612) and advisor for the prince's ambitious plans to redevelop the gardens at Richmond Palace, is unknown. However, he was responsible for work at Richmond in 1611; this included the installation of a large cistern. The following year he was commissioned to design three fountains for Robert Cecil at Hatfield House, only one of which was completed. Here he could have made the acquaintance of either Sir Francis Bacon or Sir Walter Cope but there is no evidence of his influence on two important gardens: Gorhambury and Kensington. [172] He was also employed by Prince Henry's mother, Queen Anne of Denmark, for projects at Greenwich where he may have designed a fountain and a small grotto. At Somerset House he created a mount, described by a German visitor in these terms:

> On the side facing the palace it is made like a cavern. Inside it sit the Muses, and have all sorts of instruments in their hands. Uppermost at the top stands Pegasus, a golden horse with wings. On the mountain are four small arches, in each rests a naked statue of marble. They have cornucopia in their hands and under their arms jugs from which water flows into the basin about four good paces wide, and is all around the mountain. They are supposed to represent four rivers. Among others there stands above such a female figure in black marble in gold letters Tamesis. It is the river on which London lies and flows next to this garden. The water was let play. Above at the very top of the crag it sprang up as

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[171] De Caus, *Les Raisons des forces mouvantes*, Book II, Problem 14.

[172] See below, pp. 104-8 for Gorhambury and pp. 95-8 for Kensington.

> thick as an arm, and to and fro out of the mountain as well. It is thus a very beautiful work and far surpasses the Mount Parnassus in the Pratolino near Florence. [173]

There was also a fountain representing 'a female figure [which] gives water out of a cornucopia [and] was gilded all over' (Figure 18). [174]

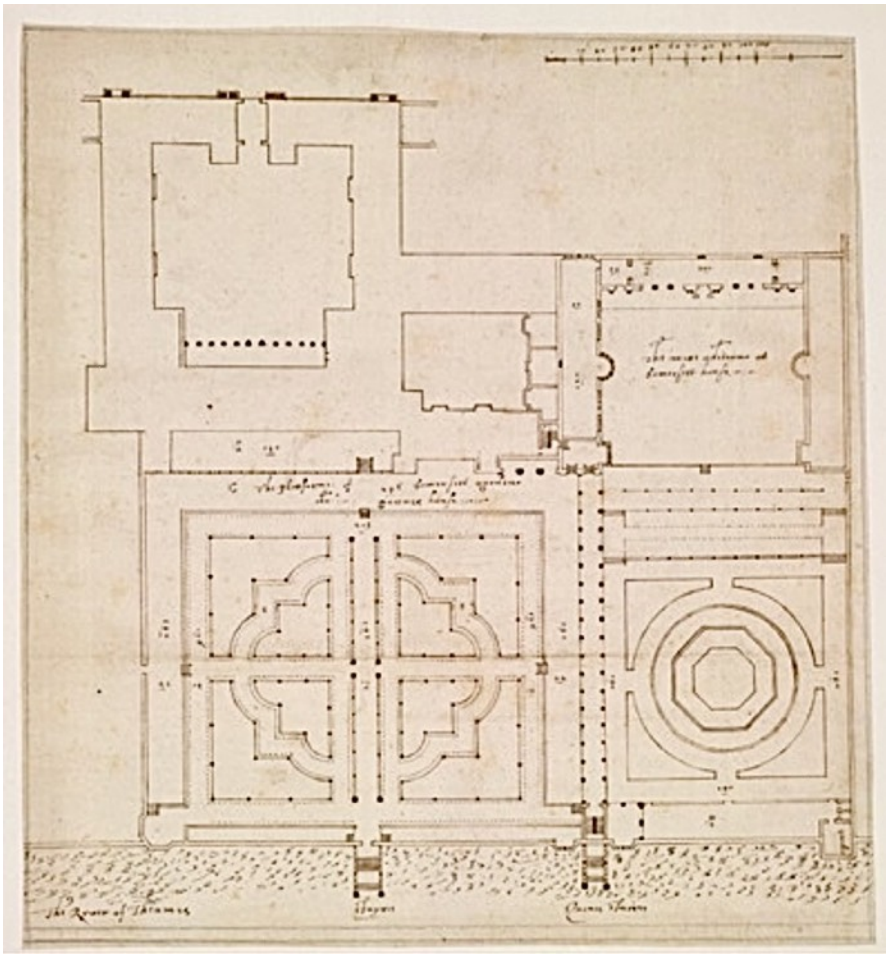

Figure 18. Somerset House, London, Smythson's plan of the gardens, RIBA archives SC229/I/13. By permission RIBA.

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[173] Johann Neumayr, *Des Durchlauchtigen,* (Leipzig, 1620), quoted in Strong, *The Renaissance Garden*, p. 96.

[174] From an archaeological perspective there is an important survival of these works, that were demolished in the 1640s, in the shape of a cistern in Strand Lane. Originally thought to be a Roman bath its true nature was established by Michael Trapp, 'The Denmark House Helicon: iconography and surviving traces', *Studies in the History of Gardens & Designed Landscapes*, vol. 32, no. 4 (2012), pp. 241-57.

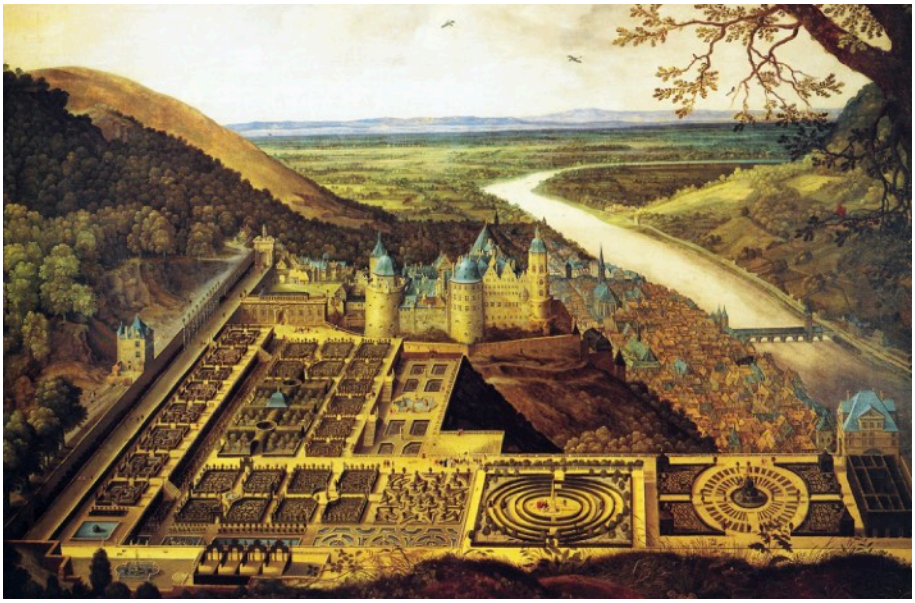

Figure 19. Heidelberg, painting of the *Hortus Palatinus* by Jacques Fouquier 1620. by permission Palatinate Museum, Heidelberg.

After the death of his patron, Prince Henry, Salomon remained in London until late in 1613 when he left to take service with Frederick V, the Elector Palatine, who had married Henry's sister, the Princess Elizabeth. By 1614 he had established himself in Heidelberg where he began work on his masterpiece, the *Hortus Palatinus*, attached to Heidelberg Castle (Figure 19). This featured extensive waterworks and although construction was brought to a halt in 1619 by the outbreak of the Thirty Years War there are several significant surviving elements. Following his return to Paris in 1619 he focused on his writings and brought out an account of the gardens at Heidelberg as well as works on perspective, time-keeping, sanitation and cartography before his death in 1626. [175]

In considering the state of English gardens at the end of the first quarter of the seventeenth century from an archaeological perspective it is clear that whilst

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[175] Morgan, *Nature as Model,* pp. 63-71.

architecture was well set on a course towards closer conformity with continental classicism the gardens themselves were still in the local traditions of earth and water works. Although Salomon de Caus had brought ideas and expertise relating to fountains and grottoes they were largely the province of the elite and were no doubt bracketed together as wonders and marvels rather than everyday components of a working estate. All of this begs the question as to what such features are doing in the gardens of the impecunious Thomas Bushell of Enstone and the virtuoso Sir Anthony Cope of Hanwell.

CHAPTER 3, THE SEVENTEENTH CENTURY

The Copes in Ascendency

Responsibility for any development of the house at Hanwell and its associated landscape through the sixteenth century rested with representatives of two generations of the Cope family: Anthony I (1495?-1551) and the first baronet, Sir Anthony II (1550-1614). As we have seen, Anthony I inherited and went on to bring the court action for the completion of the property against the executors of his father's will. [176] Elizabeth Allen notes that, 'Cope's desire for the rapid completion of his residence was probably strengthened by his marriage, by 1517, to Jane, (d. 1569/70) daughter of Matthew Crews, of Pynne, in Stoke English parish in Devon'. [177] Anthony may have attended Oriel College but, not unusually, does not appear to have graduated. Subsequently, according to Anthony Wood, he, 'went into France, Germany, Italy and elsewhere; in which places visiting the universities and joining this company to the most learned men of them, became an accomplished gentleman'. [178] Wood goes on to describe Cope's publications, two of which survive: a book on the psalms and an account drawn from classical authors of Hannibal and Scipio Africanus. The latter was dedicated in 1545 by its printer, Thomas Berthelet, to King Henry VIII. [179] It is possible that whilst in Italy such an accomplished traveller and scholar might have

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[176] See above, p. 44 for details of this case.

[177] Elizabeth Allen, 'Cope, Sir Anthony (1495/6–1551)', *ODNB*.

[178] Anthony Wood, *Athenae Oxonienses: an exact history of writers and bishops who have had their education in the University of Oxford* , vol. 1 (Oxford, 1813), p. 193.

[179] Marie-Alice Belle and Brenda Hosington, 'Translation, history and print: A model for the study of printed translations in early modern Britain', *Translation Studies*, vol. 10, no. 1 (2017) , p. 14.

engaged with current fashions in garden making but there is nothing in his later career that suggests such an interest. Indeed the 1525 bequest of £20 hints that he may have needed some encouragement to undertake work on the gardens at Hanwell. Allen describes him as profiting from, 'extensive cattle and sheep farming, and the aggressive management of tenements and cottages inherited and acquired in Banbury'.[180] He maintained profitable links with the Spencer family by obtaining in 1534 a wardship of Sir William Spencer's heir. Always seen as a loyalist, he enjoyed a number of posts at court becoming chamberlain to Katherine Parr, Henry VIII's last queen, until her death in 1548. This may be the context for the extraordinary armorial panel of the Royal arms found buried in the wall of cottage in the village in 2014. [181] In 1536 Anthony was granted Brooke Priory in Rutland and may have been responsible for developing the elaborate terraced water gardens there. [182]

Upon Anthony's death at Hanwell in 1551 the estate was inherited by his son Edward, who purchased the property of Tangley in Oxfordshire, favoured by later generations. [183] He in turn had passed it on to his son, Anthony II by 1571. This Anthony, destined to become the first baronet, was born in 1548. After the death of his father in 1557 his mother Elizabeth remarried in 1561 to George Carleton, a notable puritan whose, 'radical protestant influence affected Anthony'. [184] With a base in the East Anglian fens the fact that Carleton was, 'a pioneer in the introduction of Dutch

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[180] Allen, 'Cope, Sir Anthony (1495/6–1551)', *ODNB*.

[181] See the Hanwell Project web-site, http://www.polyolbion.org.uk/Hanwell/August14.html.

[182] William Page, 'House of Austin Canons: Priory of Brooke', in *Victoria History of the County of Rutland,* vol. 1 (London, 1908), pp. 159-61.

[183] Hants. CRO, 43M48/121, (Conveyance of Teyngle or Tyngle [Tangley] Grange, Oxon, 1551).

[184] Elizabeth Allen, 'Cope, Sir Anthony, first baronet (1548-1614)', *ODNB*.

methods of mechanical drainage by windmills, engines and devices never known or used before' may also have been relevant in the education of the young Anthony. [185] In 1588 Sir Anthony was appointed to serve on a commission of enquiry into issues affecting Carleton's interests in aspects of Fenland drainage. [186] He began his long parliamentary career at the age of 23 and allied himself with a caucus that, according to Allen, combined, 'defence of freedom of debate in the Commons with advocacy of further church reform'. [187] His adoption of a presbyterian view of church management was expressed by his appointment in 1586 of John Dod (1545-1645) as Rector of Hanwell and much later, in 1614, a similarly committed puritan, Robert Harris (1581-1658). His puritan credentials were further enhanced locally by his role in 1589 in the suppression of the Neithrop maypole and associated 'Whitsun Ales, May Games and Morris dances'. [188]

On the national stage his attempt in 1587, following the puritan synod held early that year, to further church reform by introducing a bill to presbyterianize the Church of England and present a revised prayer book to Parliament earned him a place in the Tower of London. However, as Beesley remarks, 'The Queen's displeasure does not seem to have been lasting for she knighted him in 1590 in which year he was also appointed sheriff for Oxfordshire […] In 1601 Sir Anthony made preparations for a visit which the Queen intended to pay him at Hanwell, but this does

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[185] P. W. Haster, 'Carleton, George (1529-90)', *HOP, 1558-1603*

[186] Mark Kennedy, 'Fen Drainage, the Central Government, and Local Interest: Carleton and the Gentlemen of South Holland', *The Historical Journal* , vol. 26, no. 1 (1983), p. 29.

[187] Allen 'Cope, Sir Anthony, first baronet (1548-1614)', *ODNB*.

[188] William Potts, *A History of Banbury* (Banbury, 1958), pp. 57-8.

not seem to have taken place'. [189] Sir Anthony is mentioned as being in attendance at the wedding of one of the Queen's maids of honour, Anne Russell, to lord Herbert, son of the earl of Worcester, in 1600. Viscount Dillon noted that he was, 'a great friend of Sir Henry Lee of Ditchley', an interesting Oxfordshire connection given the later development of the Enstone Marvels. [190] Some years earlier, in 1585, he had entertained the earl of Leicester on a visit to Hanwell. As with most gentry of the period, Anthony was committed to improving the status of himself and his family. In 1603 his daughter Elizabeth was married to Richard Cecil, second son of the marquess of Exeter and a nephew of Robert Cecil. In 1610 he received a lease of woods in Whittlewood Forest and a grant of the manor of Bruern, Oxfordshire which became in effect a third family home after Hanwell and Tangley. His wealth and influence were further demonstrated when he accommodated James I and his queen for an overnight stay on 20 August 1605. [191] On 27 August 1612 the King was scheduled to, 'again become the guest of Sir Anthony Cope at Hanwell' but, 'this part of the gests appears to have been disarranged'. Nichols notes that, 'the visits were probably paid though not according to the predetermined dates'. [192] Some of the issues regarding accommodation at the time are evidenced by a letter from Sir Anthony regarding the visit of 1605:

> One of the principal causes of my joy is the hope that I shall have you at Hanwell, which the rather I presume of for that I had your promise at London,

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[189] Beesley, *History of Banbury*, p. 239.

[190] Viscount Dillon, 'A Procession of Queen Elizabeth to Blackfriars', *Archaeological Journal*, vol. 72, no. 1 (1915), pp. 69-74.

[191] John Nichols, *The Progresses, Processions, and Magnificent Festivities, of King James I,* vol. 1 (London, 1828), p. 527

[192] Ibid., vol. 2, p. 536

> that if you continued the circuit with the King, you would satisfy my request herein. To that end I have entreated of Mr. Rolls, the gentleman usher, my gallery which I mean to divide into two rooms, for your lordship and any other nobleman that you shall make choice of. I expected my brother according to his promise the last night, but have since received a letter, that in respect of christening Sir Thomas Smith's child it will be to-morrow in the afternoon before he come.—Hanwell, this 18 August 1605. [193]

In June 1611 Anthony was able to purchase a baronetcy for £10,000 as part of, what Katherine S. Van Eerde called, the, 'increasingly desperate drama of Jacobean finances'. [194] Part of his duty as a baronet was to support the settlement of Ulster and to that end he had some experience of castle building through the agency of his second son, also called Anthony (d. 1636). A survey from 1619 reveals the extent of his holdings: 'Mr. Cope, 3,000 ac., called Derrycrevy and Dromullie. A bawn of lime and stone, 80 ft. sq., 14 high, 4 flankers, in 3 of them he has built very good lodgings, 3 stories high, also two watermills and one windmill; near to bawn, 14 houses of timber, inhabited with English.' [195] E. M. Jope considers the cruciform house Anthony built at Castleraw, County Armargh, in 1618, to be inspired by properties in Northamptonshire, including the Lyveden New Bield. [196] The family may have genuinely seen themselves as improvers in the context of the Irish properties. Sir Anthony's approach to enclosure at home stood in marked contrast to that of his grandfather. Sir Anthony had been part of a committee charged with interrogating the

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[193] Cope, Anthony, letter to Earl of Salisbury (August 1605), http://www.british-history.ac.uk/cal-cecil-papers/vol17/pp374-409, accessed 11 January 2021.

[194] Katherine Van Eerde, 'The Jacobean Baronets: An Issue between King and Parliament', *The Journal of Modern History*, vol. 33, no. 2 (1961), p. 137.

[195] Nicholas Carew, *A book of the Plantation of Ulster*, Mss 613 Lambeth Palace Library. https://discovery.nationalarchives.gov.uk/details/r/9517ab48-f8e1-4321-82e2-499ccbcfe810, accessed 14 March 2020.

[196] E. M. Jope, 'Moyry, Charlemont, Castleraw, and Richhill: Fortification to Architecture in the North of Ireland 1570-1700', *Ulster Journal of Archaeology*, vol. 23 (1960), p. 104.

instigators of the ill-fated Oxfordshire uprising of 1596 and this experience may have coloured his views. As John Walter notes,

> Sir Anthony Cope was among those who wanted legislation against enclosure 'violently penned'. Balked of speaking in debate, he badgered Burghley to take up in the Lords his proposals for tougher penalties and what would have amounted to a biannual commission of inquiry into depopulation. Some attributed his proposals to puritan zeal, but as member for Banbury and examiner of many of those implicated in the conspiracy Cope had recent and pressing memories to urge him on. [197]

A convergence of views may have been one of the catalysts that led to a long term association with Francis Bacon who, Walter claims, at the start of the parliament of 1597, 'initiated discussion, introducing two bills drafted by himself against depopulating enclosure and conversion to pasture. Bacon became the main protagonist for procuring legislation against enclosure, dominating the committee established and framing the bills that emerged from it.' [198] A more balanced approach may be seen in his argument before parliament during the 1607 debate on unifying the laws of the two kingdoms when Cope stated that, 'testimony is but to informe the Jury, who may beleave as they see cause for if they find by circumstances that a bad fellow saith true they may believe them, *et contra*'. [199] His need for a London base was occasioned by attendance at Parliament. His residence had been the Cecil property of Rutland House on the Strand, later modified in 1611 during the construction of Salisbury House. This was a project with which Sir Anthony's brother,

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[197] John Walter, ' "Rising of the People"? The Oxfordshire Rising of 1596', *Past & Present*, no. 107 (1985), p. 135.

[198] Ibid., p. 133.

[199] *The Parliamentary Diary of Robert Bowyer, 1606-1607* , ed. David Willson (Minneapolis, 1931), p. 311.

Walter, was closely associated. [200] There was some question about the tenancy as he wrote to Sir Robert Cecil in September of 1600 to explain that,

> It pleased him well to be Cecil's tenant, and he would have continued so if Cecil had not disposed of it otherwise. If Cecil parts with it hereafter, he begs to have the offer of it before another. He will shortly remove the household stuff his wife left there.—Hanwell, 22 September, 1600. [201]

The issue of a London base had not been satisfactorily resolved because in the following year he wrote again:

> No man could have procured my removing from Cecil House had it not been your desire, so much did I hold myself satisfied to be your tenant there. I beseech you, therefore, that I may be bold to put you in mind whether you promised not in the parting from it that if Rutland House came into your hands, I should not fail to have it of you? Pardon me if I press this promise for fear that my wife should remain a banished woman from London.—From Hanwell, this 16th of September 1601. [202]

In both cases he cited his wife's interests in having to remove some of her 'household stuff' and being forced to remain a 'banished woman'. His latter years were marred by increasing financial difficulties. Anthony died in 1614 probably at Cope Castle, later Holland House, his brother Walter's London residence. He left debts of over £20,000 responsibility for which was mainly laid at his brother's door. Whilst some of the losses may have accrued from poorly managed finances there is enough spending

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[200] Manolo Guerci, 'Salisbury House in London, 1599-1694: The Strand Palace of Sir Robert Cecil', *Architectural History*, vol. 52 (2009), pp. 31-78.

[201] Anthony Cope, letter to Sir Robert Cecil (September 1600), http://www.british-history.ac.uk/cal-cecil-papers/vol10/pp315-335, accessed 11 January 2021.

[202] Anthony Cope, Letter to Sir Robert Cecil, (September 1601), http://www.british-history.ac.uk/cal-cecil-papers/vol11/pp374-401, accessed 11 January 2021.

power expressed in this figure to have undertaken garden construction on a very large scale if he had chosen to do so.

Walter Cope, three years Anthony's junior, was entered at Gray's Inn in 1570 and used this as a springboard for a career as an administrator concerned with financial affairs. He became an official for the Court of Wards in 1574, the court's feodary for Oxfordshire in 1580 and feodary for the City of London and Middlesex in 1601. In addition he cultivated the company of great men, first as a gentleman usher to William Cecil, Lord Burghley, and by 1593 had become his secretary. After Burghley's death in 1598 he grew close to his son Robert, the earl of Salisbury, and was given a number of roles, some relating to the works at the garden at Theobalds. In March of 1600 he wrote to Cecil,

> Mr. Partington attendeth to speak with you about your business. There is an outer terrace upon which no man shall be able to walk except it be set with trees to make a shade, and except your officers agree how it shall be finished, whether with brick or earth. [203]

Significantly another task was the oversight of the engineering works to ensure adequate water supply for the garden. [204] The letter he wrote to Cecil on 12 September 1602 suggests considerable practical experience.

> I am glad to hear what a plentiful spring is found near your new lodge. If you mean to do anything there this summer, it is more than time it were in

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[203] Walter Cope, letter to Sir Robert Cecil, (March 1601), http://www.british-history.ac.uk/cal-cecil-papers/vol11/pp100-119, accessed 17 January 2021.

[204] Jennifer Potter, *Strange Blooms, The Curious Lives and Adventures of the John Tradescants*, (London, 2006).

> hand; your presence there for two hours would settle a course for all. Goffe and my man may be there: they may stake it out before your coming. [205]

He also had an interest in a scheme to bring 'a river of water to London and Westminster from springs out of Herts and Middlesex'. [206] In 1605 he was called on to appraise the visual impact of a new prison on the views from gardens in the Strand although clearly there was one standard for the aristocracy and another for the artisan:

> Accordinge to your honors pleasure wee have taken viewe of the newe erected house in Strand lane intended for a prison to punishe vagrant persons. And wee finde the same as it is now built in our opinions noe waye offensive ether to Somerset or Arundell gardens. Nether is the same anie waye prejudiciall to Holmeade, the taylor, except it be in his prospect which is verye litle hindered thereby, ffor notwithstandinge the said house he hath full prospecte over the Thames and over some parte of Somersett garden, which wee thincke to be sufficient prospecte for a man of his qualitie. [207]

Walter was knighted in 1603 having travelled north to greet the future king James I and thereafter he continued to run errands for the great and the good. This included assisting in the investigation of treasonous activities on the part of Henry Brooke, 11th Baron Cobham (1564 – 1619) and the subsequent arrest and questioning of his servant Richard Mellersh. The Lord Chancellor, Thomas Egerton, writing to Robert Cecil reported that,

> Sir Walter Cope desires to be speedily dispatched of this charge, his house being now otherwise disposed as you know. Mellersh carried himself very

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[205] Quoted in Sally Miller, '"The Ponds or Water Maze": An early Seventeenth-century Water Garden at Cope Castle in Kensington', *Garden History*, vol. 42, no. 1 (2014), p. 29.

[206] Petition, (May 1605), http://www.british-history.ac.uk/cal-cecil-papers/vol17/pp167-206, accessed 17 January 2021.

[207] Walter Cope, letter to Sir John Fortescue, (December 1605), http://www.british-history.ac.uk/cal-cecil-papers/vol24/pp36-57, accessed 17 January 2021.

> audaciously and justifies all he has done, and desires to be committed to prison. Which he has justly deserved. [208]

Charles Nicholl gives the following account of a rather more light-hearted expedition:

> There survives amongst the Cecil papers at Hatfield House a rather huffy letter from a court official, Sir Walter Cope. He writes to Lord Cecil, Lord Cranborne:
>
> > I have sent and bene all this morning hunting for players, juglers & such kinds of creaturs, but finde them harde to finde, wherefore leavinge notes for them to seeke me, Burbage ys come, & sayes ther ys no new playe that the Quene hath not seene, but they have revyved an old one cawled Loves Labore Lost, which for wytt and myrthe he sayes will please her excedingly.
>
> Cope does not date the letter, but it is endorsed '1604' by one of Cecil's secretaries, and this date is confirmed by a performance of *Love's Labours* at court in January 1605. Shakespeare would doubtless have been one of the players so fruitlessly hunted by Cope. [209]

Walter Cope clearly was interested in other aspects of London 'wildlife' for in August of 1605 a visit to the Lion Tower at the Tower of London was recorded. 'Sir Walter Cope was with me last night at 7 o'clock, where he did see under the platform through the loopholes the male and female lions and by chance one of the whelps came to the mouth of the hovel.' [210] This was not his only encounter with matters zoological for in 1607 we find noted in the minutes of the East India company that he requests, 'a

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[208] Lord Chancellor, Letter to Robert Cecil, (October 1603), http://www.british-history.ac.uk/cal-cecil-papers/vol15/pp253-277, accessed 17 January 2021.

[209] Charles Nicholl, *The Lodger, Shakespeare on Silver Street* (London, 2007), pp. 43-4.

[210] Ralph Gill, letter to the earl of Salisbury, http://www.british-history.ac.uk/cal-cecil-papers/vol17/pp344-374, accessed 11 January 2021.

young man to go for parrots, monkeys, and marmosets for Lord Salisbury'. [211] He was also able to supply Cecil with 'a pair of tortoises and a glass of balsom'. [212]

Further advancement came in 1609 when the king made him Chamberlain of the Exchequer and four years later he became public registrar general of commerce. In 1610 he was appointed, along with the Robert Cecil, to the office of keeper of Hyde Park, in which capacity he ordered two hundred lime trees at a cost of £20. [213] Finally in 1612 as master of the Court of Wards he promised that he would 'execute his office sincerely with clean hands'. [214] Francis Bacon, a rival for the post was so confident of gaining it that he had purchased new cloaks for his men prompting the quip reported by Dr. Rawley, Bacon's chaplain, that, 'Sir Walter was master of the wards and Sir Francis Bacon of the Livery'. [215] Whilst up to this stage his career in public service appears to be one of continued success and rising fortunes, schemes he entered into to advance the financial interest of himself and his brother were less successful. According to Martha Hiden, 'He became a member of the [Virginia] Company and had paid the large sum of £215 into the Company's treasury. He was one of the leaders of his time in creating and developing England's foreign trade.' [216]

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[211] Court Minutes of the East India Company, (January 1607), //www.british-history.ac.uk/cal-state-papers/colonial/east-indies-china-japan/vol2/pp145-148, accessed 17 January 2021.

[212] Walter Cope, letter to the earl of Salisbury (12 August 1606), http://www.british-history.ac.uk/cal-cecil-papers/vol18/pp220-235, accessed 17 January 2021.

[213] Grant to the earl of Salisbury and Sir Walter Cope, of the office of Keepers of Hyde Park (16 November 1610), http://www.british-history.ac.uk/cal-state-papers/domestic/jas1/1603-10/pp640-655, accessed 17 January 2021.

[214] Lord Chamberlain, letter to George Carleton, (November 1612), http://www.british-history.ac.uk/cal-state-papers/domestic/jas1/1611-18/pp154-160, accessed 17 January 2021.

[215] E. A. Abbott, *Francis Bacon: An account of his life and works (*London, 1885), p. 185.

[216] Martha Hiden, 'A Voyage of Fishing and Discovery, 1609', *The Virginia Magazine of History and Biography*, vol. 65, no. 1 (1957), p. 64.

A venture begun in 1607, to buy up former church properties still held by the crown, was disastrous for the family fortunes. His troubles multiplied and in February of 1614 the Lord Chamberlain, writing to Dudley Carleton, remarked that, ' the King has had nine petitions in five days against Sir Walter Cope, as Master of the Wards, rather for weakness of judgment than corruption'. [217] By 1613 the market had collapsed and Walter died shortly after his brother Anthony in 1614 leaving around £26,000 in debts. The Lord Chamberlain noted he was, 'heart-broken at the death of his brother, and threatened loss of his place' on account of, 'his want of dignity'. [218] Whilst we have no certain knowledge of what Sir Anthony was doing in these years at Hanwell it is documented that in 1604 Walter began work on a new London property which became known as Cope Castle. The remains of what Allen calls, this 'imbroglio of Dutch gables and Italianate ornament' survive in today's Holland Park. [219] Also constructed, but now completely lost under Kensington, was his extensive and elaborate water garden.

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[217] Lord Chamberlain, letter to George Carleton, (February 1614), http://www.british-history.ac.uk/cal-state-papers/domestic/jas1/1611-18/pp222-225 accessed, 17 January 2021.

[218] Lord Chamberlain, letter to George Carleton, (August 1614), http://www.british-history.ac.uk/cal-state-papers/domestic/jas1/1611-18/pp250-252, accessed 17 January 2021.

[219] Allen, ' Cope, Sir Walter (1553?–1614)', *ODNB*.

Walter Cope's Water Maze

Sir Walter's career, as documented above, demonstrates his interest in a number of topics relating to gardens. The Kensington water maze with its complex and novel geometries was part of the larger park associated with his new property. The design indicates links with other water gardens of the period and may have formed a blue print for parallel developments at Hanwell. Built at a distance of around 500m to the south west of the house, the Cope complex was founded on the remains of an earlier square moat with possible fishponds associated with the medieval manor of West Town. [220] The layout is pictured on a 1734 copy of an estate map originally surveyed in 1694 (Figure 20). [221] This shows an extraordinarily intricate arrangement of ponds and peninsulas. The feature that is easiest to describe is the square moat that lies immediately to the east of the main complex. As this feature survived into the nineteenth century and was mapped by the Ordnance Survey it is possible to be specific about its dimensions with the central island being 40m square. There was a causewayed approach at the south west corner. The sequence of ponds to the west included walkways connected to islands forming peninsulas in a variety of configurations. The square moat and its surrounds as well as areas to the north and east are shown planted with trees, presumably orchards. The colouring points to the likelihood that the causeways and peninsulas and the areas around the pools were laid to turf. Naturally the rest of the park was filled with the more conventional elements of the period: further orchards, walks, closes, terraces and non-watery parterres but

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[220] Sally Miller, *The Pleasure Grounds of Holland House* (London, 2014), p. 27.

[221] Illustrated in Miller, *Holland House*, p. 21. The 1734 copy is held at Royal Borough of Kensington & Chelsea Local Studies and Archives.

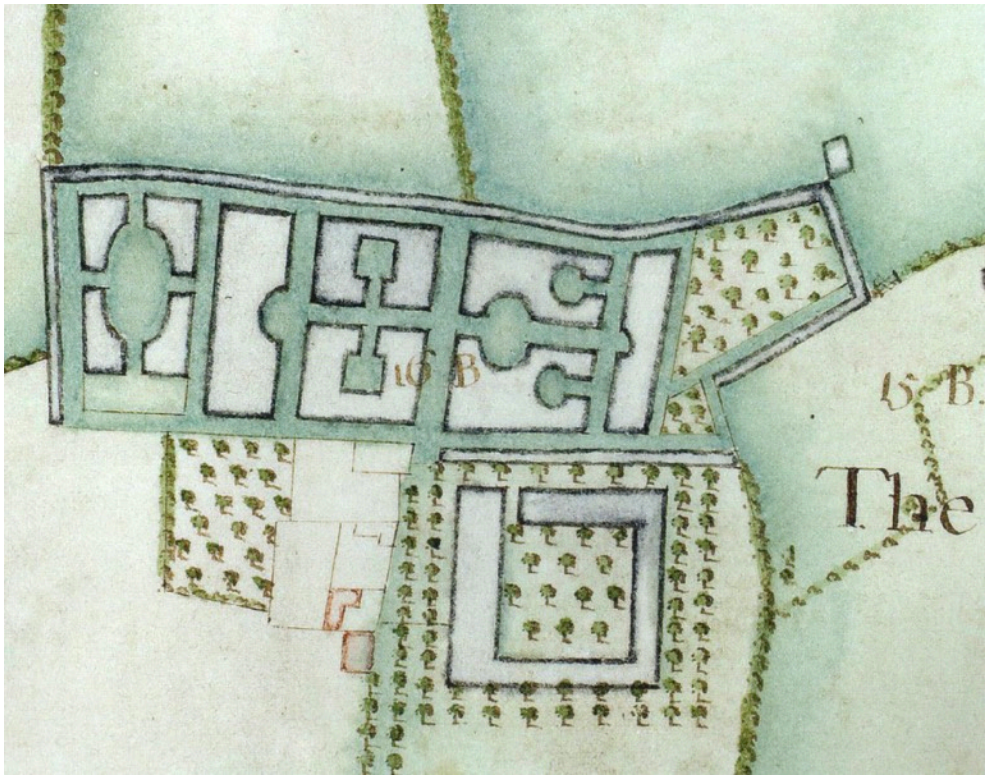

Figure 20. Cope Castle, water gardens from survey of 1694.
by kind permission, Royal Borough of Kensington and Chelsea Libraries.

the water garden or 'water maze', as it was labelled in 1734, remained the most distinctive feature.

It is difficult, even within the number of water gardens established early in the seventeenth century, to find a precise parallel for Sir Walter's works in Kensington. One may be initially struck by how closely his water garden resembles Sir Francis Bacon's Pondyards at Gorhambury. [222] However, the similarities are the more superficial ones of scale and general layout and the closest example of a geometrical complex with small peninsulas is from later in the 1620s at Tackley in Oxfordshire. [223] The originality of Sir Walter's creation remains something of a conundrum. The

[222] See below, pp. 104-8 for Gorhambury.

[223] See below, pp. 134-7 for Tackley.

effective management of his water garden is testified to in a letter from one Adrian Gilbert to Robert Cecil, penned in September 1602:

> You will see what winter winds and frosts will do both for increase of water and for the frosts to shiver and cast down the banks; for do what you will now, you must right it once in the spring and then set bushes and what you will. And for then ponds there in the great island by your lodge will then be best ended, and against her Majestie's coming will look trim like Mr Cope's ponds. [224]

Sally Miller takes this to refer to the ponds at the Kensington property and at first this seems unlikely, given that work on the house did not start until 1604. However, an account from 1917 by a local historian, Walter Durham, suggests, without giving a source, that part of the property was sold 'to Sir Walter Cope of the Strand in 1591. Cope lived at West Town Manor House, which was situated in the grounds of the house lately known as Oak Lodge and ·now Oakwood Court.' [225] It is possible that Walter's gardening expertise derives from work undertaken to modify the existing, probably medieval, site at Kensington. It is also perfectly possible that he had had a hand in landscaping and introducing new water features at the family's properties at Hanwell and Bruern; given that he was semi-resident in the county, from 1580 onwards, during his time as Feodary for Oxfordshire for the Court of Wards and Livery.

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[224] Quoted in Miller, *Holland House*, p. 29, Adryan Gylbarte, Letter to Sir Robert Cecil (18 September 1602), Salisbury MS, XII, p. 380.

[225] Walter Derham, 'Holland House and Earl's Court: Their History and Topography', *Journal of the British Archaeological Association*, vol. 23, no.1 (1917), p. 71.

Planting within Walter's garden generally was of great importance and may again provide some insight into arrangements at Hanwell. In 1608 a visitor to the Kensington garden noted, 'We had the honour to see all but touch nothing, not so much as a cherry, which are charily preserved for the Queen's coming'. [226] On a plant buying trip to the low countries for Robert Cecil in 1611 John Tradescant took £38 from Sir Walter to buy trees. [227] Miller makes an important point about Walter's botanical collection and other interests:

> Cope's London house was on the Strand, where stood the palaces of the most important men of the day. It is possible that he was the Mr Cope who was visited by Thomas Platter in 1599: 'I visited his collection with Herr Lobelus, a London physician [...] this same Mr Cope inhabits a fine house in the Snecgas [sic].' Herr Lobelus was Matthias de l'Obel or Lobel, later botanist to James I. Platter described a collection of beasts, fishes, birds, insects, nature's deformities, rocks, corals, artefacts, coins, pictures and more. He stated that Mr Cope had 'spent much time in the Indies'. This seems unlikely from what is known of Cope's life, but he did invest in a number of overseas trading companies, including the Virginia and East India companies, and sea captains were always willing to carry home curiosities for the cabinets of their investors. [228]

Amongst other items in Sir Walter's pioneering collection were, 'costumes, weapons, and tools from around the globe, a round horn said to have grown from an Englishwoman's forehead, a unicorn tail, a mirror "which both reflects and multiplies objects" and Chinese objects including an "artful little box", "earthen pitchers" and porcelain.' [229] Sir Walter's cabinet seems to have been rather well known as it features

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[226] John Chamberlain, Letter quoted in Miller, *Holland House,* p. 23.

[227] Hatfield House Archives, Bills 51/8V.

[228] Miller, *Holland House,* p. 22.

[229] Thomas Platter, *The Journals of Two Travellers in Elizabethan and Early Stuart England* (London, 1995), p. 34.

in a comic poem, *On a Fart in the Parliament House* from the well known anthology *Pills to Purge Melancholy:*

> Quoth Sir Walter Cope, 'twas so readily let,
> I would it were sweet enough for my cabinet. [230]

He and his collecting are also mocked in John Donne's *Catalogus Librorum aulicorum incomparabilium et non vendibilium* [Catalogue of incomparable courtly books, not for sale] composed between 1603 and 1611. [231] Donne lists 'Believe in thy havings, and thou hast them. A test for antiquities, being a great book on very small things dictated by Walter Cope, copied out by his wife and given a Latin gloss by his amanuensis John Pory'. David Quinn adds the following comment, 'Cope was a great collector of curiosities, and his avidity to put into his collection all kinds of rubbish (as well as many valuable specimens) produced some ridicule. I think Donne was getting at Cope for this.' [232] Sir Walter clearly subscribed to what Hyde calls 'the culture of curiosity and collecting'. [233] Were his collecting interests shared by his brother Anthony? Did any part of it find its way to Hanwell and were any remnants of it perhaps surviving in a forgotten cupboard somewhere to intrigue and inspire the future 4th Baronet?

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[230] Anonymous, 'On a Fart in the Parliament House', in *Wit and Mirth:or Pills to Purge Melancholy* (London, 1719), p. 333.

[231] Daniel Smith, Matthew Payne, M. and Melanie Marshall, 'Rediscovering John Donne's *Catalogus librorum satyricus'*, *The Review of English Studies*, vol. 69, no. 290 (2018), pp. 455 – 87.

[232] David Quinn, 'Reviewed Work: John Pory, 1572-1636: The Life and Letters of a Man of Many Parts by William S. Powell', *The William and Mary Quarterly*, Vol. 36, No. 1 (1979), pp. 139-41.

[233] Hyde, *Cultural History of Gardens the Renaissance*, p. 9.

Sir Francis Bacon, Gardening and *The New Atlantis*

Sir Francis Bacon is a significant element in this study, not only because of Plot's later reference to *The New Atlantis* but also his being part of the same social and political circle as the Cecils and therefore, somewhat tangentially, the Copes. Was there some sharing of influences and exchange of ideas not least through Bacon's own experiences of garden making and his associated writings?

Francis Bacon (1564-1626) was the second son of Sir Nicholas Bacon and his second wife Anne and grew up, and was educated alongside his older brother Anthony, at Gorhambury near St. Albans, Hertfordshire. [234] Francis went up to Trinity College, Cambridge in 1573 under the personal tutelage of the master, Dr John Whitgift. He entered Gray's Inn in 1578 and subsequently worked in France for the diplomat Sir Amias Paulet until the death of his father in 1579. Afterwards he returned to Gray's Inn and was admitted to the bar in 1582 and began his legal career under the patronage of his uncle William Cecil, Lord Burghley. Much of his early work was associated with concerns over a perceived resurgence in Roman Catholicism in which he showed some puritan leanings.

Bacon's profound interest in natural philosophy was first given voice in a letter from 1592 to Lord Burghley in which he states that,

> I confess that I have as vast contemplative ends, as I have moderate civil ends; for I have taken all knowledge to be my province; and if I could purge it of two sorts of rovers, whereof the one with frivolous disputations,

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[234] Markku Peltonen,' Bacon, Francis, Viscount St. Albans (1551-1626)', *ODNB*.

> confutations, and verbosities, the other with blind experiments and auricular traditions and impostures, hath committed so many spoils, I hope I should bring in industrious observations, grounded conclusions, and profitable inventions and discoveries. [235]

After incurring the displeasure of Queen Elizabeth he failed to gain a post as the next Attorney-General but plans for a contemplative life were dashed when further legal employment for the crown came his way. However, his philosophical interests were not entirely quashed as demonstrated by a device he presented at Gray's Inn for Christmas of 1594 where, in a fore-shadowing of his work, *The New Atlantis,* a character advocating the pursuit of philosophy called for 'the conquest of the works of nature', commending the erection of 'a most perfect and general library', 'a spacious, wonderful garden', 'a goodly huge cabinet', as well as 'a still-house, so furnished with mills, instruments, furnaces, and vessels, as may be a palace fit for a philosopher's stone'. [236] Bacon maintained a strong connection with Robert Devereux, the 2nd Earl of Essex throughout the 1590s. However his finances, rarely secure, collapsed and he was arrested for debt in 1598. Following Essex's abortive attempt at rebellion in 1601 Bacon found himself prosecuting his former friend and patron for treason. Efforts to gain the new king's approval paid off for in 1603 he was knighted. In 1606 Bacon married Alice, the 14 year old daughter of a wealthy London alderman. Two years later surviving notes reviewing his economic situation also included his plans for improving his house and gardens at Gorhambury. [237]

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[235] *The Works of Francis Bacon*, ed. James Spedding, Robert Ellis and Douglas Heath, 14 vols. (London, 1857-74) vol. 8, p. 109.

[236] *Gesta Grayorum,* ed. Walter Greg (Oxford, 1914), p. 35.

[237] See below, pp. 104-8.

In 1605, he had published his first major philosophical work, *The Two Bookes of Francis Bacon: of the Proficience and Advancement of Learning, Divine and Humane,* which, as well as celebrating learning in all its forms, attempted to sum up the current state of human knowledge. Alongside his philosophical endeavours Bacon also tried to reform existing institutions in addition to proposing the founding of new ones. After considerable efforts Bacon was finally appointed Attorney-General in 1613. However, the rise of George Villiers, later Duke of Buckingham, was more instrumental in advancing his career: a place on the privy council in 1616, the office of Lord Keeper the following year, becoming Lord Chancellor in 1618 with his elevation to baron Verulam of Verulam. In 1620 his major philosophical work *Novum Organum* was published containing a plan, the *Instauratio magna* for advancing the cause of human understanding. This programme was divided into six sections:

1. The Divisions of the Sciences.
2. The New Organon; or Directions for the Interpretation of Nature.
3. The Phenomena of the Universe; or a Natural and Experimental History for the Foundation of Philosophy.
4. The Ladder of the Intellect.
5. Forerunners, or Anticipations of Second Philosophy.
6. Second Philosophy; or Active Science. [238]

It was in contemplating the practical implications of this programme that Bacon was led to start work on *The New Atlantis*. Following his impeachment, as part of the parliamentary attack on monopolists, and subsequent conviction for financial irregularities, Bacon retired to Gorhambury on a pension of £1,200 a year. Here he had ample opportunities to pursue this and other projects. He died in 1626 following a reported abortive attempt to preserve a chicken by stuffing it with snow. *The New Atlantis* was unfinished leaving it to William Rawley to publish posthumously.

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[238] Francis Bacon, *Instauratio magna. [Novum organum]* (London, 1620).

Henderson sums up his life with these words: 'Throughout his life, then, Bacon flirted with the idea of abandoning his political career to devote himself to the contemplative life. It is a tribute to his enormous energy and determination that he was successful at both.' [239]

Bacon lived for much of his life at Gray's Inn where he was instrumental in commissioning a series of walks and a mount with banqueting house between 1597 and 1608. Indeed his championing of tree lined alleys there was probably inspired by work done at Theobalds where, according to Henderson, ' Lord Burghley is thought to have been the first in England to have planted walks.' [240] There is some debate about the extent to which Bacon was responsible for the design of the gardens at his suburban residence at Twickenham. [241] Bacon leased the property between 1595 and 1606 and although his successor, Lucy Harrington, Countess of Bedford, was a notable gardener in her own right, it is hard to see that she could have contributed much to the garden as illustrated by Robert Smythson around 1609. The garden Strong described as an 'emblematic one based upon the familiar plan of the pre-Copernican universe', and compared it with a similar reconstructed layout at Chastleton House in Oxfordshire. [242] It is interesting to see Bacon commemorating a Ptolemaic view of the universe given that Thomas Digges had published the first

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[239] Paula Henderson, 'Sir Francis Bacon's Essay "Of Gardens' in Context"', *Garden History*, vol. 36, no. 1 (2008), p. 63.

[240] Ibid., p. 70.

[241] Ibid., p. 71 and Strong , *The Renaissance Garden*, p. 120.

[242] Strong , *The Renaissance Garden,* p. 120.

heliocentric account in English in 1576. [243] If there was, indeed, an astronomical facet to this design it would have reflected perhaps on contemporary debates rather than a particular fixed view. On the other hand it is a design which seems to have sprung from a profound understanding of geometry and so may reflect Bacon's other interests. Tycho Brahe's garden and observatory at Uraniborg springs to mind when looking at the layout of Twickenham (Figure 122).

Bacon took up occasional residence at Gorhambury near St. Albans in 1601 following the death of his older brother Anthony and in 1608 resolved to, 'give directions of a plot to be made to turn the pondyard into a place of pleasure'. [244] Unlike Sir Walter's water maze there are several contemporary accounts, not the least of which is Bacon's detailed memorandum which specifies that, within a square moat,

> The grownd to be inclosed square wth a bricke wall, and frute trees plashed upon it; on the owtside of it to sett fayre straite byrches on 2 sides and lyme trees on 2 sides, some x foote distante from the wall, so that the wall may hide most of the shaft of the tree and onely the tufts appear above.

He then gives the width of his terraced walkways as 25 feet and describes, 'a fyne little stream rune upon Marvell and fine peppell'.

> All the grownd within this waulk to be cast into a laque, wth a fayre raile wth Images gilt rownd about it and some low flowres violetts and strawberries.Then a fayre hedg of Tymber woorke till it towch the water, wth some glasses colored hear and there for the ey.

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[243] See Francis Johnson, 'Thomas Digges, the Copernican System, and the Idea of the Infinity of the Universe in 1576', *The Huntington Library Bulletin*, no. 5 (1934), pp. 69-117.

[244] Spedding, Ellis and Heath, *Works of Francis Bacon*, vol. 11, pp. 76-7.

> In ye Middle of the laque where the howse now stands to make an Iland of 100 broad; An in the Middle thereof to build a howse for freshnes with an upper galery open upon the water, a tarace above that, and a supping roome open under that; a dynyng roome, a bedd chamber, a Cabanett, and a Roome for Musike, a garden; In this Grownd to make one waulk between trees; The galeries to cost Northwards; Nothing to be planted hear but of choyse. To sett in fitt places […] An Iland where the fayre hornbeam standes with a stand in it and seats under Neath. An Iland with a rock. An Iland with a Grott. An Iland Mounted wth flowres in ascents. An Iland paved and with picture. Every of the Ilands to have a fayre Image to keepe it, Tryten or Nymph etc. An Iland wth an arbor of Musk roses sett all wth double violetts for sent in Autumn, some gilovers wch like wise dispers sent. A fayre bridg to ye Middle great Iland onely, ye rest by bote. [245]

Both Henderson and Strong attempted reconstructions of this garden on the basis of Bacon's wish list (Figure 21). [246] The actuality was to be rather different and we are fortunate in having John Aubrey's account of a visit in 1656, by which time the Pondyards were in decline:

> The figures of the Ponds were thus: they were pitched at the bottomes with pebbles of several colours, which were work't into several fligures, as of Fishes, etc.., which in his Lordship's time were plainly to be seen through the cleare water, now over-grown with flagges and rushes. If a poore bodie had brought his Lordship half a dozen pebbles of a curious colour, he would give them a shilling, so curious was he in perfecting his Fishponds which I guesse doe containe four acres. In the middle of the middlemost pond in the Island is a curious banquetting-house of Roman architecture paved with black and white marble covered with Cornish slate, and neatly wainscotted. [247]

An accompanying sketch, whilst showing of the overall geometry of the site, appears to show, given the conventions of Aubrey's drawing, the square banqueting house rising directly from the central pool surrounded by four 'L' shaped pools, a configuration that is hard to reconcile with the existing earthworks. (Figure 22)

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[245] Spedding, Ellis and Heath, *Works of Francis Bacon*, vol. 11, p. 77.

[246] Henderson, 'Sir Francis Bacon's Essay', p. 121 and Strong, *The Renaissance Garden*, p. 129.

[247] *John Aubrey Brief Lives,* ed. Kate Bennett, vol. 1 (Oxford, 2015), p. 215

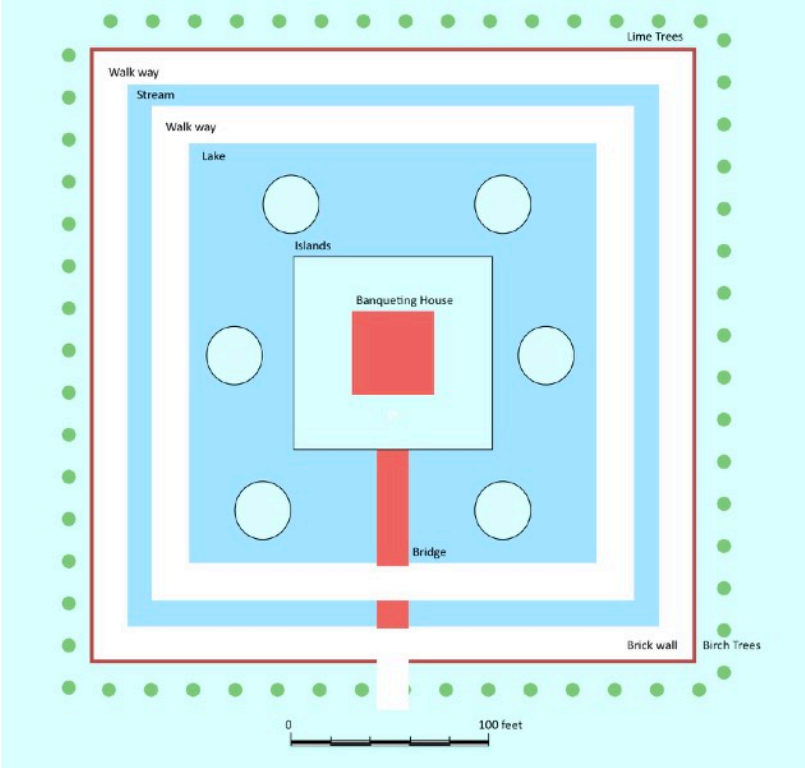

Figure 21. Planned garden for Gorhambury from Bacon's memo of 1608, interpretation after Strong and Henderson.

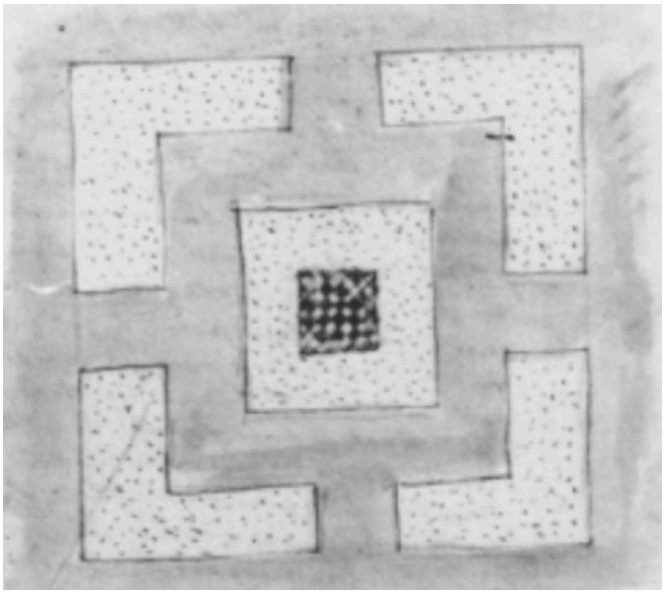

Figure 22 . Aubrey's sketch of the Pondyards [248]

[248] from Paula Henderson, 'Sir Francis Bacon's Water Gardens at Gorhambury', *Garden History*, vol. 20, no. 2 (1992), p. 125.

Figure 23. The Pondyards, Gorhambury OS 6 inch map 1880. © Crown Copyright and Landmark Information Group Limited (2021). All rights reserved.

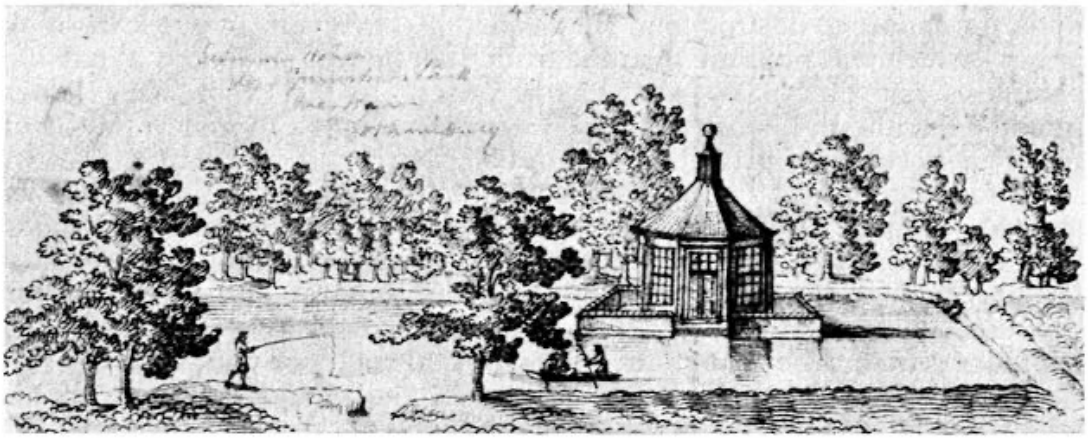

Figure 24 Banqueting House purported to be Gorhambury, artist unknown.

An estate map of 1634 portrays the same configuration of surrounding ponds with an oblong structure standing within a central square island. [249] Recent mapping and a site visit by this author in 2017 shows that the access from the north and south no longer exists, the causeways having been dug away or possibly bridges removed. (Figure 23) Also in existence is a drawing, artist unknown, published by Norah King that purports to show the banqueting house as an octagonal structure set on a small square island towards one end of a large oblong pool, a configuration that is hard to reconcile with existing earthwork evidence (Figure 24). [250] Indeed the catalogue entry for the original illustration reads:

> This drawing was acquired to illustrate the transition in the style of garden design from formal to informal in the early 18th century. The garden itself is yet to be identified, but we see an octagonal pavilion as the centrepiece of a water garden.
>
> A later hand has written 'Gorhambury?' in pencil but it has no resemblance to the actuality of Francis Bacon's garden in Hertfordshire. [251]

What makes the Pondyards particularly fascinating is that we have Bacon's own principles regarding the design of gardens set out in his famous essay *Of Gardens* with its often quoted opening lines:

> God Almighty first planted a garden. And indeed it is the purest of human pleasures. It is the greatest refreshment to the spirits of man; without which, buildings and palaces are but gross handiworks; and a man shall ever see, that when ages grow to

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[249] Hertfordshire Record Office, D/EV P1, Gorhambury Estate Map (1634).

[250] Norah King, *The Grimstons of Gorhambury* (Chichester, 1983), p. 27.

[251] https://gardenmuseum.org.uk/?s=gorhambury&post_type=collection, accessed 8 August 2022.

> civility and elegancy, men come to build stately sooner than to garden finely; as if gardening were the greater perfection. [252]

Of Gardens was the forty-sixth essay in a collection published in 1625 entitled, *The Essayes or Counsels, civill and morall, of Francis Lo. Verulam, Viscount St. Alban* and came immediately after a parallel essay *Of Buildings*. This account of a 'princely palace' deals with the optimum location and situation for the ideal residence and offers advice on such topics as keeping a central courtyard, 'not paved, for that striketh up a great heat in summer, and much cold in winter'. The link to the surrounding gardens is made primarily through a second arcaded court. It seems likely that the two contemporary double courtyard properties Bacon had in mind were Thomas Howard's Audley End, Essex and Lord Burghley's Theobalds.

In his subsequent short essay, *Of Gardens*, after acknowledging divine precedence in their creation, Bacon moves on to practicalities giving examples of planting to ensure what today we would call 'colour throughout the year'. Flowers are particularly praised as 'the breath of flowers is far sweeter in the air (where it comes and goes like the warbling of music) than in the hand', a reference to the practice of carrying nosegays to mask offensive odours. [253] Bacon goes on to describe an ideal layout consisting of 'not under 30 acres of ground to be divided in three parts; a green in the entrance; a heath or desert in the going forth; and the main garden in the midst; besides alleys on both sides'. [254] The attractiveness of a well cut lawn is celebrated as

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[252] Francis Bacon, 'On Gardens' in *Works of Francis Bacon*, ed. Spedding, Ellis and Heath, vol. 12, p. 25. Bacon's short essay has been reprinted many times, the text used here is from an online version: https://archiv.ub.uni-heidelberg.de/artdok/617/1/Davis_Fontes18.pdf, however the page numbers used in the footnotes that follow are taken from the 1625 London edition of Bacon's *Essays* .

[253] Bacon, *On Gardens*, p. 269.

[254] Ibid., p. 271.

are shady alleys of 'carpenter's work'. [255] Hedges and banks and mounts all have their place but Bacon considers topiary to be 'for children'.[256] His comments, including strictures on water in the garden, deserve quoting in full:

> For fountains, they are a great beauty and refreshment; but pools mar all, and make the garden unwholesome, and full of flies and frogs. Fountains I intend to be of two natures: the one that sprinkleth or spouteth water; the other a fair receipt of water, of some thirty or forty foot square, but without fish, or slime, or mud. For the first, the ornaments of images gilt, or of marble, which are in use, do well: but the main matter is so to convey the water, as it never stay, either in the bowls or in the cistern; that the water be never by rest discolored, green or red or the like; or gather any mossiness or putrefaction. Besides that, it is to be cleansed every day by the hand. Also some steps up to it, and some fine pavement about it, doth well. As for the other kind of fountain, which we may call a bathing pool, it may admit much curiosity and beauty; wherewith we will not trouble ourselves: as, that the bottom be finely paved, and with images; the sides likewise; and withal embellished with colored glass, and such things of lustre; encompassed also with fine rails of low status. But the main point is the same which we mentioned in the former kind of fountain; which is, that the water be in perpetual motion, fed by a water higher than the pool, and delivered into it by fair spouts, and then discharged away under ground, by some equality of bores, that it stay little. And for fine devices, of arching water without spilling, and making it rise in several forms (of feathers, drinking glasses, canopies, and the like), they be pretty things to look on, but nothing to health and sweetness. [257]

The third component of the garden is that it should enjoy a 'natural wildness' although with some planting for scent and fruit. In addition fruit trees should be cultivated against walls and within the alleys. After dismissing aviaries he closes with an admonition to princes:

> So I have made a platform [plan] of a princely garden, partly by precept, partly by drawing, not a model, but some general lines of it; and in this I

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[255] Ibid., p. 271.

[256] Ibid. p. 273.

[257] Ibid., p. 274.

> have spared for no cost. But it is nothing for great princes, that for the most part taking advice with workmen, with no less cost set their things together; and sometimes add statuas and such things for state and magnificence, but nothing to the true pleasure of a garden. [258]

The correlation between Bacon's essay and the memorandum of 1608 relating to works at Gorhambury is interesting, particularly as it concerns waterworks. Bacon clearly has an aversion to still waters that discolour as well as providing breeding places for frogs and flies, presumably a reaction to his experiences at the Pondyards which could never have had a particularly vigorous flow of water. The embellishments for the bottoms of water courses as noted at the Pondyards continue to meet with approval but it seems that Bacon was unlikely to have enjoyed fountains 'that sprinkleth or spouteth' water at this location. What is less clear is the degree to which Bacon's essay affected garden design in general. Strong labels Bacon in this context as a 'theorist' which seems a little wide of the mark given his record in commissioning works in at least three garden settings. A related publication that appeared in 1624, a year before Bacon's essay, was Wotton's *The Elements of Architecture,* that included a page on garden design described by Mowl as,'brief but seminal'. [259]. Sir Henry Wotton (1568 -1639), Bacon's friend and distant kinsman, was ambassador to Venice in the opening years of the seventeenth century and used his time in Italy to travel, collect and develop an interest in architecture and gardens. In the admittedly rather short section on 'Ornaments within and without the fabrique' Wotton gives an account of a visit to an unnamed Italian garden:

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[258] Ibid., p. 279.

[259] _Timothy Mowl,'New science, old order:the gardens of the Great Rebellion', *Journal of Garden History*, vol.13, no. 1 (1993), p. 17.

> […] into which the first Accesse was a high walke like a Tarrace, from whence might be taken a generall view of the whole Plott below; but rather in a delightfull confusion, then with any plaine distinction of the pieces. From this the Beholder descending many steps, was afterwards conveyed againe, by several mountings and valings, to various entertainements of his sent, and sight: which I shall not neede to describe (for that were poeticall) let me onely note this, that every one of these diversities, was as if hee had beene Magically transported into a new Garden. [260]

This strongly experiential approach to a garden chimes well with Bacon's careful detailing of routes and walkways and the variety of experiences and vistas that should be provided. Elsewhere Wotton approves the contrast between the regular and the irregular echoing Bacon's desire to exploit the opportunity to juxtapose the formal garden with the wilderness beyond. Bacon's essay was frequently reprinted and appeared in a variety of what Henderson describes as 'handsome, miniature editions, perfect for gift giving'. [261] Despite this it is hard to discern what his influence may have been on the generations of gardeners that followed him and the question as to whether one can meaningfully talk about a 'Baconian garden' remains debatable. Michael Raiger, in considering 'Miltonic' and 'Baconian' gardens argues that the characteristic of a Baconian garden lies in the expression of, 'mechanical power over nature'. [262] In a more interventionist mood Cesare Pastorino emphasises the suitability of a Baconian garden for 'fructiferous experiments'. [263] At a basic level a Baconian garden could be identified either because of its close physical adherence to the

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[260] Henry Wotton, *The Elements of Architecture, collected by Sir Henry Wotton, Kt., from the best Authors and Examples* (London, 1624), p. 109.

[261] Henderson, 'Sir Francis Bacon's Essay', p. 59.

[262] Michael Raiger, 'Fancy, Dreams, and Paradise: Miltonic and Baconian Garden Imagery in Coleridge's "Kubla Khan" ', *Studies in Philology* , vol. 110, no. 3 (2013), p. 652.

[263] Cesare Pastorino, 'Beyond recipes: The Baconian natural and experimental histories as an epistemic genre', *Centaurus*, vol. 62, no. 3 (2020), p. 447.

prescriptive description of how to lay out a garden in his essay or, at a perhaps more elevated level, one in which scientific principles of organisation are made manifest and opportunities for scientific endeavour promoted. Not surprisingly one of the key possible expressions of Bacon's developed view of gardens, that seemingly managed to accomplish both, was at the property of his former servant, Thomas Bushell. [264]

A much weightier undertaking than *Of Gardens* was Bacon's Utopian vision, *The New Atlantis,* published posthumously in 1627 in what Susan Bruce calls, 'the style of the early modern travel narrative'. [265] The work is part of an extended tradition of early modern writings stretching from Thomas More's *Utopia* of 1516 to Henry Neville's *The Isle of Pines* from 1668. It is intriguing that *The New Atlantis*, Bacon's only work of fiction, was appended to his *Sylva Sylvarum, or a Natural History*, a curious work which Doina-Cristina Rusu and Cristoph Lüthy suggest was never meant for publication. [266] The narrative of *The New Atlantis* begins with a voyage across the Southern Ocean and a chance encounter with the population of an unknown island called Bensalem. Access to the island was allowed once the crew had established their Christian credentials. Accommodated in the 'Strangers' House' with commendable hospitality, courtesy of the state, the travellers are allowed to enjoy an extended stay of six weeks. They meet local dignitaries, experience local customs, including a great 'feast of the family', and are introduced to the wonders of the 'House of Salomon'. Given the note in Rawley's dedicatory epistle that, 'This fable

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[264] See below, pp. 120-7 for an account of Bushell's gardens at Enstone.

[265] Susan Bruce (ed.), *Three early Modern Utopias* (Oxford, 1999), p. x.

[266] Doina-Cristina Rusu and Cristoph Lüthy, 'Extracts from a paper laboratory: the nature of Francis Bacon's *Sylva Sylvarum*', *Intellectual History Review,* vol. 27, no. 2 (2017), p. 171.

my Lord devised, to the end that he might exhibit therein a model or description of a college instituted for the interpreting of Nature and the producing of great and marvellous works for the benefit of man, under the name of Salomon's House', it is not surprising that the remaining third of the book is given over to an account of this institution. The richly clad 'Father of Salomon's House' grants an audience to the narrator:

> God bless thee, my son; I will give thee the greatest jewel I have. For I will impart unto thee, for the love of God and men, a relation of the true state of Salomon's House. Son, to make you know the true state of Salomon's House, I will keep this order. First, I will set forth unto you the end of our foundation. Secondly, the preparations and instruments we have for our works. Thirdly, the several employments and functions whereto our fellows are assigned. And fourthly, the ordinances and rites which we observe. [267]

The description of the house begins with caves that are used for a range of 'coagulations, indurations, refrigerations, and conservations' as well as accommodation for hermits. [268] There are also great towers, 'for the view', as well as lakes and pools and, 'streams and cataracts, which serve us for many motions, and likewise engines for multiplying and enforcing of winds, to set also on going diverse motions'. Artificial wells and fountains are constructed, 'in imitation of the natural sources' and are used for preparing infusions. Also present are, 'great and spacious houses where we imitate and demonstrate meteors; as snow, hail, rain, some artificial rains of bodies and not of water, thunders, lightnings; also generations of bodies in air; as frogs, flies, and divers others'. Bathing is clearly desirable as, 'We have also fair and large baths, of several mixtures, for the cure of diseases, and the restoring of

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[267] Francis Bacon, *The New Atlantis,* in Susan Bruce, (ed.), *Three Early Modern Utopias* (Oxford, 2008), p. 177. Page numbers in subsequent references refer to this Oxford World's Classics edition.

[268] Bacon, *The New Atlantis,* p. 178.

man's body from arefaction: and others for the confirming of it in strength of sinewes, vital parts, and the very juice and substance of the body'. In addition there are the elements that one would expect to find in a park or garden but elevated to a higher purpose. In a prescient account of genetic modification Bacon wrote, 'we make them also by art greater much than their nature, and their fruit greater and sweeter and of differing taste, smell, colour and figure, from their nature'. [269] Elsewhere are kitchens, dispensaries and workshops. Resembling something more obviously recognisable as a laboratory facility are the 'perspective houses' where optical principles are demonstrated and here artificial rainbows can be created. [270] Associated with the perspective-houses are collections of 'precious stones of all kinds, […] crystals likewise, glasses of divers kinds, […] Also a number of fossils'. [271] Further facilities include, 'sound-houses, perfume-houses' and 'engine-houses', 'where are prepared engines and instruments for all sorts of motions'. [272] The 'houses of deceits of the senses' are an intriguing part of the campus which feature a range of diversions including, 'all manner of feats of juggling, false apparitions, impostures and illusions; and their fallacies'. After this lengthy peregrination the piece closes with a brief section on personnel including, 'mystery-men, 'pioneers', 'compilers', 'dowry-men' and 'inoculators' all of whom are charged with various stages in the process of experimental investigation. [273] Shortly afterwards the tale comes to a rather abrupt halt with the line, 'The rest was not perfected'. [274]

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[269] Ibid., all above quotations from p. 179.

[270] Ibid., p. 181.

[271] Ibid., p. 182.

[272] Ibid., p. 183.

[273] Ibid., p. 184.

[274] Ibid., p. 185.

Within the story the narrator does not actually witness the wonders of Salomon's House for himself but is treated to an extended lecture which he may or may not have regarded as fanciful. Indeed as an observer the narrator is distinctly non-Baconian. As Bronwen Price observes, 'He neither analyses nor interrogates the information he is given but bases his knowledge largely on the words of others rather than on a rigorous investigation or practical experience'. [275] The work, certainly in the eyes of many modern commentators, is subject to interpretation from a variety of theoretical standpoints but Suzanne Smith's summation that, 'Bacon represents the scientist as something tantamount to a saviour of mankind and science as institutionalised benevolence', demonstrates the potentially inspirational component of his message. [276]

Plot's reading of the text led him to identify the house at Hanwell with *The New Atlantis*. In doing so he was not the first to make comparisons. Walter Charleton (1619-1707), former physician to Charles I, wrote in 1657 of the London College of Physicians, founded in 1518, that it was, 'Solomon's House in reality'. [277] Bruce suggests that the work was influential in the 1640s on the thinking of Samuel Hartlib (c. 1600-62), 'the great intelligencer of Europe' and Mark Greengrass notes that he favoured, 'the establishment of a model college of learning, a "Solomon's House" as envisaged in Bacon's *The New Atlantis*. Hartlib saw Chelsea College, whose reform was a matter of current debate before the Long Parliament, as a possible institution.'

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[275] Bronwen Price, (ed.), 'Introduction', *Francis Bacon's New Atlantis, New Interdisciplinary Essays (*Manchester, 2002), p. 13.

[276] Suzanne Smith, 'The New Atlantis: Francis Bacon's Theological-Political Utopia?', *The Harvard Theological Review,* vol. 101, no. 1 (2008), p. 102.

[277] Quoted in Charles Webster, *The Great Instauration: Science, Medicine and Reform 1626-1660* (London, 1975), p. 315.

[278] When the Czech educationalist John Comenius (1592-1670) visited England in 1641, 'nothing seemed more certain than that the plan of the great Verulam respecting the opening somewhere of a universal college, wholly devoted to the advancement of the sciences could be carried out'. [279] That certainty was misplaced as the Civil War broke out a few months later. Bacon's work undoubtedly was enormously important to thinking behind the later development of the Royal Society and its founding in 1662 to say nothing of the success of Gresham College whose origins go back even further to 1597. [280] The question remains to what extent did his garden writings influence garden development in the subsequent decades? One individual who, at various times in various ways, may have tried to recreate aspects of Bacon's horticultural vision was his former servant, Thomas Bushell.

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[278] Mark Greengrass, 'Hartlib, Samuel (c. 1600-1662)', *ODNB*.

[279] Quoted in Arthur MacGregor, 'A Magazin of all manner of inventions, museums in the quest for 'Salomon's House' on seventeenth-century England', *Journal of the History of Collections,* vol. 1, no. 2 (1987), p. 207.

[280] See Francis Johnson, 'Gresham College Precursor of the Royal Society', *Journal of the History of Ideas*, vol. 1, no. 4, (1940).

Thomas Bushell and the Enstone Marvels

Figure 25. Thomas Bushell, from his 1628 autobiography, *The First part of Youths Errors*.

In Plot's *Natural History* his account of Hanwell's 'House of Diversion' is immediately followed by a careful description of, with accompanying plates, 'the waterworks that surpass all others of the county' at Enstone. [281] This piece about the 'Enstone Marvels' is the most detailed surviving account of water engineering in a seventeenth-century English garden and has been much discussed in books on garden history. [282] The moving spirit behind these works was the engineer, mystic, confidence trickster and protégé of Sir Francis Bacon, Thomas Bushell Esquire

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[281] Plot, *Natural History*, p. 241-4.

[282] For example, see John Dixon Hunt, *Garden and Grove (*Philadelphia, 1986), p. 137; Thacker, *Genius of Gardening,* p. 98 and Strong, *The Renaissance Garden*, pp. 130-3.

(Figure 25). Sources for Bushell's life include his own 1628 account of his early years, *The First part of Youths Errors. Written by Thomas Bushell the Superlative Prodigall*. [283] This is a slender volume that Thacker describes as being, 'crammed with lamentation and self-accusation, but thin in factual corroboration'. [284] Bushell attracted the attention of John Aubrey, not always the most dispassionate of observers, who said that he was, 'the greatest master of the art of running into debt (perhaps) in the world' and that 'his tongue was a chain and drew in so many to be bound for him and to be engaged in his designs that he ruined a number'. [285] A detailed modern biography was published in 1932 by John Gough. [286] Bushell was born some time before 1600 to a family of minor gentry from Cleeve Prior near Evesham. He had a chequered childhood with little education and a certain amount of wayward behaviour before, around the age of fifteen, entering the service of Sir Francis Bacon. There is no direct evidence of the nature of his relationship with Bacon but he seems to have taken the young man under his wing and attempted to remedy the evident defects in his education to the point where they could share an interest in, and enthusiasm for, a variety of technological innovations, several of them associated with mining. Bushell's movements in Bacon's latter years and immediately after this death are difficult to discern. He may at some point have gone into self-imposed exile on the Isle of Wight and/or the Calf of Man and lived on wild herbs. He was apparently

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[283] Thomas Bushell, *The First part of Youths Errors. Written by Thomas Bushell the Superlative Prodigall (*London, 1628).

[284] Christopher Thacker, 'An Extraordinary Solitude', in *Of Oxfordshire Gardens* (Oxford, 1982), p. 28.

[285] Aubrey, *Brief Lives*, p. 312 .

[286] John Gough, *The Superlative Prodigall: A Life of Thomas Bushell* (Bristol, 1932). The section that follows is largely taken from Gough.

charged by his late master to institute what looks very much like his own 'House of Solomon':

> Among the MSS. in the British Museum [Cart. Antiq. Ill D, 14] is a paper entitled, *Instructions from the Lord Chancellor Bacon to his servant Thomas Bushell*. It relates to a project he had in view of establishing a corporation for exploring deserted mineral works. On the supposition that such a project would meet with due encouragement, he says, 'Let Twitnam Park, which I sold in my younger days, be purchased, if possible, for a residence for such deserving persons to study in, since I experimentally found the situation of that place much convenient for the trial of my philosophical conclusions, expressed in a paper sealed to the trust which I myself had put in practice, and settled the same by act of parliament, if the vicissitudes of fortune had not intervened and prevented me'. [287]

This clearly came to nothing for in 1626 Bushell married an heiress and took on the management of a small estate at Enstone in Oxfordshire. Here he, or rather one of his servants, discovered a remarkable natural phenomenon, bubbling from under a large rock, a petrifying well known as Goldwell. He used this as a basis upon which to build his extraordinary banqueting house with grotto below (Figure 38). As with everything relating to Bushell the exact circumstances of this are hard to reconstruct. The conventional view was that works were undertaken to prepare for, or indeed even attract, a visit from King Charles I. Edward McGee argues that, 'Bushell's rock provided him with a splendid opportunity not only to ingratiate himself with the king and queen, but also to promote political and economic interests of moment'. [288] However, the truth may be more labyrinthine as Gough's researches revealed that:

> The king indeed had given him very unusual support in his work at the rock itself. Bushell must have already had access to the king, very likely through

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[287] Daniel Lysons, *Environs of London, being an historical account of the towns, villages and hamlets, within twelve miles of that capita*l (London, 1796), p. 127.

[288] Ted (C. E.) McGee, '"The Presentment of Bushell's Rock": Place, Politics, and Theatrical Self-Promotion', *Medieval & Renaissance Drama in England,* vol. 16 (2003), pp. 39-80.

> his former position in Bacon's household and his other connections with prominent men in London, for it appears that the king had 'come over from Woodstock to see the rarity of nature at Enstone' shortly after it was first unearthed (this must have been around 1628) and had heartily fallen in with Bushell's design that the rock should not only be preserved but also be 'ornamented with groves, walks, fishponds, gardens and waterworks and to that end he has taken said work into his protection'. In order to make way for the groves and walks, instructions were sent to the earl of Danby: for better enabling Bushell's endeavours […] 'To call on such as it may concern for disposing the highway to some other place which may be most convenient to his Majesty's design, trusting he will find no man so refractory as he should have cause to certify his obstinacy to the King'. Nevertheless, there were persons who did object to the proposed diversion of the highway and we read that some of the copyholders of the manor: out of a malignant disposition the next court day fined Bushell for having turned the said highway, some have cut down trees for beautifying the said rock and others have presumed to forbid his workmen employed in setting up the wall for preserving the groves and walks not at all regarding his Majesty's directions. [289]

As well as being an early instance of 'not in my backyard' this suggests much greater levels of engagement with the project by the King. The end result became justly famed although there were plenty of detractors. Lieutenant Hammond, who visited in 1635, remarked that, 'a gentleman should be so strangely conceited and humoured as to disburse and lay out so much money as he has done in planting, framing, contriving and building upon another man's freehold'; it was all, 'a mad gim-cracke sure'. [290] The poet Robert Southey visiting over a century later was equally dismissive: 'I learnt that the great amusement consists in getting women there and streaming up water from the ground. The maker must have been some fool who had more money than wit and more wit than charity for half the expense would have fed the hungry

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[289] Gough, *The Superlative Prodigall,* p. 67.

[290] William Hammond, *A Relation of a Short Survey of the Western Counties, made by a lieutenant of the military company in Norwich in 1635*, Camden Miscellany, 3rd series (1936), pp. 81-3.

and clothed the naked.' [291] Despite querying Bushell's sanity Hammond recorded further details of his visit:

> On the side of a hill is a Rocke of some 11 or 12 Foote high, from the bottom whereof (by turning of a Cocke) riseth and spouts vp about 9 foote high, a Streame which riseth vp on her top a Siluer Ball, and as the sand Streame riseth or falleth to any pitch or distance, so doth the Ball, with playing, tossing and keeping continually at the top of sayd ascending stream […] a wall of jets like a plash'd Fence, whereby sometimes faire ladies cannot fence the crossing, flashing and dashing their smooth, soft and tender thighs and knees, by a sudden inclosing them in it.
> […] There were many strange forces of Beasts, Fishes and Fowles do appeare ; and with the pretty murmuring of the Springs, the gentle running, falling and playing of the waters; the beating of a Drum; the chirping of a Nightingale, and many strange rare and audible sounds and noises doth highly worke upon any Mans Fancy. […] In the chamber is a natural Rocke, like into the head of a Beare; on the top thereof, the water rises and spouts forth, falling in the Rocke […] from about the middle of this Chamber, they make a Canopy of Raine, which […] a man […] may stand dry, which with the reflection of the Sunn at high No-one, makes appeare to our fancies Rainbows and flashing like Lightening. [292]

Plot, visiting after the restoration by Edward Henry Lee, earl of Lichfield in 1674, saw and heard many of the same effects. His description of the water works in the grotto is worth quoting in full, both for its very specific details and because of the insights it may offer into the operation of Hanwell's 'House of Diversion'. It should be read together with a close examination of Plot's illustration (Figure 26).

> Being now come down into the *Grot* by the Passage 18, *Tab*. 11 and landing at the Bottom of the *Stairs, Tab*. *12*. *a*. on a large *half pace* before it . The *Rock* presents itself made up of large craggy *Stones* with great *Cavities* between them, *ccc & c* out of which flows *Water* perpetually Night and Day, dashing against the *Rocks* below, and that in great plenty in the driest Seasons, though fed only with a single *Spring* rising in a piece of ground

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[291] Robert Southey, Letter to Charles Collins (31 March 1793) quoted in Roland Baughman, 'Southey the Schoolboy', *Huntington Library Quarterly*, vol. 7 (1944), p. 269.

[292] Hammond, *Short Survey*, p. 82.

call'd *Ramsall*, between *Enston* and *Ludston*. The natural *Rock* is about 10 Foot high, and so many in Bredth; some few *Shelves* of Lead *dd*, and the Top-stones only having been added (easily to be distinguish'd bob their *Dryness*) which have advanced it in all about 14 Foot high.
54. In the *half pace* just before the *Compartment eee*, upon turning one of the *Cocks* at *f* rises a *chequer Hedge* of *Water*, as they call it, *gggg*; and upon turning *another*, the two side *Columns* of *Water hh*, which rise not above the height of the natural *Roc*k; and of a *third*, the middle *Column i* which ascending into the *turn* of the *Arch*, and returning not again, is received into hidden *Pipes* provided for that purpose: into *one* whereof, terminated in a very small *Cistern* of *Water* behind a *Stone* of the *Rock*, and having a *Mouth* and *Languet* just above its Surface, the *Air* being forced into it by the Approaches of the *Water*, a Noise is made near resembling the *Notes* of a *Nightingale*: But when that *Pipe* is filled there is then no more singing, till the *Water* has past away by another *Pipe* in the lower part of the *Rock*, which when almost done, there is heard a *Noise* somewhat like the Sound of a *Drum*, performed by the rushing in of *Air* into the hollow of the *Pipe*, which is large, and of *Copper*, to supply the place of the *Water* now almost gone out; which done, the *Nightingale* may be made to sing again.
55. From the turned *Roof* of the *Rock*, by help of the brass *Instrument k*, and turn off a Cock in one of the *Closets* above, they can let down a *Canopy* of *Water ll*; from the Top also they can throw *arched Spouts* of *Water* crossing one another, and dashing against the Walls, opposite to those of their rise, as at *m n* and *o p*; and *others* that rise out, and enter in again to the *Roof* at some Distance, never falling down at all at *q r* and *s t*. Which Falls of *Water* may be also delicately seen, turning the back upon them as well as looking forward, by help of a Looking-glass placed in the Wall opposite to them, which could not possibly be represented in the *Cut*. And some of these *Waters* (I must not say which) being often used by way of *Sport* to wet the *Visitants* of the *Grot*, that they might not avoid it by running up the *Stairs*, and so out into the *Grove*, by turning a Cock in another of the *Closets*, they can let fall water so plentifully in the *Door u u*, that most *People* rather cause to stay where they are, than pass through it: which is all concerning the inner *Prospect* of the Rock; what remains being only a Representation of the *Arch* of Stone *w w* built over it, with two *Niches x y* one of each side, and the *Grate z* at the Top, through which they look down out of the *Banqueting-room* into the *Grot*. Of which no more, but that behind the Rock there is a *Cellar* for keeping *Liquors* cool, or placing *Musick* to surprise the *Auditors*; and behind that the *Receivers* of Water to supply the *Pipes &c*. [293]

The attached pool and island would have been brand new at the time of Plot's visit. However, there was one other significant feature. In front of the grotto was ' *A* Cistern *of Stone with five Spouts of* Water *issuing out of a Ball of Brass, in which a small*

[293] Plot, *Natural History*, pp. 242-4.

Figure 26. Enstone, Thomas Bushell's Grotto from Plot's *Natural History*, Tab 12.

Spaniel *hunts a* Duck*, both diving after one another, and having their Motion from the Waters*.' [294] This cistern was also noted by Aubrey after a visit in 1643 when he wrote, 'I made a drawing of the little pond opposite the grotto: there stood Neptune on a scallop shell, with his trident in his hand, aiming at a duck that swam perpetually round chased by a spaniel. The statue is of wood and about three quarters of a yard high. It looks very pretty.' [295] Astonishingly this element alone of the Enstone Marvels remains and was rediscovered and documented by this author in 2016. [296]

The banqueting house above the grotto was initially tricked out as a habitation for a hermit, a pursuit close to Bushell's heart, with such appurtenances as an Egyptian mummy, a stuffed crocodile and a hammock, all enveloped in black drapes. Bushell's main family residence must have been elsewhere yet connected to the Marvels by a series of 'groves and walks'. The likely site of his house lies some 500m to the north north east where the well preserved earthwork remains of a formal garden of the period survived until quite recently. Constructed as a series of terraces and walkways symmetrically arranged to flank a set of formal gardens, laid out with a pattern of overlapping lozenges, all overlooking a body of water and with a wilderness beyond, the location can be tied quite closely in with Bacon's vision of the ideal garden (Figure 27). [297] The Enstone Marvels are probably best known because of the royal visit made in 1636 by King Charles and his Queen Henrietta Maria. Whilst probably a little more elaborate than the festivities laid on at Hanwell for James I and

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[294] Ibid., p. 232.

[295] Aubrey, *Brief Lives,* p. 315

[296] Stephen Wass,'The Enstone Marvels Rediscovered', *Garden History*, vol. 45, no. 2 (2017), p. 181.

[297] Ibid., p. 182.

later for Charles I, it certainly gives a flavour for how such an event would have been managed. Plot gives an account 30 years after the event:

> Whereupon he made *Cisterns*, and laid divers *Pipes* between the *Rocks*, and built a House over them, containing one fair *Room* for *Banqueting*, and several other small *Closets* for divers Uses, beside the *Rooms* above, which when finisht in the Year 1636, together with the *Rock, Grove, Walks*, and all other the Appurtenances, were all on the 23rd. of *August*, by the said *Tho. Bushell* Esq; presented to the then *Queen's* excellent *Majesty*, who in company with the *King* himself, was graciously pleased to honour the *Rock*, not only with her *Royal* Presence, but commanded the same to be called after her own *Princely* Name, HENRIETTA: At which time as they were entering it, there arose a *Hermite* out of the ground, and entertain'd them with a *Speech*; returning again in the close down to his peaceful *Urn*.

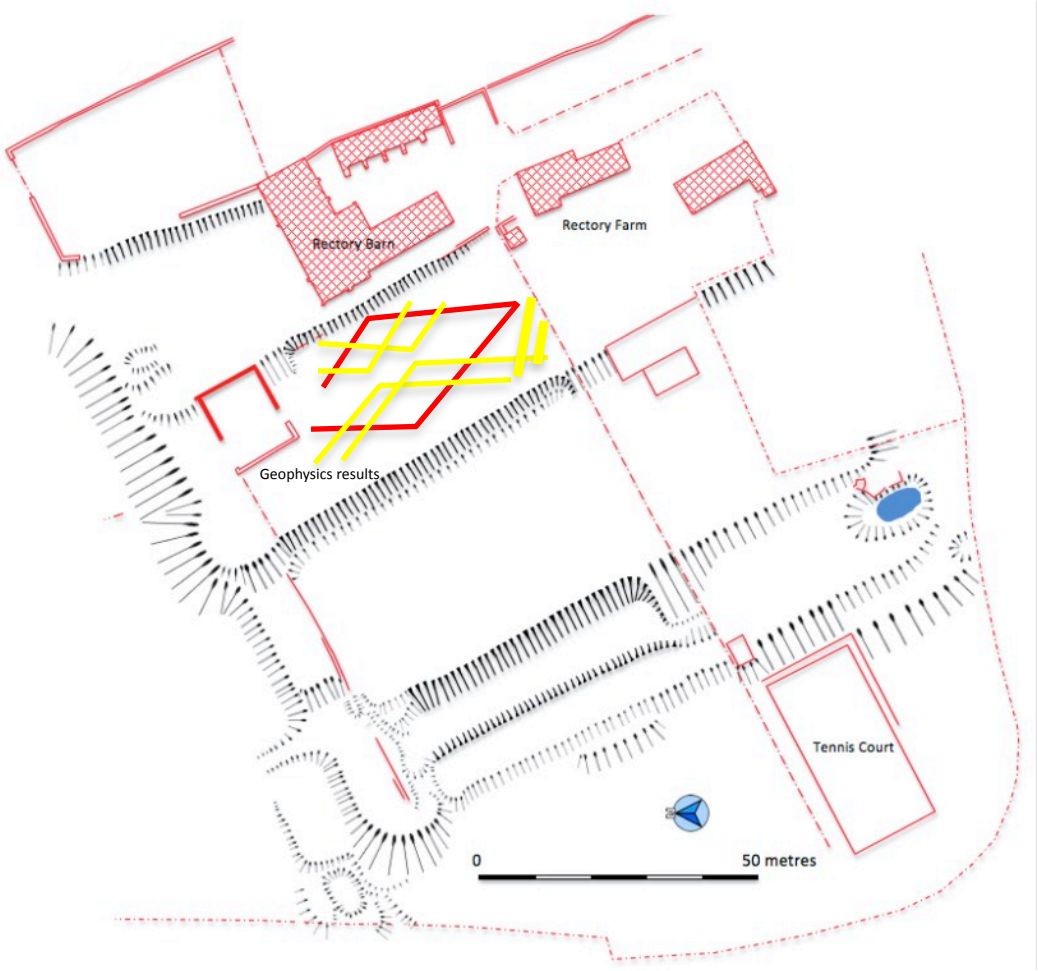

Figure 27. Church Enstone, formal garden, plan of earthworks.

> Then was the *Rock* presented in a *Song* answer'd by an *Echo*, and after that a *Banquet* presented also in a *Sonnet*, within the Pillar of the Table; with some other songs, all set by *Simon Ive*. [298]

The whole event was set up, according to some commentators, to gain the King's support for Bushell's acquisition of mining rights for silver in Wales. In fact he went so far as to serve the banquet on silver plates made from metal he claimed to have quarried and extracted himself. [299] As it happened, Bushell had plenty of opportunities to mine for the King as he went on to mint coins in Aberystwyth from 1637 to 1642 before moving to Shrewsbury and then Oxford in 1643. [300] After the war Bushell was left with a huge amount of debt from which his fortunes never recovered. In some sense he still saw himself as the inheritor of Bacon's wishes as in the 1650s he revisited the idea of creating, ' "a foundation or building, which is designed for the execution of my Lord Verulam's New Atlantis" in Lambeth Marsh and later to build, "Solomon's House in all its dimensions" in the city of Wells.' [301] None of this materialised. Whilst as a character Bushell remains elusive, with the Enstone Marvels he produced what Mowl describes as 'a triumph of applied hydraulic engineering', ascribing the technical expertise to his readings of Salomon de Caus' *Les Raisons des Forces Mouvantes*. [302] We shall consider developments at Enstone post Civil War and their connections with Hanwell below. [303]

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[298] Plot, *Natural History*, p. 241.

[299] Thacker, *Oxfordshire Gardens*, p. 42.

[300] George Boon, 'Bushell, Thomas (b. before 1600, d. 1674)', *ODNB*.

[301] Quoted in Webster, *The Great Instauration*, p. 366.

[302] Mowl, *Oxfordshire*, p. 36.

[303] See below, pp. 153-6 for later works at Enstone.

Other Seventeenth-Century Water Gardens

After James I took a liking to the Cecil's property at Theobalds an exchange was arranged such that Robert Cecil was granted the slightly decrepit Tudor Palace at Hatfield in 1607. As Lawrence Stone puts it, 'James I's increasing predilection for Theobalds as a hunting-lodge made it prudent and, it was hoped, profitable, to offer the house and parks to the Crown'. [304] Work on a new house began immediately under the close personal supervision of Cecil but with a variety of contractors employed, including in the latter stages, Inigo Jones. Similarly a host of gardeners and engineers were recruited to work on the gardens. In 1611 a Thomas Chaundler together with a Dutch engineer, Simon Sturtevant, managed operations in the East Garden where a rock based fountain of Neptune, with issuing stream, had been installed. There were technical problems with these water works as, late in the same year, Salomon de Caus was brought in to work on the fountain and associated cisterns. Stone sums up the work in these terms:

> All this was altered during the winter of 1611-12 in accordance with the new plans of de Caus, who designed a grand new central fountain. In the huge marble basin, made by the Dutch tomb-carver, Garrett Johnson, was a great artificial rock on an iron-work core. On this stood a metal statue, cast by another Dutch tomb-carver, Garret Christmas, and painted to resemble copper by Rowland Bucket. From this elaborate centre-piece ran a shallow meandering little river, in imitation of one at the Earl of Exeter's (presumably at Burghley House). This item also gave a good deal of trouble, and was altered several times. The bottom of the winding stream was paved with coloured pebbles and sea-shells. Winkles and stones were collected in England, and Tradescant shipped back from Paris one chest and eight boxes

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[304] Lawrence Stone, 'The Building of Hatfield House', *Archaeological Journal*, vol. 112, no. 1 (1955), p. 102.

> of shells. In addition, little leaden leaves, snakes and fishes were scattered about the face of the rock and the bottom of the stream. [305]

Earlier the same year came the first reference to a water feature known as 'The Dell'. Work here was supervised by Mountain Jennings, Cecil's gardener from Theobalds, and it is likely that he was responsible for the well known drawing of the site (Figure 28). [306] This shows, in slightly diagrammatic form, a stream running, corner to corner; through the centre of a square moated enclosure at the middle of which is an arcaded pavilion with a tower at one end overlooking a balcony. This structure is flanked by what appear to be hippocampus or sea-horses that may

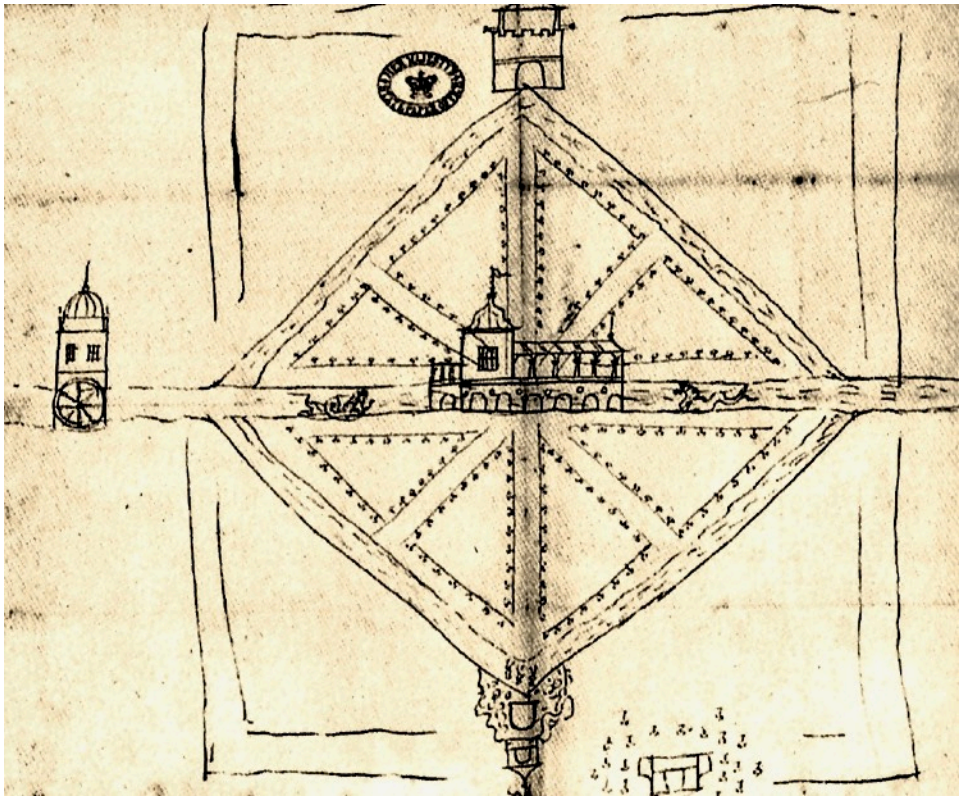

Figure 28. Sketch of works at the Dell, Hatfield House, TNA Cecil papers. Permission applied for.

[305] Ibid., p. 127.

[306] Quoted in ibid., p. 128, Cecil Papers, TNA, S. P. 14/61 30 Jan 1611.

represent fountains. Upstream is shown a water wheel at the base of a tower which must have held a header tank into which water could be pumped for the fountains. The remaining two corners are marked by what may be another pavilion and a grotto. The effect on the ground was captured by a French visitor, Samuel de Sorbière in 1663 who remarked on:

> a small River which as it were forms the Compartiments of a large *Parterre* , and rises and secretly looses itself in an hundred places, and whose Banks are all Lined or Boarded […] We Dined in a Hall that looked into a Greenplot with Two Fountains in it, and having Espaliers on the sides, but a bilister before it, upon which are Flower-Pots and Statues; From this Paterre there is a way down by Two Pair of Stairs of about Twelve or Fifteen Steps to another, and from the Second to the Third: From this Terass you have a Prospect of the great Water Parterre […] You have also in those places where the River enters into and comes out of the Parterre, open Sorts of Boxes with Seats round where you may see a vast Number of Fish pass too and fro in the Water. [307]

Strong was of the opinion that, 'Hatfield, with its walled, terraced gardens falling away from the house, was new in 1612 and destined to have probably a very considerable influence on the development of a particular garden type which was to run on into the post-Restoration period'. [308] However, the gardens that Baptist Hicks began at Chipping Campden, Gloucestershire, were an equal to those at Hatfield and certainly a close contemporary.

One of six sons born to a London mercer, Baptist Hicks (1551-1629) continued in the trade and made his fortune, being knighted in 1603. His brother Michael was secretary to William Cecil, Lord Burghley and Hicks built himself, from

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[307] S. Sorbière, *A Voyage to England* (London, 1709), pp. 64-5.

[308] Strong, *The Renaissance Garden*, p. 107.

1610 onwards, a grand house next door to Cope Castle in Kensington. Having purchased the manor of Chipping Campden around 1609, he began a massive programme of building there too. [309] The upper garden, framed by paired pavilions, was extended after Baptist Hicks's death in 1629 by his daughter Lady Juliana to create what Mowl describes as the 'water world at the foot of the hill'. [310] Following the burning of the house in 1645 the gardens reverted to pasture and exist today as one of the finest sets of garden earthworks in the country (Figure 29). The house stood on the edge of a large terrace with banqueting houses, which survive, to either side (Figure 30). It overlooked a large parterre flanked by raised banks. Below this area are a series of terraces, probably planted up as an orchard, and running down the hill to a long canal-like pool at the bottom with a stream beyond. At the eastern end of the terracing survives a small water parterre consisting of a square pool with internal banks that can still be carefully traversed dividing it up to create an inner pool, possibly originally lozenge shaped. Further to the east lies a prospect mound. The strong symmetry of the site has been lost at its south east corner. Where a parterre should have been there is a much larger earthwork known as the 'The Great Sink'. This has the appearance of having originated as a medieval moated site. The garden may have remained unfinished at this point. Everson stresses how, 'Their careful siting allowed them to take advantage of and enhance the natural topography through a series of descending terraces while also exploiting the potential for water features.' [311] This is a situation that was exploited in a similar way with the great east terrace at

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[309] Robert Ashton, 'Hicks, Baptist, first Viscount Campden (1551?–1629)', *ODNB*.

[310] Timothy Mowl, Historic Gardens of Gloucestershire (Stroud, 2002), p. 38.

[311] Paul Everson, 'The Gardens of Campden House, Chipping Campden, Gloucestershire', *Garden History*, vol. 17, no. 2 (1989), p. 113.

Hanwell. [312] Recent excavations at Campden between 2014 and 2018 revealed traces of paths and a central fountain in the main parterre, as well as the vast scale of earth-moving needed to create the terracing for the house and garden. [313]

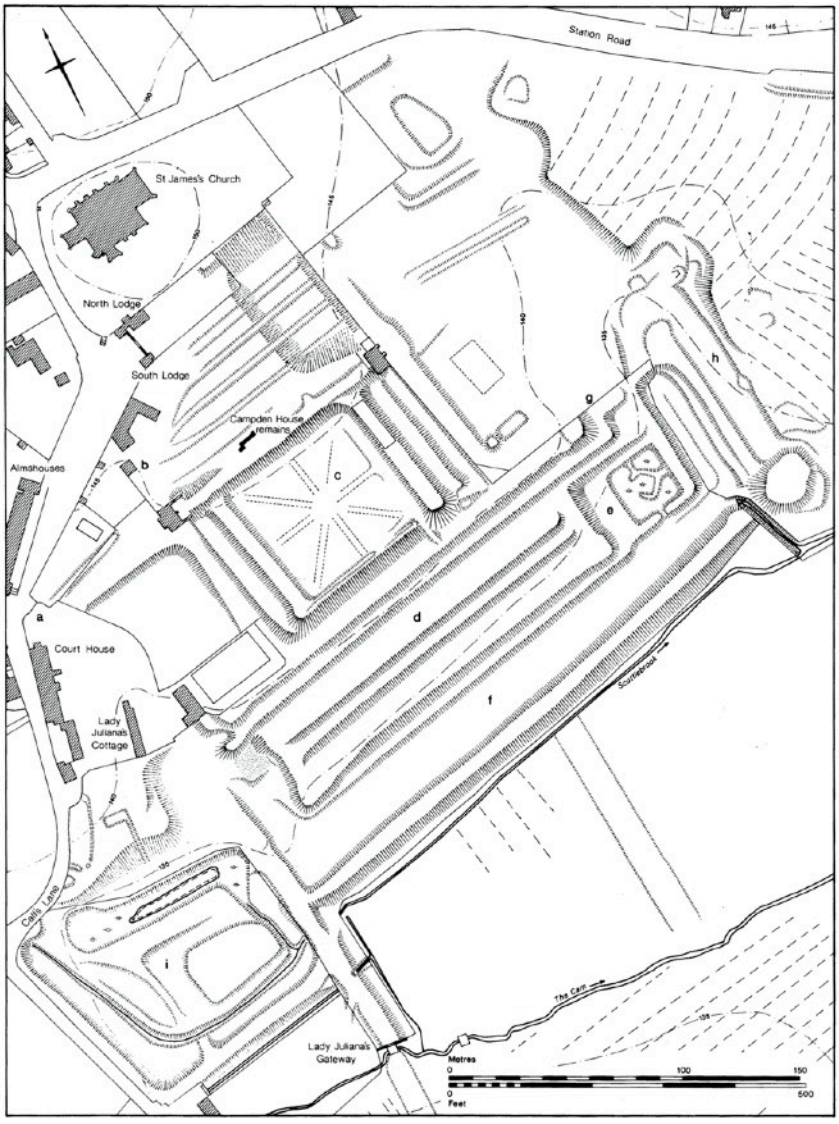

Figure 29. Chipping Campden, plan of the earthworks, © RCHME.

[312] See below, p. 263.

[313] Vanessa Rigg (ed.), *The Howse which was so Faire, Discovering Campden House and Gardens* (Chipping Campden, 2018).

Figure 30. Chipping Campden, view of garden earthworks and banqueting house looking north.

A number of other smaller gentry gardens in the area were likely to have been influenced by the great works at Campden, notably Saltwood, Swinbrook and Church Enstone, all in Oxfordshire. Further afield there were similar layouts at Harrington, where the house lies beyond the pool at the foot of the slope and Wakerley, both in Northamptonshire. Similarities are also seen at Brooke Priory, Rutland, purchased for the sum of £845/10/- in 1535 by the 1st Baronet, Sir Anthony Cope and later the home of Baptist Hicks's in-laws. [314] The situation here was complicated with the garden being laid over earlier monastic works. Such terraced gardens over looking water courses could only work where the land form was appropriate. A good instance of a fully developed garden after this pattern is the now vanished Massey's Court, Llannerch, painted in 1662 (Figure 31). Particularly striking is the sheer

[314] MacKenzie Walcott, 'The Benedictine Abbey of St. Mary, Pershore', *Journal of the British Archaeological Association:* First Series, vol. 32. no. 3 (1876), p. 342.

Figure 31. Gardens of Masseys Court, Llannerch, painting of 1662. By permission, Yale Center for British Art, Paul Mellon Collection, USA.

amount of architectural detailing packed into the garden and although there may be an element of wishful thinking embodied in the painting it remains a pointed reminder of just how 'built up' gardens of the period could be.

One of the most remarkable examples of a complex of pools constructed to geometric principles can be seen at Tackley in Oxfordshire. It remains oddly invisible at the heart of the village and when accessed has a curiously toy-like feel to it, perhaps one the best instances of garden as plaything. In 2016 the area was cleared of vegetation, the pools were dredged and the profiles of the various channels restored (Figure 32).

Fig 32 Tackley water garden after restoration © The Jessop Consultancy

Back in 1612 the manor of Tackley was sold to John Harborne (1582-1651) of the Middle Temple who moved there shortly afterwards and began establishing his status as a country gentleman with the aid of his steward, Rowley Ward. He became the high sheriff of Oxfordshire in 1632. Work on a new manor house, since demolished, began around 1615 and terraced formal gardens were laid out to the west of the house. [315] Just over 350m to the east of the house, near a spring known as the Tackwell, Harborne constructed his water garden.

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[315] A. P. Baggs, Christina Colvin, H. M. Colvin, Janet Cooper, C. J. Day, Nesta Selwyn and A. Tomkinson, 'Parishes: Tackley', in *A History of the County of Oxford: Volume 11, Wootton Hundred (Northern Part)*, ed. Alan Crossley (London, 1983), pp. 194-208. *British History Online* http://www.british-history.ac.uk/vch/oxon/vol11/pp194-208, accessed 3 September 2021.

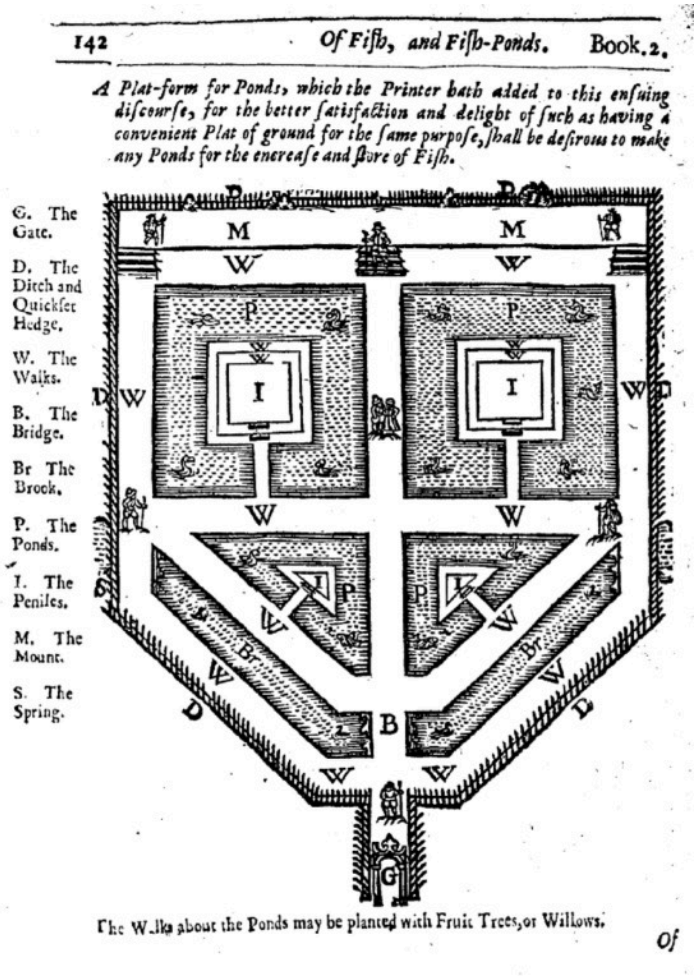

Figure 33. A Plat-form for ponds, Gervase Markham 1623.

Whittle and Taylor make a convincing case for the works being undertaken between 1620 and 1623. [316] The stone gateway dated 1620 may mark the commencement of work on site whilst the publication in 1623 of the third edition of *Cheape and good husbandry for well-ordering of all beasts, and fowls, and for the generall cure of their Diseases* by Harborne's friend Gervase Markham may reflect an on-going dialogue with author. [317] His chapter on fishing and fish ponds featured a plan nearly identical to Harborne's Tackley complex except for the fact that Tackley is

[316] Elizabeth Whittle and Christopher Taylor, 'The Early Seventeenth-Century Gardens of Tackley, Oxfordshire', *Garden History*, vol. 22, no. 1 (1995) , pp. 37-63.

[317] Gervase Markham, *Cheape and good husbandry for well-ordering of all beasts, and fowls, and for the generall cure of their Diseases* (London, 1623).

obviously unfinished (Figure 33). This was probably because of difficulties acquiring a portion of additional land. After Harborne's death in 1652 further improvements to the property were precluded by the fact that both his sons were drunkards; a family tragedy that ensured a feature surviving that might have been swept away by more prosperous descendants. Functionally there can be no doubt that the cultivation of fish as a food stuff was foremost in the mind and angling was well known as a popular pastime. In that context it is interesting that Markham deals primarily with recipes to attract different types of fish which can then be netted. However, the layout of such ponds is well known and complex arrangements of pools for fish breeding can be seen at Lyddington in Leicestershire and Charwelton in Northamptonshire and in many other midland village locations. In both places the existence of raised terraced walks suggests an ornamental function too. A simple arrangement of six rectangular ponds in a descending sequence with accompanying terraces may be seen at Walcot near Charlbury, Oxfordshire. [318] Although undated these are assumed to have been constructed by the Jenkinson family at some point in the seventeenth century. Such comparatively straight forward features are rarely illustrated although an example at Esher Palace, Surrey was depicted in 1707. Plot appears unaware of the ponds at Tackley although he is familiar with similar if less geometric works elsewhere in the county:

> Not impertinent hereunto is a Contrivance for *Fish-ponds*, that I met with at the Right Worshipful Sir *Philip Harcourt's* at *Stanton Harcourt*, where they *Stews* not only feed one another, as the *Ponds* of the Right Honourable the Earl of *Clarendon* at *Cornbury*, the Learned *James Tyrril's* Esq; at *Shotover Forrest*, and Mr. *Whorwood's* at *Holton,* &c. and many may be *sewed* by letting the Water of the upper Ponds out into the lower; but by a *side Ditch* cut along by them, and *Sluces* out of each, may be any of them emptied,

[318] Oxon. HER no. 4193.

> without letting the *Water* into, or giving the least Disturbance to the rest: which being a Convenience that I never met with before, and perhaps unknown to many, I thought good to mention. [319]

The form of the works at Tackley is altogether more complex and regular and in its use of angular peninsulas reflects aspects of Sir Walter Cope's water maze at Kensington. The extended use of triangles as a motif was viewed by Whittle and Taylor as possibly referring back to aspects of military engineering as we see in the use of bastion-like features in later gardens. They also raise the possibility that, as with Tresham at the Triangular Lodge, Rushden in Northamptonshire, there was a religious dimension to the shaping. In the final analysis Whittle and Taylor state that 'the layout of the Tackley water gardens has no exact parallel elsewhere'. [320] Whatever the case, it was Strong's opinion that:

> By then such a feature was becoming old-fashioned, but John Harborne its creator was heir to a City fortune and legging his way up the social scale. Harborne was in fact upstaging the taste of his superiors from a decade before. The fact that the design for it was printed in the 1623 edition of Gervase Markham's *Cheape and Good Husbandry* catches the slippage down the social scale. [321]

Whittle and Taylor emphasise the point: 'The reason may be that few if any ornamental water gardens of this kind were made after the I620s. After the Civil War ideas of baroque grandeur and axial planning filtered into Britain from France. Simpler layouts of canals and avenues replaced the earlier, fussier arrangement.' [322] If Oxfordshire was lagging behind in matters of fashionable garden design, the future

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[319] Plot, *Natural History*, p. 239.

[320] Whittle and Taylor, 'Gardens of Tackley', p. 55.

[321] Strong, *The Renaissance Garden*, p. 7.

[322] Whittle and Taylor, 'Gardens of Tackley', p. 57.

was being expressed in gardens such as Wilton in Wiltshire with its early phase of Palladianism seen in both house and garden in the early 1630s.

Although Salomon de Caus was involved early in the century in a few very prestigious projects, the fact that some of them were not brought to completion whilst others had a comparatively short life contributes to the notion that the more influential figure may have been his younger brother, Isaac de Caus (1590-1648). Dianne Duggan notes that he was first recorded working in England in 1623 where he, 'was being paid for, "making a Rocke in the vault under the banqueting house", the banqueting house in question being that designed by Inigo Jones in Whitehall.' [323] Duggan suggests in 1626 he designed a grotto for Henry, Lord Clifford, the future 5th Earl of Cumberland at Skipton Castle in Yorkshire before moving on to Bedford House in Covent Garden and Woburn Abbey in Bedfordshire, both for Francis Russell, the 4th Earl of Bedford. The grotto at Woburn is a remarkable survival and provides a useful reference point when considering other grottoes of the period known only from contemporary illustrations. Writing of it Strong says, 'De Caus must have been greatly in demand but he did not begin on his most famous work at Wilton House, Wiltshire, until 1632. What was this astonishing man doing during the preceding decade?' [324] He is of the opinion that he may have had a hand in the design of Moor Park, Hertfordshire where Lucy Harrington moved in 1617. Describing the now vanished garden, levelled by Capability Brown, Strong thought that it was 'the earliest, most spectacular evidence of Italian Renaissance gardening in England'. [325]

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[323] Dianne Duggan, 'Isaac de Caus: surveyor, grotto and garden designer', *Studies in the History of Gardens & Designed Landscapes*, vol. 29, no. 3 (2009), p. 152.

[324] Strong, *The Renaissance Garden*, p. 141.

[325] Ibid., p. 145.

This is perhaps stretching a point as essentially the gardens as described by Sir William Temple in the 1670s are similar to those at Holdenby from late in the sixteenth century and the broadly contemporary garden at Chipping Campden. Of course De Caus may have had assisted Thomas Bushell with the engineering at Enstone, especially if the project was, in some sense, sponsored by Charles I. Unfortunately there is no evidence for this.

Philip Herbert, 4th Earl of Pembroke (1584-1650) courtier and advisor to both James I and later Charles I, inherited the property at Wilton in 1630. John Bold notes that, 'According to Aubrey, Philip the 4th Earl was following a suggestion of Charles when he embarked upon the alteration and enlargement of Wilton House and the laying out of the gardens in the 1630s, the works being carried out under the direction of Isaac de Caus with the detailed advice of Inigo Jones'. [326] An earlier garden from the 1560s onwards included a pond garden to the west of the house where a contemporary survey recorded that 'there are five pools newly made in the past year at the the walks around the aforesaid'. [327] These pools survived into the eighteenth century. The year 1632 saw the start of work on the new garden with expenditure reaching a peak two years later. The initial design, proposed by de Caus and 'in the Italian manner' by Aubrey's account, was for a large strictly symmetrical garden placed against a vastly extended south front of the house creating what Mowl describes as, ' a garden of precision with toys of water'. [328]. The extension to the

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[326] John Bold, *Wilton House and English Palladianism* (London, 1988), p. 25.

[327] Quoted in Jane Whitaker, 'An Old Arcadia: The Gardens of William Herbert, 1st Earl of Pembroke, Wilton, Wiltshire', *Garden History*, vol. 42, no. 2 (2014), p. 146.

[328] Mowl,'New science, old order:the gardens of the Great Rebellion', *Journal of Garden History*, vol.13, no. 1 (1993), p. 17.

building was never achieved leaving the central axis of the scheme aligned on the south west corner of the house. Such was the desire for a regular scheme of planting that the line of the River Nadder that runs at an angle across the garden from west to east was all but ignored. De Caus's special expertise with water was expressed in a grotto and several fountains. Celia Fiennes visited sometime before 1682 and her detailed account creates a picture of one of the last great expressions of the art of *giochi d'acqua* in England:

> The Gardens are very fine with many gravel walkes with grass squaires set with fine brass and stone statues-fish ponds and basons with ffigures in the middle spouting out water-dwarfe trees of all sorts and a fine flower garden-much wall fruite. The river runns through the garden that easeily conveys by pipes water to all Parts. A Grottoe is att the end of the garden just the middle off the house-its garnished with many fine ffigures of the Goddesses, and about 2 yards off the doore is severall pipes in a line that with a sluce spoutts water up to wett the strangers-in the middle roome is a round table and a large Pipe in the midst, on which they put a Crown or Gun or a branch, and so yt spouts the water through the Carvings and poynts all round the roome at the Artists pleasure to wet the Company-there are figures at Each corner of the roome that Can weep water on the beholders and by a straight pipe on the table they force up the water into the hollow carving of the rooff like a Crown or Coronet to appearance but is hollow within to retaine the water fforced into it in great quantetyes yt disperses in the hollow Cavity over the roome and descends in a Shower of raine all about the roome-on each side is two little roomes which by the turning their wires the water runnes in the rockes-you see and hear it and also it is so contrived in one room yt it makes the melody of Nightingerlls and all sorts of birds wch engages the Curiosity of the Strangers to go in to see, but at the Entrance off each room is a line of pipes that appear not till by a Sluce moved-it washes the spectators designed for diversion.
> The Grottoe is leaded on the top where are fish ponds, and just without the grottoe is a wooden bridge over the river. The barristers are set out wth Lyons set thick on Either Side wth their mouths open, and by a sluce spout out water each to other in a perfect arch the length of the bridge. There are fine woods beyond the house and a large parke walled in. [329]

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[329] Christopher Morris, (ed.), *The Illustrated Journeys of Celia Fiennes 1685-1712* (London, 1982), pp. 38-9.

Fiennes perhaps missed the technical detail of how the water was supplied to the grotto; Aubrey, however, had noticed that, 'by the kitchen gardens a stream which turns a wheel that moves the engine to raise water to the top of the cisterns at the corner of the great garden, to serve the water works of the grotto'. [330] Aubrey also commented on the fact that, 'Monsieur de Caus had here a contrivance, by the turning of a cocke, to shew three rainbowes, the secret whereof he did keep to himself; he would not let the gardener, show to strangers, know how to doe it; and so, upon his death, it is lost.' [331] Apart from demonstrating a certain level of commercial acumen the installation of a 'rainbow' fountain was, in Paige Johnson's words, ' a unique combination of myth and mechanics; a nexus of cultural emblems, personal iconography, and scientific advances in an ornament'. [332] Other fountains with accompanying statues raised, according to Mowl, less elevating thoughts in the mind of a least one visitor. A Lieutenant Hammond, whose comments on the Enstone Marvels have already been quoted, had:

> the privilege of being taken around by Isaac de Caus in person. He describes him as 'the fat Dutch keeper thereof, a rare Artist'. […] Hammond gives the impression of being in a state of lecherous excitement. In each of the parterre squares was a fountain with a nude statue of a woman. He reported gleefully: 'on one is Venus with her son Cupid in her Armes; in another Diana with her bathing sheeting a third is Susanna pulling a thorn out of her Foote; and in the fourth Cleopatra with the Serpent'. He added lustfully that 'with the turning of Cockes' there was 'a washing and dashing the Eyes and Thighs of faire Venus and Diana'. [333]

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[330] John Aubrey, *Memoirs of Natural Remarques in the County of Wiltshire* , J. Britton, (ed.), (London, 1847), p. 91.

[331] Ibid., p. 84.

[332] Paige Johnson, 'Proof of the Heavenly Iris: The Fountain of Three Rainbows at Wilton House, Wiltshire', *Garden History*, vol. 35, no. 1 (2007), p. 51.

[333] Timothy Mowl, *Historic Gardens of Wiltshire*, (Stroud, 2004), p. 35.

Remarkably these statues, by the Dutch trained sculptor, Nicholas Stone (1586-1647), remain extant and are illustrated with photographs by Strong. [334] Stone was an innovative and progressive sculptor and architect who amongst other commissions was responsible for statuary for Christopher Hatton at Kirby Hall, Northamptonshire and the Danby gateway at the Oxford Botanic Garden (Figure 40). Also present at Wilton is one of the columns that were the basis for the two 'coronet' fountains, where a crown was made to rise and fall by the pressure of the water. According to de Caus's own publication from around 1645, *Le Jardin de Wilton*, the design of the garden also included a cascade and an elaborate water parterre, although its precise location has never been identified and it may not have been built (Figure 34). [335] Isaac de Caus died in 1648 and it is notable that his particular brand of elaborate waterworks was far less popular in the decades after the Civil War. Amy Bovington and James Campbell believed that, 'If it was not for the advent of the English Civil War in 1642 and its consequent political instability, it is likely that there would have been many more such ornate gardens, grottoes, fountains and automata in England.' [336]

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[334] Strong, *The Renaissance Garden*, p. 150.

[335] Isaac de Caus, *Wilton Garden,* Facsimile edition (London, 1895).

[336] Amy Boyington and James Campbell, 'The Influence of the de Caus brothers on Hydraulic Engineering and Fountain Design in Seventeenth-Century England', in James Campbell, et al (eds.), *Water, Doors and Buildings: Studies in the History of Construction* (Cambridge, 2019), p. 57.

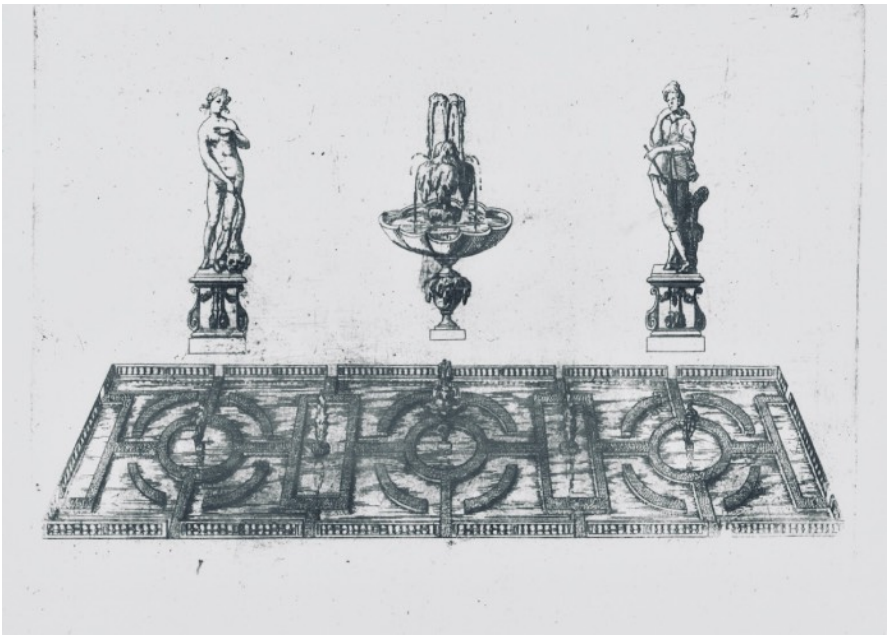

Figure 34. Wilton House, the water parterre and statues, as illustrated by Isaac de Caus c.1645. Creative Commons Public Domain Mark 1.

A final flourishing of garden design before the vicissitudes of the Civil War and Commonwealth can be seen at Hunstanton Hall in Norfolk. Here a modest house began with a brick gatehouse around 1490 and was added to in 1578 and in the 1630s, belonged to the Le Strange family. [337] The gardens around the hall were based on a series of interconnecting moats not dissimilar to Theobalds but perhaps not on quite such a grand scale (Figure 35). Dating from the 1640s is the Octagon (Figure 36). The Historic England listing describes it and its environs in these terms,

> approximately 200m south of the Hall is the octagonal carstone and brick banqueting house known as The Octagon (listed grade II*), constructed on an island surrounded by an octagonal moat and reached by a small brick and stone footbridge. Some 30m south of this is a small rectangular pool lined with tiles known as 'Grandfather's Bath', which feeds the octagonal pool that in turn feeds the Hall moats. [338]

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[337] Patsy Dallas, Roger Last and Tom Williamson, *Norfolk Gardens and Designed Landscapes* (Oxford, 2013), p. 229.

[338] Historic England Listing, https://historicengland.org.uk/listing/the-list/list-entry/1001006, accessed 14 May 2021.

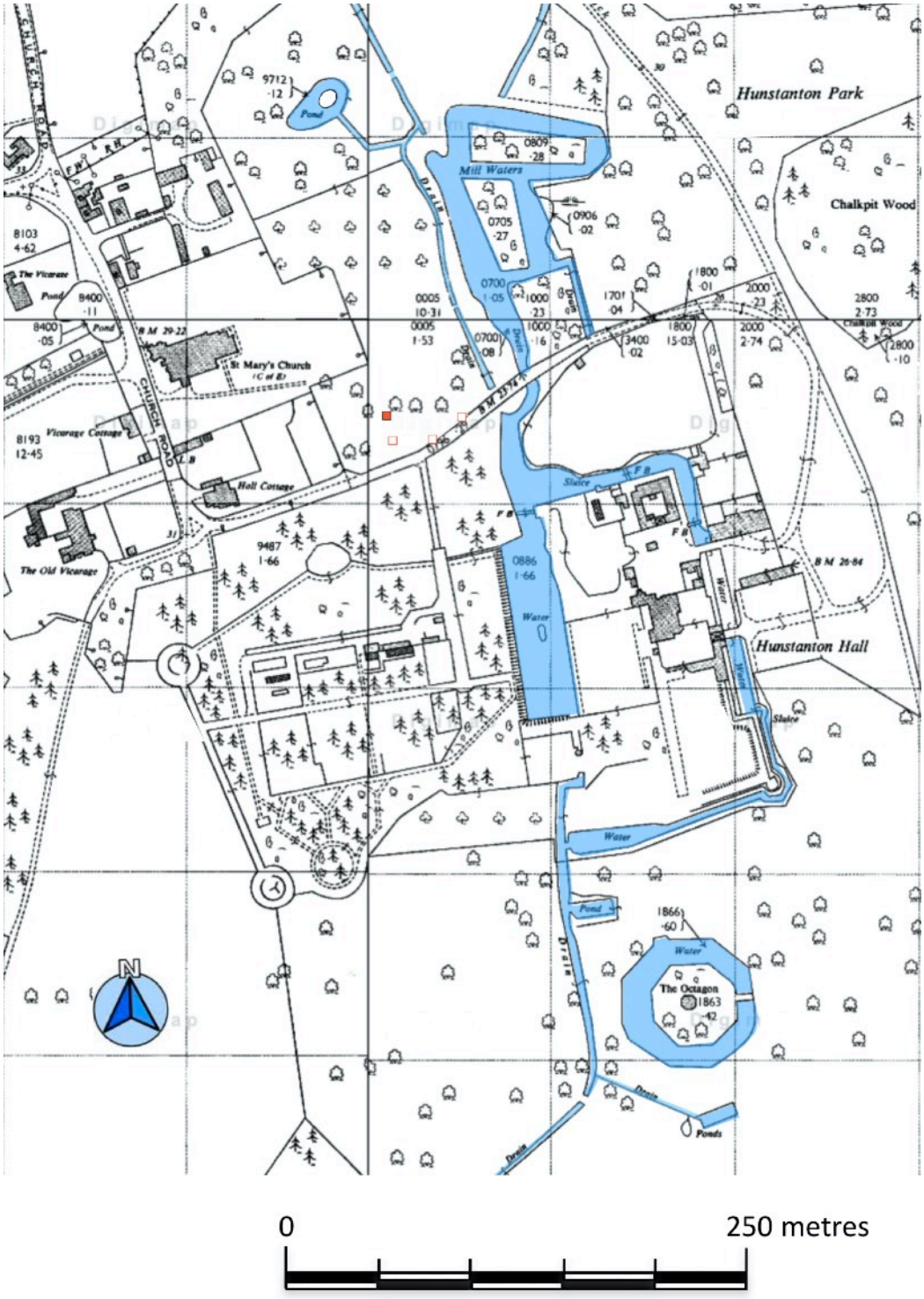

Figure 35. Hunstanton Hall, plan of water features. © Crown Copyright and Landmark Information Group Limited (2021). All rights reserved.

Figure 36. Hunstanton Hall, The Octagon: bridge, moat and banqueting house.

This is a particularly interesting combination in view of the octagonal island and 'House of Diversion' at Hanwell, a garden in which one can also find 'Sir Anthony's Bath'. [339] A possible connection exists through family ties recorded by Francis Blomefield: 'Sir Nicholas L'Estrange's second wife was Anne, daughter of SirWilliam Paston, by whom he had no issue: she was widow of Sir George Chaworth, of Nottinghamshire, and married a third husband, Sir Anthony Cope.' [340]

[339] See below, p. 278 for details .

[340] This was the 1st baronet, see Francis Blomefield, 'Smethdon Hundred: Hunstanton Lordship', in *An Essay Towards A Topographical History of the County of Norfolk,* vol. 10 (London, 1809), pp. 312-28.

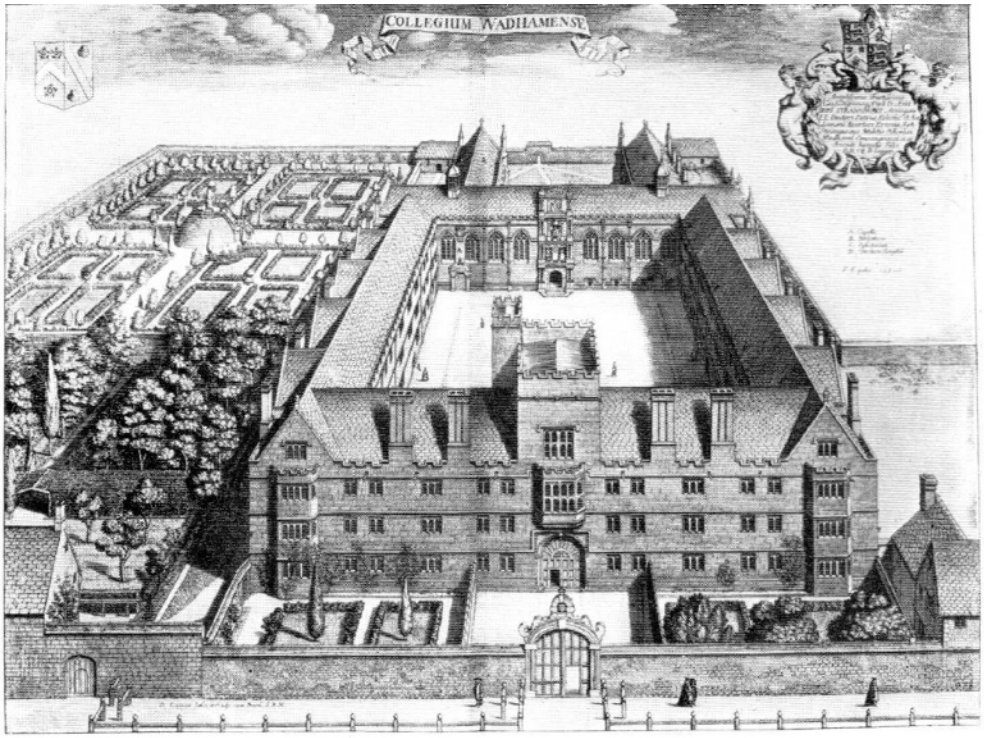

Figure 37. Wadham College and gardens from David Loggan's *Oxford Illustrata* of 1675.

The gardens so far examined were designed for a combination of pleasure and profit in varying proportions. However, even more significant for the study of the gardens at Hanwell is a garden with an avowedly 'scientific' purpose established at Wadham College, Oxford. The college was founded in 1609 by Dorothy Wadham on land which was part of an Augustinian priory. A framework of medieval walls defined the boundary and gave some structure to the gardens. [341] The garden itself was rather conservative in form with a central mount surrounded by four plots, further cast into quarters and hedged (Figure 37). What made it special were the additions commissioned by John Wilkins (1614-72) from 1651, in what Mavis Batey describes as, 'a manner to please the distinguished set of natural scientists who made the

[341] Scott Mandelbrote, 'John Wilkins and the Gardens of Wadham College', in *John Wilkins and the Gardens of Wadham College* (Leiden, 2017), p. 199.

college their home at Dr. Wilkins's invitation'. [342] More specifically, as we shall see, he gathered together a community of like-minded individuals such as Seth Ward, John Wallis, William Petty, Ralph Bathurst, Robert Boyle, Robert Hooke and Christopher Wren and managed cultural and social events. [343] Given his later interests, as recorded by Plot, the young Anthony Cope, the 4th baronet, would almost certainly have participated in some of these assemblies. The other element, very much in the tradition of Bacon's *The New Atlantis*, was the provision of suitable facilities for the study of natural philosophy. Oxford was no stranger to such advances; the university's Botanic Garden had been opened in 1621, 'to promote the furtherance of learning and to glorify nature'. [344] However, the marvels assembled at Wadham were particularly worthy of comment. Aubrey, Evelyn and Plot all reported on them. Evelyn visited Wadham in 1654:

> We all dined at that most obliging and universally-curious Dr. Wilkins's, at Wadham. He was the first who showed me the transparent apiaries, which he had built like castles and palaces, and so ordered them one upon another, as to take the honey without destroying the bees. These were adorned with a variety of dials, little statues, vanes, etc.; and, he was so abundantly civil, finding me pleased with them, to present me with one of the hives which he had empty, and which I afterward had in my garden at Sayes Court, where it continued many years, and which his Majesty came on purpose to see and contemplate with much satisfaction. He had also contrived a hollow statue, which gave a voice and uttered words by a long, concealed pipe that went to its mouth, while one speaks through it at a good distance. He had, above in his lodgings and gallery, variety of shadows, dials, perspectives, and many other artificial, mathematical, and magical curiosities, a waywiser, a thermometer, a monstrous magnet, conic, and other sections, a balance on a demi-circle; most of them of his own, and that prodigious young scholar Mr. Christopher Wren, who presented me with a piece of white marble, which he

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[342] Mavis Batey, *Oxford Gardens, the University's Influence on Garden History* (Oxford, 1982), p. 43.

[343] Penelope Gouk, 'Performance practice: music, medicine and natural philosophy in Interregnum Oxford' , *British Journal for the History of Science,* vol. 29 (1996), pp. 257-88.

[344] Roger Bowdler, 'Landscapes of Learning: Gardens and Grounds at England's Older Universities 1550-1800', *Baltic Journal of Art History,* vol. 16 (2018), p. 20.

> had stained with a lively red, very deep, as beautiful as if it had been natural. [345]

As well as having serious intentions Wilkins was not above the occasional practical joke and one wonders what the impact may have been of the prank he played on George Ashwell, later to be Sir Anthony Cope's chaplain and rector of Hanwell. Fellow of Jesus College, Cambridge, Thomas Woodcock (d. 1695), told the story:

> Of Mr. Ashwell abused by Dr. Wilkins-When the Dr. was warden of Wadham Colledge he had the statue of Flora in his Garden; into which he had contrived a pipe, thro' which to speak. At that time Oliver Cromwell had sent to the University if any would go to preach the Gospel in Virginia, they should have good incouragement. One Mr. Ashwell was walking towards the statue, when Dr. Wilkins sat conveniently to whisper and said, Ashwell goe preach the Gospel in Virginia. The voice amazed him, and at the next return, it repeated the same words. At another return it said, Ashwell, for the 3rd and last time, goe preach the Gospel in Virginia.
> He going off amazed, the Dr. wheeled about and meet him:asked him what ayled him to look so affrighted: He said if ever man heard a voice from heaven I did; the Dr. said you have always derided such fancyes; but he persisted in it, til the Dr. unridled all to him, that he might have a quiet in his mind and suffer no harm by a delusion. [346]

Anthony Turner considered the joke to be 'harmless except that Ashwell was convinced that he had heard heavenly instruction' but the fact that, as a story, it was being passed round Cambridge suggests that Ashwell may have not been quite so amused. [347]

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[345] John Evelyn, *Diary: Introduction and De Vita Propria*, ed. E. S. De Beer, vol. 1 (Oxford, 1955).

[346] *Extracts from the papers of Thomas Woodcock (Ob. 1695),* ed. G. C. Moore Smith (London, 1907), p. 81. As a former fellow of Jesus College, Cambridge . Woodcock may have had this story from Anthony Tuckney (1599-1670) or perhaps more likely from the physician George Bate (1608-68).

[347] Anthony Turner, 'Stagecraft and Mathematical Magic in Early Modern London', *Nuncius, Journal of the Material and Visual History of Science,* vol. 22, no. 2 (2007), p. 340.

Following Wilkins's departure for Cambridge in 1659 the garden may have gone into something of a decline. Plot describes a rainbow fountain, presumably similar to that at Wilton, by repute only:

> Amongst the *Water-work*s of Pleasure, we must not forget an *Engine* contrived by the Right Reverend Father in God, *John Wilkins*, late Lord Bishop of *Chester*, when he was *Warden* of *Wadham College*, though long since taken thence; whereby but few Galons of *Water* forced through a narrow *Fissure*, he could raise a *Mist* in his *Garden*, wherein a Person placed at a due Distance between the *Sun* and the *Mist*, might see an exquisite *Rainbow* in all its proper *Colours*: which Distance I conceive was the same with that assigned by *Des Cartes*, *viz*. where the Eye of the Beholder is placed in an Angle of 42 Degrees, made by the *Decussation* of the Line of *Vision*, and the Rays of the *Sun*; and the *Fissure* such another as in his *Diagram*. But what kind of *Instrument* it was that forced the *Water*, I dare not venture to relate, the Description given me of it being but lame and imperfect. [348]

Of all this there is scarcely a trace remaining. The speaking statue of Atlas fell in a storm and then the mount was demolished in 1753 and replaced by a pond which was in turn filled in and given over to the typical grassy expanse of an Oxford college lawn.

The acquisition by John Evelyn (1620-1706) of one of the transparent bee hives from Wadham for his own garden at Sayes Court is significant. Strong views Evelyn in these terms: 'John Evelyn takes us firmly on into the world of the Royal Society. We are witnessing the shedding of the old hieroglyphic and analogic readings of the gardens in favour of empirical study.' [349] Evelyn matriculated at Balliol College, Oxford in 1637 and from 1641 he travelled extensively on the continent,

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[348] Plot, *Natural History*, p. 240.

[349] Strong, *The Renaissance Garden,* p. 221.

partly to avoid the rigours of the English Civil War, and spent considerable time in Italy where he documented visits to some of the great gardens of the day. In 1647 he returned and took over the management of his family's holdings including his main residence, Sayes Court in Kent, before finally moving to his brother George's property at Wotton House in Surrey in the 1694. Although the gardens at Wotton are still extant only the barest outline belongs to John Evelyn's era; the surviving grottoes and fountains are primarily nineteenth-century. [350] The development of these gardens was very much a family affair with his brother George in residence and cousin George supervising the works. John's role may have initially been one of offering advice and encouragement. The garden itself was fairly conventional with a parterre plus fountain, two grottoes and a mount, however, the wider estate was notable because of the extent to which water was utilised to run the family's gunpowder mills. Evelyn took on a Baconian project, first outlined in his 1605 *Advancement of Learning,* the idea being, according to Juliet Odgers, that, 'the workshops of tradesmen, the kitchen, brewhouse and gardens would serve as the sources of relevant "facts". In these places, "nature" was subjected to all sorts of revealing transformations and tradesmen were consequently in possession of a large amount of knowledge, which, if subjected to informed scrutiny, could further the natural philosopher's understanding.' [351]

Like many of Evelyn's undertakings this did not get far beyond the note-taking stage but aspects of the work did find their way into the programme of the

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[350] Historic England Listing, https://historicengland.org.uk/listing/the-list/list-entry/1000391, accessed 14 March 2021.

[351] Juliet Odgers, 'Water in use and philosophy at Wotton House: John Evelyn and the History of the Trades', *Architectural Research Quarterly*, vol. 15, no. 3 (2011), p. 238.

Royal Society. A prolific writer, his vast project on gardening, *Elysium Britannicum,* remained subject to constant revision and was ultimately unfinished. However, it is possible to chart the different strands of his thinking with regards to water. Chapter VI of Book 1 dealt with water in its philosophical and spiritual dimension, for example for gardening: '*Raine* is best and especially that which hath been reserved at the *equinoxes* […] as being most all impregnat with the *universal Spirit*'. [352] The practical and comprehensive nature of Book 2 is shown by some of the chapter headings:

> Chapter 9, Of Fountains, Cascades, Rivulets, Piscenas, Canales and Water-works
>
> Chapter 10, Of Rocks, Grots, Crypto's, Mounts, Precipices, Porticos, Ventiducts, and other Hortulan refreshments
>
> Chapter 11, Of Statues, Obeliscs, Columns, Dyals, Pots, Vasas, Perspectives, Paintings and other Ornaments
>
> Chapter 12, Of Artificial Echoes, Automats and Hydraulic motions.

Such a publication would have served the young Sir Anthony Cope admirably as a manual to have had in hand as he prepared his garden of wonders in the early 1660s and it is not inconceivable that he could have seen parts of it in manuscript form. Unfortunately it did not find its way into print until 2001. The practice of creating water gardens in the opening decades of the seventeenth century with varying degrees of technical accomplishment and ambition sets the scene for the works at Hanwell which belong to later decades. These further developments in the years before the outbreak of the Civil War give us a context within which the young Sir

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[352] John Evelyn, *Elysium Britannicum or The Royal Gardens*, ed. J.E. Ingram (Philadelphia, 2001), p. 51.

Anthony Cope developed his passion for natural philosophy and found ways to express that within his garden.

The final entry in our collection of seventeenth-century gardens returns to Bushell's Enstone Marvels but nearly half a century after the construction of the grotto and banqueting houser. After Plot's account of the King's visit to Enstone he writes of the restored Marvels (Figure 38):

> Which *Structure* with all the Ingenious Contrivances about it, continued in a flourishing Condition for some few Years, till the last unhappy *Wars* coming on, it became wholly neglected, and so sensibly decayed, till at last it lapsed (being next door to Ruine) into the Hands of the Right Honourable and truly *Noble Lord, Edward Henry* Earl of Lichfield, Lord of the *Soil*; who in the Year 1674 not only repaired the broken *Cisterns* and *Pipes*, but made a fair Addition to it, in a small *Island* situate in the Passage of a *Rivulet*. just before the Building set over the *Rock*; which though the last interaction, is yet the first that presents itself in then exterior *Prospect* of the whole Work *Tab. II* wherein the Figures
>
> *2. 2. The* Island *in the middle of it.*
> *3. 3. The* Pales *round it standing on a stone Wall.*
> *4. An artificial* Rock *erected in the middle of the* Island *covered with living aqueous* Plants.
> *5. The* Keeper *of the Water-work that turns the* Cocks.
> *6. A* Canopy *of water cast over the* Rock, *by*
> *7. an* Instrument *of* Brass *for that purpose.*
> *8. A* Column *of Water rising about 14 Foot, designed to toss a* Ball.
> *999999.* [sic] *The Streams of Water from about 30* Pipes *set round the* Rock, *that water the whole* Island, *and Sportively wet and* Persons *within it; which most* People *striving to avoid, get behind the* Man *that turns the* Cocks *whom he wets with 10. a* Spout *of* Water *that he lets fly over his Head; or else if they endeavour to run out of the* Island *over the Bridge, with*
> *11 12. which are two other* Spouts, *whereof that represented at a 11, strikes the* Legs, *and that at 12 the* Reins *of the* Back.
> *13. The* Bridge *over the Water lying on two* Trestles.
> *14. The* Steps *leading into the* Grove, *and toward the* House, *where you pass by*
> *15. a* Table *of black Marble.*
> *16. A* Cistern *of Stone, with five Spouts of* Water *issuing out of a Ball off Brass, in which a small* Spaniel *hunts a* Duck, *both diving after one another, and having their Motion from the Water.*

Figure 38. The restored Enstone Marvels from Plot's *Natural History*, Tab 12.

17. The way up into the Banqueting-room *over the* Rock*, and other* Closets &c.
18. The Passage between the Cistern *and* Building. *19. The iron Grate that gives Light to the Grot within.*
20. The Passage down to the Grot.
21. The Windows of the Banqueting-room.
22 The Grove *and* Walks *behind and on each End of the* Building. [353]

These new works at Enstone are likely to be a near contemporary to the construction of Hanwell's lesser wonders yet the whole business of their recreation is a little perplexing. The 'truly *Noble Lord, Edward Henry* Earl of Lichfield, Lord of the *Soil',* born in 1663, was just eleven years old when he is said to have commissioned repairs to the site. This same year, 1674, he was created Earl of Lichfield upon his betrothal to Charlotte Fitzroy, an illegitimate daughter of Charles II. Perhaps the refurbishment of the Enstone Marvels were thought to be an appropriate gesture towards the future nuptials of the two children. An extraordinarily sumptuous painting of the couple from the same year by Jacob Huysmans, a Flemish artist, contains 'cryptic allusions to the Roman faith, such as a peacock, symbolising resurrection, and Christ as a gardener.' [354] Edward Henry's father, Sir Francis Henry Lee, was 4th Baronet of Quarrendon, a location where there was an extensive water garden. [355] He died in 1667. His mother, Lady Elizabeth Pope, came from Wroxton, just three miles from Hanwell. There must have been at least an acquaintanceship with the Copes, and perhaps even friendship with the 4th baronet, Sir Anthony's wife Mary, who would have been of a similar age. Elizabeth's father, Thomas was present

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[353] Ibid., pp. 241-42

[354] Jacob Huysmans, *Edward Henry Lee, 1st Earl of Lichfield, and his wife Charlotte Fitzroy as children*, https://www.ngv.vic.gov.au/explore/collection/work/94683/ accessed 7 October 2021.

[355] See above, pp. 60-1 for details.

at the christening of Sir Anthony's half brother, Henry, at Bruern in 1644. [356] Presumably a senior member of the Lichfield household was responsible for actually over-seeing the design and the construction of the new island but it is possible that his mother provided the guiding hand and may have been influenced by Sir Anthony's contemporary enthusiasms and developments at Hanwell. Whatever the case there was something distinctly old-fashioned about extending the range of *giochi d'acqua* available in Oxfordshire in the 1670s but again, bearing in mind Charles II's close involvement with his daughter, there could also have been a sense of paying tribute to Charles I's patronage of the original works.

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[356] *Miscellanea Genealogica et Heraldica*, p. 241.

CHAPTER 4 OXFORD, SCIENCE AND GARDENS

Oxford and Early Scientific Thinking

The transformation of thinking, and as a consequence, teaching, relating to natural philosophy at Oxford in the seventeenth century was brought about by a combination of historical events, a certain social milieu and of course the individual talents of a number of profound thinkers and experimentalists. The condition of Oxford studies at the start of the century was summed up, perhaps with unnecessary bleakness, by the philosopher Thomas Hobbes as being, 'based on incomprehensible logic and sterile physics'. [357] The course of events that supported change, particularly in the 1650s, and that contributed to the founding of the Royal Society in the early1660s, was partially played out in the coffee shops and gardens of Oxford. Mordechai Feingold celebrates, 'the essentially liberal environment prevailing in seventeenth-century Oxford which in turn facilitated the swift and largely unchecked dissemination of the new modes of thought among teachers and students alike'. [358] A precursor to the eventual development of a school of scientific thought at Oxford around the middle of the century was the arrival of physician William Harvey (1578-1657). As the King's physician Harvey came to Oxford in 1642 and became Warden of Merton College. This enabled him to set up a circle of acquaintances, particularly anatomist Nathaniel Highmore (1613-85) and George Bathurst (1610-44) of Trinity College. George was older brother to Ralph Bathurst (1619-1704), another physician who was at Trinity

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[357] Feingold, 'Mathematical Sciences and New Philosophies', *The History of the University of Oxford*, p. 359.

[358] Ibid., p. 361.

from 1637 and went on to be an influential member of the Oxford experimental group and the Royal Society. The group was able to support him in his work towards the publication of *Exercitationes de generatione animalium* in 1651. [359] Trinity also had its own tradition of experimental interest in mathematics and mechanics going back to the time of the mathematician Thomas Allen (1542-1632). Harvey left Oxford in 1646 after the surrender of the city to Parliament.

Subsequent to the defeat of Royalist forces, and following the second civil war in 1648, attempts were made to tame the university by a series of purges. One of the parliamentary visitors appointed in 1647, and from 1648 President of Trinity College, was Robert Harris who had been evicted from the living at Hanwell five years previously and who would, of course, have known the young Sir Anthony well. [360] The puritan reformers, appointed to undertake the visitations by parliament, required from 1649 that an oath of engagement be sworn by members and employees of the university. [361] One of the consequences of the anti-Anglican sentiments embraced by the new parliamentarian rulers of Oxford was the setting up of a cavalier congregation at Beam Hall in Merton Street by cleric John Fell who had been ejected from Christ Church. Beam Hall was the lodging place of his brother-in-law, physician Thomas Willis, who, as well as being at the centre of a like-minded group of fellow physicians, also became an active member of the experimental philosophy group. Fell was joined there by two other churchmen: John Dolben and Richard Allestree, Sir

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[359] A. M. Cooke, 'William Harvey at Oxford', *Journal of the Royal College of Physicians*, vol. 9, no. 2 (1975), p. 186.

[360] Wright, S., 'Harris, Robert (1580/81–1658)', *ODNB*.

[361] Worden, 'Cromwellian Oxford', *The History of the University of Oxford*, pp. 734-6.

Anthony Cope's future house guest. [362] Through the early 1650s they 'kept up the forbidden offices of the Church of England'. [363] It is possible to over emphasise the internal conflicts between differing political and religious factions within the university during the 1650s and Worden states that, 'the partisan loyalties of puritans and royalists, deep and socially divisive as they often were, were time and again softened or sublimated by common enthusiasms, by scholarly collaboration, or by private kindness', and he cites the care administered to Robert Harris, the ailing head of Trinity College, by royalist physicians Ralph Bathurst and Thomas Willis. [364] Perhaps Sir Anthony's transition from undergraduate to virtuoso was not quite such a fraught process as one might have imagined.

In the aftermath of the parliamentarian visitations there was a series of new appointments that marked the starting point for what was once termed 'the Scientific Revolution'. [365] This began with the arrival of John Wilkins (1614-72) as master of Wadham College in 1648. Aubrey said of Wilkins, 'He was the principal reviver of experimental philosophy (in the spirit of Lord Bacon) at Oxford, where he had weekly an experimental philosophical [scientific] club, which began 1649, and was the cradle of the Royal Society. When he came to London, they met at the Bull-head tavern in Cheapside, till it grew too big for a club, and so they came to Gresham College parlour.' [366] Wilkins had come to Wadham the same year that he published his

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[362] See below, pp. 223-8.

[363] Beddard, 'Restoration Oxford', *The History of the University of Oxford*, p. 805.

[364] Worden, 'Cromwellian Oxford', *The History of the University of Oxford*, p. 771.

[365] See John Henry, *The Scientific Revolution and the Origins of Modern Science* (Basingstoke: 2001), Chapter 1.

[366] Aubrey, *Brief Lives,* p. 293

Mathematical Magick, or, The Wonders that may be Performed by Mechanical Geometry which included notes on the effects of simple mechanisms as well as more complex machines such as submarines, aircraft and automata. [367] Wilkins's influence at Oxford in defining a separation between intellectual and political pursuits did much to maintain the university's standing in the eyes of Parliamentarians and Royalists alike. [368] The same year physician and experimenter William Petty (1623-87) was given a fellowship of Brasenose College and Sir Anthony Cope matriculated at Oriel College. These events were followed closely by the appointments of John Wallis (1616-1703), mathematician and cryptographer as Savilian Professor of Geometry and Seth Ward (1617-89) as Savilian Professor of Astronomy in 1649. Ward collaborated with Wilkins when shortly after his arrival he fitted out a room as an observatory in the tower above the gate at Wadham. Given that the average age at appointment of Wilkins, Petty, Wallace and Ward was thirty-one it is perhaps possible to attribute some of what followed to the 'activity of youth'. Christopher Wren (1632-1723) went up to Wadham in the summer of 1650 at the beginning of a long association with Oxford which saw him graduate in 1651 and receive his M.A. in 1653. Subsequently he was elected a fellow of All Souls College. Robert Hooke (1635-1703) secured the post of chorister at Christ Church in 1653 or 54. His future employer Robert Boyle (1627-91) moved to Oxford in 1655 or 56. Whilst all these individuals would have been well versed in the writings of Francis Bacon, the influence of the French philosophers René Descartes (1596-1650) and Pierre Gassendi (1592-1655), representing respectively dualist and materialist perspectives,

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[367] John Henry, 'Wilkins, John (1614–1672)', *ODNB*.

[368] Blair Worden, 'Cromwellian Oxford', in Nicholas Tyacke (ed.), *The History of the University of Oxford, Volume IV, Seventeenth-Century Oxford* (Oxford, 1997), p. 738.

was becoming current. Indeed Aubrey credits Robert Hooke as inducting Robert Boyle into Cartesian philosophy. [369] Unified by a common interest in experimentation many of these individuals came together under the aegis of Wilkins to form their experimental philosophy club. We have no evidence as to Sir Anthony's direct involvement in this group, indeed the club's statutes of the 1680s purposefully excluded undergraduates. As Sprat expressed it, 'the *Art* of *Experiments* is not thrust into the hands of Boys'. [370] However, it is possible that during the early stages of the association, before the adoption of a formal constitution in October 1651, rules may have not been quite so prescriptive. Other experimental groups included, according to Gouk:

> the small chemistry group that used Thomas Willis's rooms at Christ Church and Ralph Bathurst's at Trinity during 1648-49, the group that held regular meetings at William Petty's lodgings in 107 High Street (Buckley Hall) between 1649 and 1651, the much larger group that met weekly at John Wilkins's lodgings in Wadham College between 1651 and 1659 and, on a somewhat smaller scale, the group that met sporadically at Robert Boyle's lodgings at 88 High Street (Deep Hall) between about 1657 and 1668. [371]

Obviously there were plenty of other opportunities for social contact that could have advanced the young Sir Anthony's acquaintance with those who Henry Oldenburg, first secretary to the Royal Society, dubbed, 'the *Oxonian* Sparkles' and Gouk termed more prosaically 'scholars and practitioners'. She emphasised the fact that, 'one of the most distinctive features of Oxford "scientific life" […] was the habit of small groups of like-minded individuals to meet informally on a regular basis

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[369] Aubrey, *Brief Lives,* p. 98

[370] Sprat, *History of the Royal Society*, p. 323.

[371] Gouk, 'Performance practice', *British Journal for the History of Science* , p. 265.

[…] to perform experiments and discuss their findings'. [372] She argued the case for the close association between 'cultural and intellectual production' and documented the particular contribution made by music. [373] Gatherings to enjoy performances by musicians such as Thomas Baltzar drew together many of those with an interest in natural philosophy, with which music was seen to be inextricably linked. These social, and, by inference, intellectual exchanges, continued in the taverns and coffee shops of Oxford. The garden at Wadham College was used to demonstrate a number of devices as well as functioning as a social space and one for reflection.

We assume Sir Anthony would have had access to these grounds both as an undergraduate and presumably later, when as Baltzar's patron, links with Wadham were maintained. The first historian of the Royal Society, Thomas Spratt, writing in 1667, summarised the coming together of, as Margery Purver expressed it, 'the man and the moment', in these terms:

> It was therefore, some space after the end of the Civil Wars at *Oxford* in *Dr. Wilkins* his lodgings, in *Wadham College*, which was then the place of Resort for Virtuous, and Learned Men, that the first meetings were made, which laid the foundation of all this that follow'd. The *University* had, at that time, many Members of its own. who had begun in a *free way* of reasoning; and was also frequented by some gentlemen of Philosophical minds. [374]

No doubt Sir Anthony could have been counted amongst this body of 'gentlemen', given an *entrée* into matters scientific on the basis of what Frank calls abundant 'ties

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[372] Ibid., p. 262.

[373] Ibid., p. 286.

[374] Spratt quoted in Margery Purver, *The Royal Society: Concept and Creation* (London, 1967), p.102.

of kinship and college'. [375] The 'Learned Society of *Virtuosi*, that, during the late Usurpation lived obscurely at *Tangley*', referred to by Plot, is presumably a further extension of these ties.

Following the restoration of Charles II in 1660 many of the key participants moved away, some to London and, though far from becoming a backwater, Oxford was perhaps no longer at the leading edge of scientific thought. Wilkins had been moved, at the behest of the fellowship there, to become the Master of Trinity College, Cambridge in 1659 before being dismissed in 1660 and moving to London. At a meeting chaired by Wilkins in the capital in November of that same year, 'something was offered about a design of founding a College for the promoting Physico-Mathematicall, Experimental Learning', according to Purver 'an occasion generally regarded as the birth of the Royal Society'. [376] In 1662 the Society was incorporated with a royal charter, a measure that Purver notes would 'enormously strengthen their position: prestige and legal standing'. [377] In its early years the Society made much use of the premises of Gresham College in Bishopsgate, London, a small private foundation whose curriculum was adapted to 'the understanding and practical outlook of a non-academic audience'. [378] Debate continues as to the precise make up and indeed significance of the Royal Society. As Michael Hunter remarked, 'though it is generally accepted that the Society comprised some sort of elite of Restoration science, the precise relationship that it bore to the contemporary English scientific

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[375] Frank, 'Science at Commonwealth Oxford', *Records of the Royal Society*, p. 209.

[376] Purver, *The Royal Society*, p.110.

[377] Ibid., p. 129.

[378] Ibid., p. 187.

community is far from clear'. [379] What a number of commentators did make clear, from analysis of membership lists, is that the Society was predominantly made up of Royalist, Anglican, university educated gentlemen with, not surprisingly, fewer members drawn from the class of artisans and tradesmen. Lotte Mulligan characterises the membership thus:

> On the whole, then, the royalists were academically well-qualified men of affairs, out in the world, holding Court and government positions, interested in science as well as in history; many of them were trained at the law or in the church, and some were London businessmen. The parliamentarians were proportionately less formally educated. Their graduates were either practical medical men or less worldly academics. [380]

This may perhaps be an over simplification of a complex situation but does seem to contrast with the more ecumenical approach enjoyed by the earlier Oxford experimentalists.

After Wilkins's departure Boyle continued to host meetings of the experimental philosophy club in Oxford but by the early 1660s there remained a few of the personnel with the ability, or the inclination, to continue the pursuit of natural and experimental philosophy. In 1664, the year Sir Anthony was commissioning his garden urns, John Evelyn reported coming across Christopher Wren, Robert Boyle and John Wallis in the Schools Tower at the Bodleian, 'with an inverted tube or telescope observing the discus of the sunn for the passing of Mercury that day before

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[379] Michael Hunter, 'The social basis and changing fortunes of an early scientific institution: an analysis of the membership of the Royal Society, 1660-1685', *Notes and Records, The Royal Society*, vol. 31 (1976), p. 10.

[380] Lotte Mulligan, ' Civil War Politics, Religion and the Royal Society', *Past & Present* , no. 59 (1973), p.107.

the Sunn', evidently still actively engaged in their researches. [381] However, a serious decline had set in. Feingold records that 'less than a quarter of the hundred scientists and virtuosi who participated in the work of the various Oxford groups in the 1640s and 1650s were still in residence when Robert Boyle left for London in 1668.' [382] What today might be termed a 'brain drain' had led to a significant diminution in scientific interest and output that not even the combined enthusiasm of Aubrey, Evelyn and Plot could entirely reverse. It appears that during the decade that Sir Anthony would have had the opportunity to expand his involvement in experimental philosophy, interest in Oxford was waning. The founding of the Ashmolean Museum in 1677 and the construction of its first premises in Broad Street with its basement laboratory, together with the appointment of Plot as its first Keeper and Professor of 'Chymistry' six years later, all came too late for Sir Anthony. [383]

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[381] Evelyn, *Diary*, p. 384.

[382] Feingold, 'Mathematical Sciences and New Philosophies', *The History of the University of Oxford*, p. 441.

[383] Marcos Martinón-Torres, 'Inside Solomon's House: An Archaeological Study of the Old Ashmolean Chymical Laboratory in Oxford,' *Ambix*, vol. 59, no. 1 (2012), p. 25.

Gardens and Science

As noted previously a key component of the House of Salomon in *The New Atlantis* was the garden that not only provided the setting for a variety of science-focussed buildings but also outdoor spaces for further observation and investigation In her account of musical performances in Oxford in the late 1650s, including those by Thomas Baltzar, Gouk stresses that, 'where the making of scientific knowledge is generally understood as arising out of a set of collective practices, the spatial dimensions of this process have come to the fore'. [384]

In examining the locations of colleges, coffee shops, lodging houses, gardens and the routes between them she defined an environment within which 'traditional boundaries can be temporarily overlooked and conventional behaviour suspended in favour of an atmosphere more conducive to the exchange of skills and ideas'. [385] She concludes that, in considering the twin domains of music and natural philosophy, 'activities now judged as innovative in each sphere initially emerged in informal and highly unstable contexts where practitioners from very different backgrounds were unexpectedly brought together in a new way'. [386] This is part of a wider understanding of what David Livingstone calls 'spaces of discursive exchange', whereby, 'ideas are produced in, and shaped by, settings'. [387]

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[384] Gouk, 'Performance practice', *British Journal for the History of Science* , p. 257.

[385]Ibid., p. 257.

[386] Ibid., p. 287.

[387] David Livingstone, *Putting Science in its Place: Geographies of Scientific Knowledge* (Chicago, 2003), p. 7.

A consideration of the gardens at Hanwell, in the light of current archaeological investigations and Plot's account of them with his 'New Atlantis' claim, suggests a variety of ways in which they may have both embodied and promoted certain modes of scientific thinking. Remmert remarks that, 'If designed accordingly, the fashionable gardens of the rich and powerful would demonstrate the sophistication and hence the prestige of their owners; but at the same time, they would be promoting the mathematical sciences among the most influential members of society.' [388] This reflects comments by Hubertus Fisher *et al*., that, 'With their many facets, the mathematical sciences and botany point to the increasingly "scientific" approach that was being adopted in garden art and garden culture in the early modern period.' [389] Michael Lee and Kenneth Helphand go further. In their assessment of Leo Marx's book, *The Machine in the Garden*, they note that 'he posited that modernity came into being when the "machine"-a symbol and artefact of technology-entered the pastoral "garden" of the preindustrial world'. [390] Whether consciously or unconsciously Sir Anthony was certainly embracing this modernity when he introduced features such as his multi-faceted mill into the gardens at Hanwell. Indeed gardens themselves have always been available for many different purposes, inter-leaved and inter-layered in a way which creates both tensions and opportunities. The contrasts between gardens as active spaces full of movement and restful places of tranquility parallels the social versus the contemplative role they have enjoyed. Reid

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[388] Volker Remmert, 'The Art of Garden and Landscape Design and the Mathematical Sciences in the Early Modern Period', in Hubertus Fischer, *et al*., (eds.), *Gardens, Knowledge and the Sciences in the Early Modern Period, Trends in the History of Science* (2016), p. 12.

[389] Ibid., p. 2.

[390] Michael Lee and Kenneth Helphand, (eds.). *Technology and the Garden* (Washington, 2014), p.1.

Barbour and Claire Preston point out something of these tensions as experienced by Evelyn who

> wanted [Sayes Court] and his other gardens, to become the locus of philosophical discussion among the learned gentlemen he styled *paradisi cultores* or 'hortulan saints', but fretted that, by inviting friends to visit and admire it, even if under the rubric of what he called a 'deipnosophisse', a re-enactment of Athenaeus' philosophical supper, he was violating the spirit of Epicurean withdrawal. [391]

In appraising the significance of Sir Anthony's additions to the gardens at Hanwell in the 1660s and early 1670s a general consideration of the role gardens have played in the development of scientific thinking is useful. Shapin explains that 'the performance and the consideration of experimental work in mid to late seventeenth-century England took place in a variety of venues. These sites ranged from the apothecary's and instrument maker's shops, to the coffee house, the royal palace, the rooms of college fellows, and associated collegiate and university structures. But by far the most significant venues were the private residences of gentlemen.' [392] These residences would, of course, have generally had gardens attached that would have been to hand for a variety of purposes. Remmert points to the primacy of the mathematical sciences in the creation of gardens by referring back to Bettini's *hortus mathematicus*, in his *Apiaria universae philosophiae mathematicae* of 1642 that, 'made expert use of the notion that everything to create a garden of amusement and edification - geometry, architecture, perspective, optics, music etc. - could be derived

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[391] Reid Barbour, and Claire Preston, 'Discursive and Speculative writing', in Patrick Cheney and Philip Hardie, (eds.) *The Oxford History of Classical Reception in English Literature*, vol. 2 (Oxford, 2015), p. 477.

[392] Steven Shapin, 'The house of experiment in seventeenth-century England', *Isis*, vol. 79, no. 3 (1988), p. 377.

from the mathematical sciences'. [393] It appears that Sir Anthony's interests were less mathematical and more earthy with his enthusiasm for rocks, minerals and fossils but whatever the case the gardens at Hanwell afforded many opportunities for study and reflection. In general terms there were a number of routes by which gardens could be exploited for advancing scientific thought.

The Garden as the Artisan Test Bed. As fundamentally practical engineered spaces gardens could act as showcases for the activities of a variety of craft workers whose knowledge and skills were often used to inform more structured scientific thinking. So it is that we see engineers such as Salomon de Caus and mathematicians such as Bettini publishing garden designs as exercises in geometry and perspective. [394] Georges Farhat argues for a symbiotic relationship between garden design and layout and the development of new and improved methods of surveying, especially those relying on optical instrumentation describing this as 'a bottom-up contribution of landscape architecture to optical technologies'. [395] As Henry points out, 'The mathematical sciences were always concerned with practical useful knowledge and the practitioners were generally empiricist in their orientation.' [396] By seventeenth-century standards the gardens at Hanwell were not excessively formal although the geometries of knot work could have been explored on the upper terrace next to the house. Careful surveying would have been required for the management of

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[393] Remmert, 'The Art of Garden and Landscape Design', *Gardens, Knowledge and the Sciences*, p. 12.

[394] See de Caus, *La perspectiue: Auec la raison des ombres et miroir* and Bettini, *Aerarii philosophiae mathematicae*.

[395] Georges Farhat, 'Optical Instrumenta[liza]tion and Modernity at Versailles', in Lee and Helphand, *Technology and the Garden*, p.26.

[396] Henry, *The Scientific Revolution*, p. 36.

the water supply to the mill. However, the layout of the octagonal island is so poorly executed that it speaks of ignorance or incompetence rather than expertise, a situation far removed from that in an illustration from 1648 by Benjamin Bramer (1588 -1652) that depicts the setting out of a polygonal pond which then, through a wooden sluice, feeds a water mill (Figure 39). [397] This is clearly a situation that echoes some elements of the arrangements at Hanwell. The installation of features such as fountains and related pumping mechanisms enabled savants such as Bacon and later Evelyn to document and indeed celebrate the practical skills of the artisans they employed. James Bennett emphasises the intimate connection between the scholar

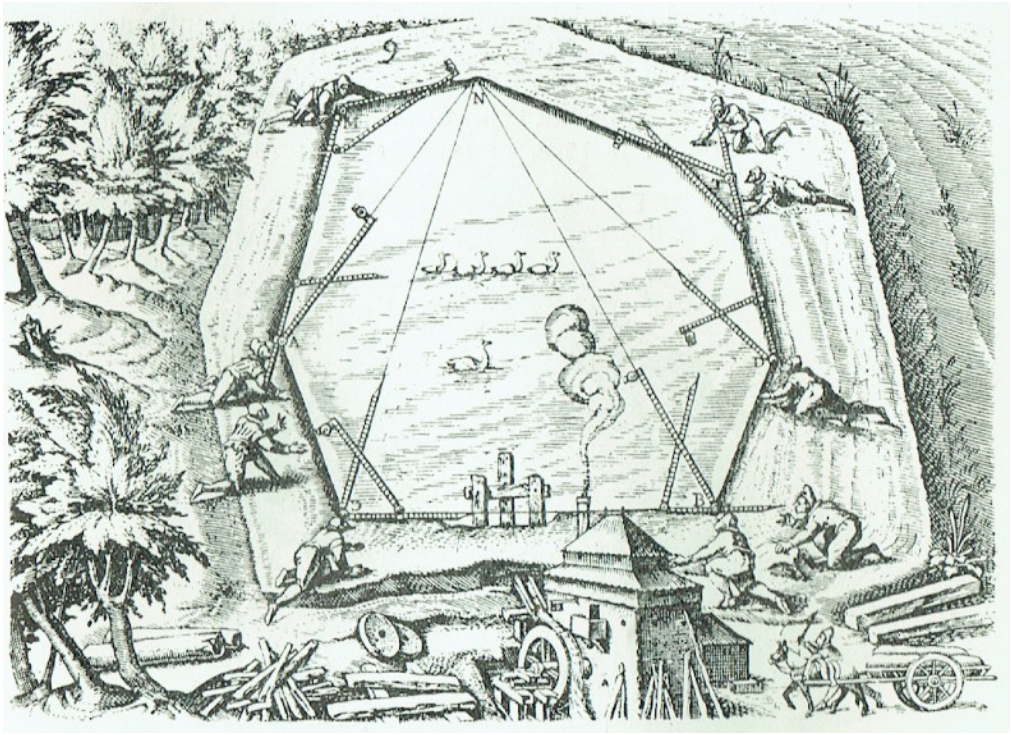

Figure 39. Surveyors at work from Braemer, 1648.

[397] Bramer, B., *Bericht zu M. Jobsten Burgi sel. geometrischen Triangular Instruments. Mit schönen Kupfferstücken hierzu geschnitten* (Cassel, 1648). Illustration copied in Gunther, *Early Science in Oxford*, vol. 1, p. 349.

and the craftsman as sometimes exhibited within gardens. [398] In commenting on the 'contribution of the mechanical arts to the rise of empirical and experimental methodologies within the new sciences of the seventeenth century' Pamela Long also notes the primacy of the practical. [399] In reflecting on the Italian experience Katherine Rinne writes, 'Hydraulics, the scientific study of the dynamic and static behaviours of liquids, including water, was an area of intense theoretical and practical concern between the fifteenth and eighteenth centuries.' [400] She too underlines the intermingling of craft skills with more conceptual endeavours, listing practical and theoretical studies by Geralamo Cardarmo (1501-76), Jacques Besson (1540-73) and Benedetto Castelli (1578-1643). In the case of Hanwell both the plumbing at the 'House of Diversion' and the grinding, cutting and boring mill would have been venues where Sir Anthony could have observed, and to a certain extent taken ownership of, a range of skills that demonstrated mastery of a variety of natural processes and in particular the application of De Caus's '*forces mouvantes*'.

The Garden as Laboratory. An important element in Bacon's *The New Atlantis* was, as Arthur MacGregor put it, 'laboratories for every kind of research as well as orchards, gardens, parks and lakes where experiments in every field of nature could be carried out'. [401] Piotr Jaroszynski highlights the artificiality of it all: 'The gardeners were not concerned with beauty. They were concerned with which soils best suit

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[398] James Bennett, 'The Mechanics' Philosophy and the Mechanical Philosophy', *History of Science*, vol. 24, no.1 (1986), pp. 1-28.

[399] Pamela Long, *Openness, Secrecy, Authorship Technical Arts and the Culture of Knowledge from Antiquity to the Renaissance* (Baltimore, 2001), p. 2.

[400] Katherine Rinne, 'Garden Hydraulics in Pre-Sistine Rome', in Lee and Helphand, *Technology and the Garden*, p. 111.

[401] MacGregor, 'Magazin of all manner of invention', *Journal of the History of Collections*, p. 207.

which plants. They artificially accelerated growth, artificially obtained fruit of greater sweetness in a variety of colours, tastes, and shapes, and created new kinds of plants.' [402] There is nothing in Plot, apart from the appellation 'virtuoso', to suggest that Sir Anthony was actively involved in such experimentation. Clearly opportunities existed. Writing of St. James's Park in London, Mark McDayter records that, 'After the Restoration, a 40-foot-long telescope was mounted in the middle of the park which, with its plants and exotic animals was a kind of outdoor laboratory for the horticulturalists, botanists zoologists and astronomers.' [403] Jane Garnett and Cliff Davies remind us that experiments such as those on human flight were carried out in the Warden's garden at Wadham. [404] Of course physical evidence of such activities is hard to come by but it is not impossible that at some point excavated material may emerge at Hanwell akin to the remains of crucibles and retorts dug up in the back garden of the original Ashmolean Museum. [405]

The Garden as Collection. The concept of a botanic garden as an ordered collection of plants, or what Livingstone terms, 'a living encyclopaedia' is an important one. [406] It has its origins in the middle ages when, as Lucia Tomasi notes, 'the *Hortus Medius*, where plants were cultivated above all for their pharmacological

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[402] Piotr Jaroszyński, ' Science and Utopia: From the House of Solomon to the Royal Society', in *Science in Culture,* vol. 185 (2007), p. 150.

[403] Mark McDayter, 'Poetic gardens and political myths: The renewal of St James's Park in the restoration', *The Journal of Garden History*, vol. 15, no. 3 (1995), p. 136.

[404] Jane Garnett and Cliff Davies, *The Invention of Modern Science* (Oxford, 2014), p. 19.

[405] Martinón-Torres, 'Solomon's House' , *Ambix*.

[406] Livingstone, *Putting Science in its Place,* p. 49.

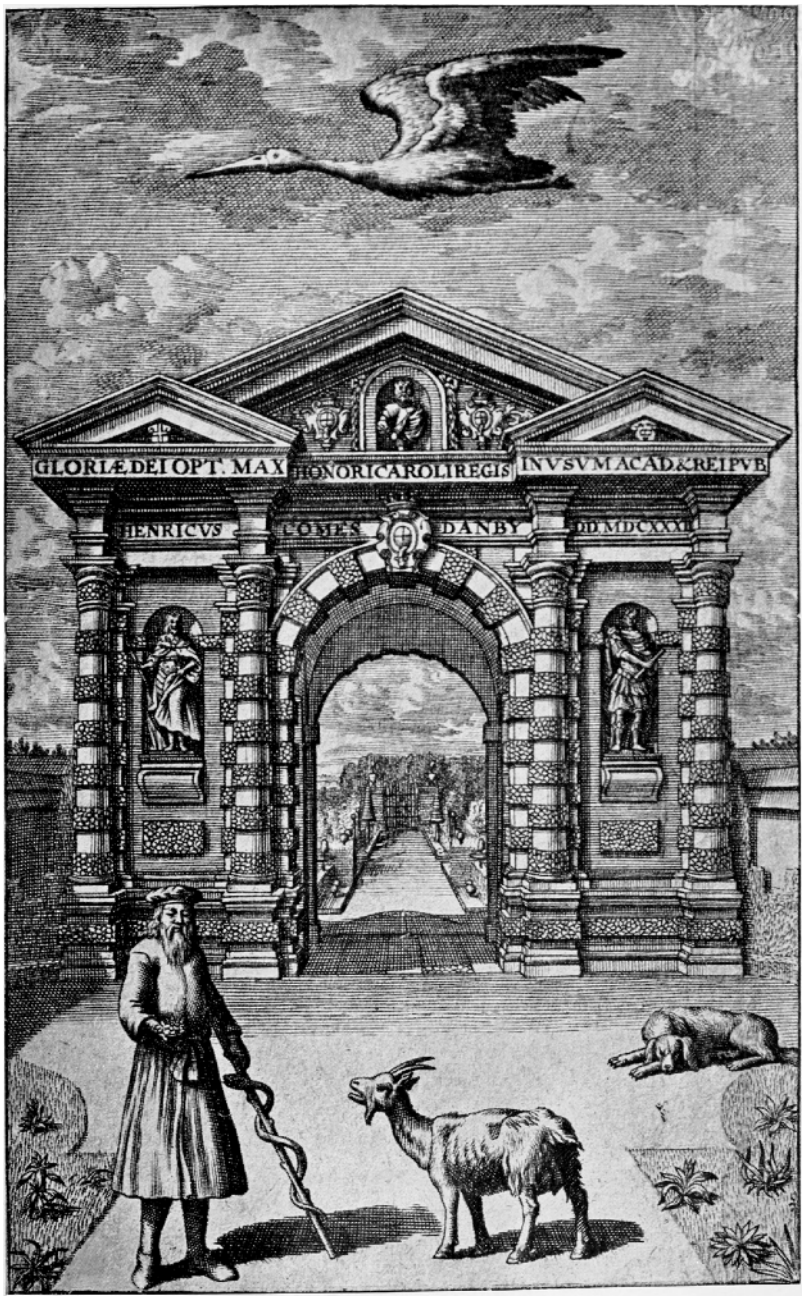

Figure 40. Stone's Great Gate of the Physic Garden, frontispiece of Abel Evan, *Autumnus* (Oxford, 1713)

properties, evolved into the *Hortus Botanicus*, whose scope was the disinterested pursuit of knowledge'. [407] This transition was first expressed in the botanical gardens founded in Italy at Pisa (1543) and Padua (1545). The Botanic Garden at Oxford

[407] Lucia Tomasi, ' The origins, function and role of the botanical garden in sixteenth- and seventeenth-century Italy', *Studies in the History of Gardens & Designed Landscapes*, vol. 25, no. 2 (2005), p. 104.

originated as the Oxford Physic Garden in 1621 at the behest of Henry Danvers, Earl of Danby (Figure 40). Its status as a place of learning was spelt out from the outset as a facility 'whereby learning, especially the faculty of medicine might be improved'. [408] A 'conservatory for evergreenes' accommodated, at the time of a survey in 1648, a variety of tender plants including orange, myrtle and pomegranate, all heated when a 'grated iron wagon filled with burning charcoals was hauled around the pathways'. [409] Sir Anthony would no doubt have had access to the physic garden but despite Plot's account of the distinctive variety of small-leaved elm at Hanwell and the current presence of the rare herb, Saracen's Woundwort, there is no evidence that Sir Anthony had any specific or unusual interest in plants. As well as accommodating collections of plants subject to study, many botanic gardens, for example Leiden, Montpellier and Pisa, as well as the occasional aristocratic garden, were also home to 'cabinets of curiosities'. Hunt reminds us that 'in sixteenth-century English the word "cabinet" had a sense of summerhouse or bower in a garden and it continued to be so used at least until Miller's Gardeners dictionary of 1712'. [410] Such collections of what today we might view as the weird and wonderful often facilitated what Henry describes as 'Bacon's brand of supposedly "theory-free" fact gathering'. [411] Bacon himself elevates the business of collecting to the creation of a microcosm, being, 'a model of the universal nature made private'. [412] There is nothing to say that Sir Anthony was

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[408] Batey, *Oxford Gardens,* p. 31.

[409] Jan Woudstra, 'Much better contrived and built than any other in England' Stoves and other structures for the cultivation of exotic plants Hampton Court Palace 1689 -1702', in Lee and Helphand, *Technology and the Garden,* p. 84.

[410] John Dixon Hunt, 'Curiosities to adorn Cabinets and Gardens', in Oliver Impey and Arthur MacGregor, (eds.), *The Origin of Museums* (Oxford, 2001), p. 267.

[411] Henry, *The Scientific Revolution*, p. 40.

[412] Attributed to Bacon, *Gesta Grayorum*.

aware of his great-great uncle Walter's well known collection nor whether Sir Anthony had his select items on show in a dedicated space either inside the house or in a structure located in the garden, possibly within the 'House of Diversion' itself. What is clear is that he did have a special interest in rocks and fossils and particularly in stones that could be cut in his mill and polished to create attractive handles for his cutlery. An inventory of Hanwell, drawn up in 1658 in connection with a valuation associated with the family's debt to Milton, demonstrates that there was no shortage of rooms in which a collection could be housed but nothing in the list of contents indicates anything that reflects on Sir Anthony's collecting interests or status as a virtuoso. [413]

The Garden as Social Space. There was little place for the solitary researcher in the world of natural philosophy in the seventeenth century, rather there was a clear understanding of the importance of social contact and collaboration. A typical expression of this can be read in a letter from John Dury (1596-1680), a member of Hartlib's circle of learned correspondents, that listed the requirements for a proposed house of investigation and experiment to be set up at Vauxhall. This suggested that it be 'a place of resort where unto Artists and Ingeneers from abroad and at home may repair to meet with one another to confer together and improve in many ways their abilities and hold forth profitable Inventions for the use of the Comon-wealth'. [414] This was another Utopian scheme that came to nothing although the gardens were eventually opened to the public in 1661 for purposes far from scientific. [415] Boyle's

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[413] French, *Milton in chancery*, p. 349.

[414] Quoted in MacGregor, 'Magazin of all manner of invention', *Journal of the History of Collections*, p. 208.

[415] Penelope Corfield, *Vauxhall, Sex and Entertainment* (London, 2012), p. 7.

conversation with Carneades and Eleutherius in the *Sceptical Chymist* of 1677 is set in a garden below 'one of the arbours to enjoy under its cool shades a delightful protection from the yet troublesome heat of the sun', a clear contrast with their 'Dark and Smokie Laboratories'. [416] This is not only symbolic of what Claire Preston calls the 'property and private wealth' of these gentlemen practitioners but also must reflect on the day to day reality of social interactions. [417] Given that a community of like-minded individuals is a key requisite for a 'New Atlantis', the expectation might be that Sir Anthony maintained a household where such groupings came together regularly. Again one calls to mind the 'Society of Learned *Virtuosi*' at his property at Tangley. Certainly the opportunities were there, thinking of the collegiate appearance and layout of the Castle itself, the broad terraced walkways along the north side of the upper pool and the venue termed the 'House of Diversion' with its associated debris of clay pipes and broken wine bottles conjuring up these social spaces. However, apart from the late 1650s when we have Allestree and Baltzar in temporary residence, there are no records of anyone, either resident or local or transient making use of the gardens for scientific or philosophical conversations.

The Garden as Thinking Space. It seems absurdly reductionist to suggest that the straight paths and enclosed spaces of the formal garden promote logical thinking whilst the meandering paths of a woodland garden inspire all that is poetic, yet such assumptions colour both interpretations of historic gardens and support a range of modern texts, both popular and academic, on engineering spaces to promote

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[416] Robert Boyle, *The Sceptical Chymist* (Oxford, 1677), p. 3.

[417] Claire Preston, *The poetics of scientific investigation in seventeenth-century England* (Oxford, 2015), p. 127.

creativity. [418] There is no doubt that thinkers of all persuasions have sought out gardens as places where a measure of solitude coupled with gentle stimulation can be used in support of serious thought as well as idle speculation. Undoubtedly the most famous instance of a garden based scientific discovery is the tale associated with Newton's apple. Despite this event frequently being relegated to the status of fable an account by William Stukeley, Newton's biographer, seems quite unequivocal:

> On 15 April 1726 I paid a visit to Sir Isaac at his lodgings in Orbels buildings in Kensington, dined with him and spent the whole day with him alone. . . . After dinner, the weather being warm, we went into the garden and drank tea, under the shade of some apple trees, only he and myself. Amidst other discourse, he told me, he was just in the same situation, as when formerly, the notion of gravitation came into his mind. It was occasion'd by the fall of an apple, as he sat in a contemplative mood. [419]

An earlier instance was documented by Julian Jaynes who described Descartes's reaction to the automata housed in the grottoes below the terraces at St. Germain-en-Laye:

> Descartes tells us himself how he made them move without knowing it; how, on entering, he trod on hidden plates that, for example, when he approached a bathing Diana, caused her to hide her bronze allurements in bronze rose bushes, and when he tried to follow her, caused a stern Neptune to clank and hiss forward to intercept him, creaking his dripping trident puritanically over the delighted philosopher's head.
> These images, […] with their paradigms of behavioural control, perhaps stayed at the very depth of Descartes' thinking. [420]

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[418] See for example Udo-Ernst Hamer, 'Spaces for Creativity and Innovation in Two Established Organisations', *Creativity and Innovation Management*, vol. 14, no. 3 (2005), pp. 288-98 or Martin Meinel, *et al*., 'Designing Creativity-Enhancing Workspaces: A Critical Look at Empirical Evidence', *Journal of Technology and Innovation Management*, (2017), pp. 1-12.

[419] William Stukeley quoted in, *Memoirs of Sir Isaac Newton's life,* ed. A. Hastings White (London, 1936). pp. 19-21.

[420] Julian Jaynes, ' The Problem of Animate Motion in the Seventeenth Century', *Journal of the History of Ideas*, vol. 31, no. 2 (1970), p. 224.

A particular example of observation and experience informing a scientific conclusion is in Marjorie O'Rourke Boyle's contention that Harvey's discovery of the circulation of the blood was part inspired by the examination of sluices and other garden water features in Italy and elsewhere. [421] In terms of a more general structural and indeed symbolic approach to creating a thinking space the gardens surrounding Tycho Brahe's observatory at Uraniborg from late in the sixteenth century were severely symmetrical suggesting to Vivienne Parrott a focus on 'fundamental aspects of Pythagorean mysticism which were common property during the sixteenth century' (Figure 41). [422]

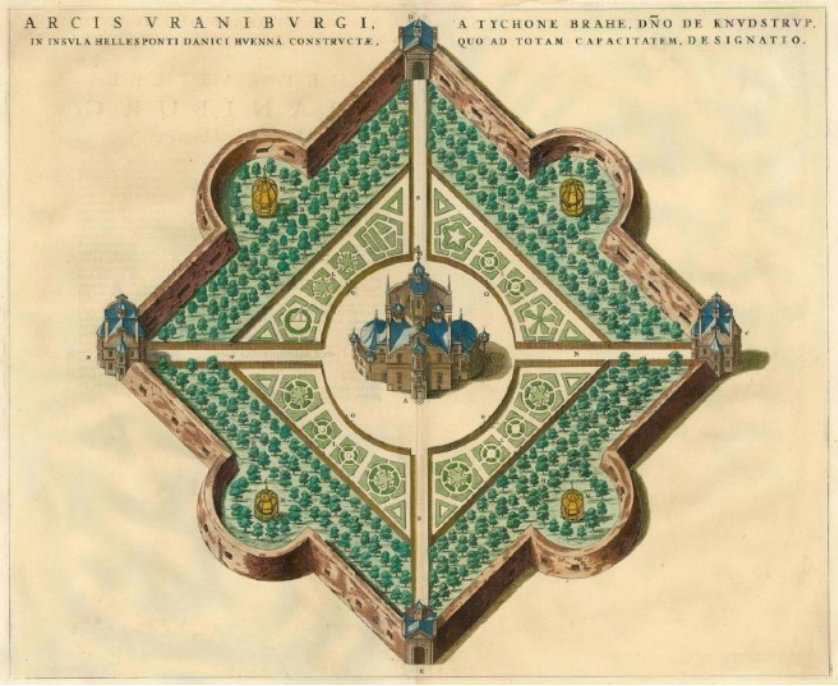

Figure 41. Gardens at Uraniborg from John Blaeu's *Atlas Major* of 1665,

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[421] Marjorie O'Rourke Boyle, ' Harvey in the sluice: from hydraulic engineering to human physiology', *History and Technology*, vol. 24, no.1 (2008), pp. 1-22.

[422] Vivienne Parrott, 'Celestial Expression or Worldly magic? the Invisibly Integrated Design of Utaniborg: a Look at some Philosophical Aspects of the Ground Plan of Tycho Brahe's House and Garden, 1576-97', *Garden History,* vol. 38, no. 1 (2010), p. 68.

CHAPTER 5, AT HANWELL HOUSE, THE COPE FAMILY

Sir Anthony Cope, the 4th Baronet

After the deaths of Sir Anthony, the 1st Baronet, and his brother Sir Walter, both in 1614 and both in considerable debt, the family must have struggled to rebuild its finances. This task went to Sir Anthony's heir William (1577?-1637) and his wife Elizabeth Chaworth whom he had married in 1602. They had been living on the other side of the Cherwell in the small property at Hardwick. M.P. for Banbury for parliaments called from 1604 onwards he was an active participant frequently taking opportunities to pursue his family's interest. Despite his inherited debts William had also borrowed heavily to acquire further local properties. His lack of financial liquidity led into an almost continual round of litigation, a not uncommon state of affairs for many gentry of the time. In an attempt to raise some income William became part of a syndicate selling export licences for wool and invested in further schemes relating to pipe staves and sea coal. None of these investments had made much of a contribution to clearing his debts and after the close of parliament in 1624 he was arrested. According to the *HOP* a drama ensued:

> Just over a month after the prorogation Cope was arrested at the suit of Lady Coppyn for a debt of £3,000 'and for seeking to escape from the sheriff who had used him kindly, upon his word and promise to be true prisoner', and was imprisoned in Oxford Castle. After transfer to the Fleet he was temporarily released in August 1624 to entertain King James at Hanwell for three days. He was removed from the commission of the peace, but was still at liberty 'by *habeas corpus*' when Charles I summoned his first Parliament in 1625. [423]

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[423] Alan Davidson and Rosemary Sgroi, 'Cope, Sir William (1577 -1637)', *HOP.*

Accommodating the King could hardly have eased his financial difficulties. In May 1626 William was attempting, unsuccessfully, to approach the East India Company 'for their dividends, and had returned without money or good words'. [424] Further attempts were made to arrest him and in 1629 his debts were finally settled by surrendering his estate to a panel of trustees headed by viscount Saye and Sele. This sense of obligation to Lord Saye may have led him to oppose Ship Money, despite having played host to King Charles and the Queen in August of 1636, although equally it may have been a matter of principle. One wonders if the subject of the Enstone Marvels, which the royal couple had visited that same month, figured in their conversation at all and if the ears of the four year old Anthony heard anything of the wonders to be experienced there.

William died in 1637 acknowledging the family's long term support of the puritan clerics, John Dod and Robert Harris, by leaving them £20 each in his will. [425] He was succeeded by his eldest son, John, who in 1631 had married Lady Elizabeth Fane, a daughter of the earl of Westmorland. She gave birth to Anthony in 1632 and John in 1634. In 1638 Sir John took out a loan for £150 from the poet John Milton (1608-74). The fact that Sir John died shortly afterwards led to a series of court actions that prompted Joseph French to describe the Copes as 'one of the most litigious families in England'. [426] The death of their father in 1638 must have

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[424] Court Minutes of the East India Company (May 1626) pp. 192-205, http://www.british-history.ac.uk/cal-state-papers/colonial/east-indies-china-japan/vol6/pp192-205, accessed 17 January 2021.

[425] TNA, , PROB 11/175/196, Will of Sir William Cope of Hanwell, Oxfordshire, 26 October 1637.

[426] Joseph French, *Milton in chancery; new chapters in the lives of the poet and his father* (New York, 1939), p. 124.

Figure 42. Portrait of the young Anthony and John Cope, probably painted around 1638. Bruern Abbey. Permission applied for.

been around the time that a portrait was painted of the two boys (Figure 42). It is probable that Lady Elizabeth initially had some oversight of the estate during the minority of her sons. In an incident after the start of the Civil War it was reported that on 8 August 1642 some Royalist hotheads attacked,

> the grave and reverend Mr. Harris (of Hanwell neer Banbury) […] they outed him and his family, took possession of his house on Sunday night, and made him wander for his lodging, and took possession of the Lady Copes house there, and of all the armes, and ammunition they could meet with in the town. [427]

Whilst, no doubt, coloured by the propaganda of the time this must have been an alarming incident for the family including the ten year old Anthony and perhaps provided the impetus for his mother to remarry, in 1643, Colonel William Cope, a

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[427] Anonymous, *Proceedings at Banbury since the Ordnance went down for the Lord Brooks to fortify Warwick Castle* (1642), quoted in Beesley, *History of Banbury*, p. 301.

cousin of her former husband. This was followed by a move to Bruern which would have allowed her to get away from the conflict in the area immediately around Banbury, where the castle was periodically besieged. In 1654 Colonel Cope took on the manor of Icomb, formerly in Worcestershire now in Gloucestershire. [428] The somewhat peripatetic nature of family life at the time is demonstrated by an extraordinary note in a commonplace book discovered in Herefordshire in 1874 and evidently written by Lady Elizabeth at some point post-1653, possibly after the move to Icomb (See Appendix 3). Apart from being a dreadful testimony to the rate of child mortality, possibly even higher amongst the well to do because of their use of wet nurses, and offering useful insights into the family connections enjoyed by Lady Elizabeth, it also provides information about the family's movements before, during and after the Civil War listing visits to Abthorpe, Brewerne and Tangley (See Appendix 4). Abthorpe was the home of her father Francis, Earl of Westmoreland and so it seems a suitable setting for the birth of her first son. The Cope family seat at Hanwell was equally appropriate as a family residence in the early 1630s but she was at Bruern for the birth of her subsequent children from 1636 until 1645 although she must have returned to Hanwell, perhaps upon the death of her first husband, where she may well have stayed until her marriage took her back to Bruern in 1643.

During his formative years Anthony would have travelled between a variety of family properties. He went up to Oxford probably late in 1648, aged 15, to attend Oriel College. The college may have seemed to him to be the epitome of modernity

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[428] *VCH Worcestershire*, vol. 3 (1913), pp. 412-5.

as it was effectively rebuilt between 1620 and 1642. [429] His great-great-great-grandfather, Anthony, may have started a family connection with the college and Blair Worden notes that 'only one other house preserved so distinctly royalist a character: Oriel […] where the proportion of sons of royalists was even higher than at Queen's. The royalist provosts Richard [John] Sanders [provost 1644-53] and Robert Saye [1653-91] resisted all visitatorial efforts to puritanize their house with obstinacy, even with insolence.' [430] Given the family's on-going connection with the puritan divines, John Dod and Robert Harris, this could have put the young Sir Anthony in a difficult position, especially in view of the febrile atmosphere that must have existed in Oxford around the time of King Charles's execution, in January 1649. A further family connection in the city at the time, although one which may not have sat well with the young Sir Anthony, was the presence of Lady Isabella Thynne (b. 1623), grand daughter of Sir Walter Cope, brother to Sir Anthony's great-grandfather. Aubrey captures and possibly embellishes her colourful presence in his account of Ralph Kettle, president of Trinity College:

> Our grove was the Daphne for the Ladies and their Gallants to walke in, and many times my lady Isabella Thynne would make her Entreys with a Theorbo or lute played before her. I have heard her play on it in the Grove myselfe, which she did rarely; for which Mr. Edmund Waller hath in his Poems for ever made her famous. One may say of her as Tacitus sayd of Agrippina, *Cuncta alia illi adfuere, praeter animum honestum*. She was most beautifull, most humble, charitable, etc. but she could not subdue one thing. I remember one time this lady and fine Mrs. Fenshawe * (her great and intimate friend, who lay at our college), would have a frolick to make a visitt to the President. The old Dr. quickly percieved that they came to abuse him; he addresses his discourse to Mrs. Fenshawe, saying, 'Madam, your husband and father I bred up here, and I knew your grandfather; I know you

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[429] Royal Commission on Historical Monuments (England), *An Inventory of the Historical Monuments in the City of Oxford* (London, 1939), p. 92.

[430] Worden, 'Cromwellian Oxford', p.767.

> to be a gentlewoman, I will not say you are a whore; but gett you gonne for a very woman.'
> *She was wont, and my lady Thynne, to come to our Chapell, mornings, halfe dressd, like angells. [431]

Antonia Fraser adds, 'She became the mistress of the Royalist leader, the Marquess of Ormonde […] Later she became involved in Royalist plotting, her father the Earl of Holland having been executed for his part in the second Civil War. Lady Isabella left England in 1650, finding refuge with Ormonde's sensible and charitable wife Elizabeth Desmond.' [432] Her subsequent efforts on behalf of the exiled Prince Charles may well have led her into a circle of informants and agents that was to include Richard Allestree. [433]

Dr. Saye was to be recorded in Sir Anthony's will of 1674 as his former tutor, receiving a bequest of £50, 'in remembrance of my love'. [434] The college buttery book for 1648-49 shows him to have been by far the biggest spender amongst the undergraduates. As the only gentleman at Oriel he presumably had a certain level of consumption to maintain though his pattern of spending suggests long periods of absence from the university. For example he seems to have been away for three weeks from St. Thomas's Day to Lady Day, in the spring of 1649, and was absent also for much of the early summer in 1650, possibly back at Tangley preparing to greet his new half sister Rachell. [435] There are no entries for him from Michaelmas term 1651

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[431] Aubrey, *Brief Lives,* p. 181

[432] Antonia Fraser, *The Weaker Vessel, Woman's Lot in Seventeenth-Century England* (London, 1984), p. 35.

[433] See below, pp. 2233-8 for life of Allestree.

[434] TNA, PROB 11/350/249 (Will, Sir Anthony Cope).

[435] Oriel College Archive, TF 1 E1/6, Buttery Book, 1648-49.

at which point he presumably had entered into his majority and in September 1651 he witnessed the baptism of his half brother, William, at Bruern. His brother John went up to Queen's College in the same year. No specific information about Sir Anthony's studies as part off his undergraduate BA course is available although he would have received a sound grounding in mathematics, possibly with the support of a private tutor, as well as having the option of attending lectures from a range of specialists some of them embracing current thinking on natural philosophy. It is possible that he also studied astronomy, which would have necessitated the purchase of a range of instruments. [436] In describing the curriculum at Christ Church from the 1660s E.G.W. Bill notes that, 'the degree of BA embraced in theory if not always in practice, logic, mathematics, natural and moral philosophy, the elements of religion and prescribed classical authors.' [437] Despite slightly irregular attendance he would still have been subject to a system which, in Feingold's words, 'not only trained more students who made science their vocation, but provided considerable proportion of the educated public with at least a modicum of scientific knowledge, thus contributing to a relatively sizeable community of "virtuosi" who made possible the flowering of English science'. [438] Whilst at Oxford Anthony is very likely to have made contact with John Wilkins, Warden at Wadham. Wilkins was another new arrival at Oxford. His grandfather on his mother's side was John Dod, who as a minister had been supported by previous generations of Copes. [439] Given the family connection, it is

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[436] Mordechai Feingold, 'The Mathematical Sciences and New Philosophies', in Nicholas Tyacke, (ed.). *The History of the University of Oxford, Volume IV Seventeenth-Century Oxford* (Oxford, 1997), p. 374.

[437] E.G.W. Bill, *Education at Christ Church, Oxford 1660-1800* (Oxford, 1988), p. 245.

[438] Feingold, 'The Mathematical Sciences', p. 426.

[439] Samual Clarke, *The Lives of two and Twenty English Divines* (London, 1660), p. 200.

reasonable to assume that Sir Anthony experienced the 'garden of curiosities' that Wilkins had assembled at Wadham and that this inspired him together with other links to the Oxford establishment to develop his own role as virtuoso. [440] This familiarity with Wadham College was maintained at least into the late 1650s when one of his house guests, the musician Thomas Baltzar gave concerts there. [441]

Sir Anthony married Mary Dutton, his cousin, daughter of the 3rd Baron Gerard of Gerard's Bromley, Staffordshire and Mary Fane, sister to his mother Elizabeth. The ceremony probably took place in 1651. His mother had also listed the births and unfortunate deaths of Anthony's children:

> My sonne Ant' Copes eldest sonne was borne at Aston in Yorkshire upon Wednesday ye 16 March 1652 about 4 a clock in ye morning, he was baptised John and dyed ye monday seuenight after.
>
> his second son was borne at Aston on Thursday ye bout a fortnight after.
> his 3d sonne was borne at Tangley on Wedensday ye 13th of Decem. 1654 betweene 7 & 8 in ye morning, he was baptised Henry on Satterday ye 16. ye witnesses were Lord Vicount Faulkland, Sr Edmond Brag & my self.
> [Marginal Note] He dyed ye 8 of June 1662
>
> his first daughter was borne at Tangly ye last of April 1656 & was baptised Mary, ye witnesses were ye Lord Gerard, ye Countesse of Westmoreland & ye Lady Kilmurrey. [442]

The presence of Sir Anthony and his pregnant wife Mary at Aston Hall in Yorkshire is partially explained by the fact that his mother's sister, Catherine, had married Conyers Darcy, 2nd Earl of Holderness in 1645. Presumably family links were sufficiently

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[440] John Evelyn, *Diary: Introduction and De Vita Propria*, ed. E. S. De Beer, vol. 1 (Oxford, 1955) pp. 104-5.

[441] See below, pp. 229-32 for an account of the concerts.

[442] *Miscellanea Genealogica et Heraldica*, p. 241.

strong to ensure that Sir Anthony was made welcome at one of the family seats although why they are so far from their Oxfordshire holdings remains a puzzle. By 1654 they were back at Tangley where their third son and first daughter, who were both to survive infancy but die at the ages of seven and fifteen respectively, were born. The family had clearly adopted Tangley as their main residence as legal documents from 1655 name him as Sir Anthony Cope of Tangley. [443] In 1658 as part of continuing litigation arising from the unpaid loan from Milton twenty years earlier it was recorded that Sir Anthony 'has hired the house at Tangley to live in with his family and pays £30 a year rent for it'. [444] As noted previously, one of the most remarkable and tantalising references to Tangley comes in Plot's *Natural History* where, in giving an account of stones he termed *Brontiae*, he identified, 'a Learned Society of *Virtuosi*, that, During the late Usurpation lived obscurely at *Tangley*'. [445] A curious incident is recorded for 22 June 1658:

> Petition of Sir William Walter, Bart., of Sarsden, co. Oxon, to the Protector. Being bound with sureties to keep the peace, according to the general order for compounders, I was summoned by Major Crook to Oxford, and made prisoner under the marshal's custody. I went on Sunday, 6 June, to Carfax church, and was placed where the mayor and aldermen sit. After service, Sir Ant. Cope, Bart., of Tangley, came up and said to me— 'Sir Wm. Walter, if I were not a good Christian, I would cudgel you; you are an unworthy fellow.' I made no reply, but appeal to you for relief. [446]

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[443] For example, Hants. CRO 43M48/363 *Unexecuted release of a close of pasture (60 acres) called Misters [Minsters] ground, Drayton, Oxon* and 43M48/367 *Consideration of £500 paid by Thomas Lodge*.

[444] French, *Milton in chancery*, p. 129.

[445] Plot, *Natural History*, p. 92.

[446] Petition of Sir William Walter, Bart., of Sarsden, co. Oxon, to the Protector (June 1658), http://www.british-history.ac.uk/cal-state-papers/domestic/interregnum/1658-9/pp69-80, accessed 11 January 2021.

Walter was a disaffected cavalier who in 1646 had paid a fine of £1,430 for 'deserting his Habitation, and assisting the Forces raised against the Parliament'. [447] In 1655, following a failed Royalist uprising led by John Penruddock, he had narrowly escaped arrest by Captain Unton Croke and Henry Smith when it was decided to purge Oxfordshire of a number of those who were considered undesirable. Writing to the Protector they report:

> In pursuance of your instructions, wee have seized the persons of the lord Lovelace' sir John Burlacie, sir Thomas Pope, John Osbaldiston, esq; who were included in the list sent us from your highnesse. Sir William Walter and col. Sands are, as wee heare, at London, and soe out of our reache. Wee have alsoe secured the lord of Falkland, George Nappier, Thomas Whorwood, Esq; who are dangerous and disaffected persons. [448]

It is unclear what Sir Anthony's grudge was about but it is plausible that the dispute could have been linked to issues arising out of the operation of the Royalist underground at the time.

One wonders if the arrival of their daughter Mary marked the final attempt at a large family. As both parents were still young there may have been some medical reason for the lack of further births. Perhaps from 1656 onwards Sir Anthony's thoughts turned back to Hanwell and its grounds and the consolations of natural philosophy. Certainly he had at least two remarkable individuals resident at Hanwell towards the end of the 1650s. [449] One of them, Richard Allestree, was a Royalist agent

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[447] Sir William Walter, fine, (18 August 1646), http://www.british-history.ac.uk/commons-jrnl/vol4/pp645-648, accessed 11 January 2021.

[448] Unton Croke, letter to the Protector, (1655), http://www.british-history.ac.uk/thurloe-papers/vol3/pp514-528, accessed 11 January 2021.

[449] See below, pp. 223-33 for Sir Anthony's guests.

so it is not surprising that Sir Anthony was signatory to a *Declaration of the County of Oxon* calling for the restitution of members of parliament who were expelled in 1648. Indeed he was part of the delegation that presented it to General Monck in London on 15 February, as was his step-father William Cope. [450] During the course of Booth's rising, late in 1659, Sir Anthony further pledged his support for a 'free parliament'. Blair Worden describes his involvement in these terms:

> The presenters of Oxfordshire's declaration, too, included names that the exiled court would have been glad to see. Lord Falkland, son of a famous royalist statesman and himself in close contact with the crown and regarded as a friend by it, headed the deputation to Monck. He and another of the presenters, Sir Anthony Cope, had worked together to promote the rising of 1659 (after which Falkland was imprisoned, though he was alleged to have 'betrayed' the conspiracy). [451]

Soon afterwards Sir Anthony was elected the member for Banbury to the Convention Parliament which met in April that year and voted for the restoration of the monarchy. He was what M.W. Helms, Leonard Naylor and Geoffrey Jagger described as a 'moderately active member of the Cavalier Parliament' that was elected in 1661. [452] There is little evidence in his parliamentary career of the kind of interests that earned him the epithet of virtuoso. Sir Anthony was a Captain of Foot in the regiment of Lord Falkland between 1661 and 62 and may have served in Dunkirk along with his younger brother John. His later membership of parliament was not without incident and in August of 1671 the house was informed of another apparently unprovoked assault:

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[450] Beesley, *History of Banbury* , p. 474.

[451] Blair Worden, 'The Demand for a Free Parliament', in George Southcombe and Grant Tapsell (Eds.), *Revolutionary England c. 1630-c. 1660* (London, 2020) p. 189.

[452] M. W. Helms, Leonard Naylor and Geoffrey Jagger, 'Sir Anthony Cope (1632-75)', *HOP.*

> that Sir Anthony Cope, a Member of this House, was Yesterday in the Evening, stopt and assaulted by one Landisdall; who expressed contemptuous Words, in Breach of the Privilege of this House; viz. That, because he was a Member of this House, he would send him to the Compter.
> Ordered, That Landisdall the Beadle of Billingsgate Ward, living in the Parish of St. Mary Hill, in the City of London, be sent for in Custody of the Serjeant at Arms attending this House, for his Breach of Privilege of this House, in affronting Sir Anthony Cope, a Member of this House; and for contemptuous Words against this House. [453]

One of his last public acts in London in 1673, on the anniversary of the Gunpowder Plot, was to lead a procession to burn, in effigy, the Pope, a major event presented in the context of anti-Catholic sentiment at the time. In the aftermath of the Test Act of 1673, the outing of the Duke of York as a Catholic, and his recent remarriage to an Italian Catholic, Mary of Modena, Sir Anthony chose to align himself with what was to become the Whig faction that supported constitutional monarchy and parliament. The family's ownership of property associated with the Wool Quay in London involved them in the rebuilding of the Customs House after the Great Fire in 1666. Walter Godfrey records that:

> the site of the new building was considerably larger than that occupied by its predecessor. Additional land was taken for the extension from Sir Anthony Cope, but it is to be noted that the building did not, as did its successor, extend northwards to Thames Street. A considerable strip of land was left on the north side, which was later occupied by two rebuilt taverns and a large warehouse owned by Sir Anthony. [454]

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[453] Assault on Sir Anthony Cope, (18 April 1671), http://www.british-history.ac.uk/commons-jrnl/vol9/pp236-237, accessed 11 January 2021.

[454] G. H. Gater and Walter Godfrey, (eds.), 'Custom House Quay and the Old Custom House', in *Survey of London: Volume 15, All Hallows, Barking-By-The-Tower, Pt II*, (1934), pp. 31-43.

Work was undertaken between 1668 and 1671 to a design by Christopher Wren as his first major project within the city. There is some evidence of a collaboration between the two as the Treasury Minute book for 1667 notes that:

> Sir Anthony Cope called in with Dr. Wrenne about building the new Custom House [London port], Sir John Wolstenholme being present. The matter in difference to be stated by Sir Robert Long et al. to-morrow. [455]

Things did not go all together smoothly for in January 1673 a letter was sent from the Treasury indicating an on-going connection with Wren:

> Entry of the reference to Sir C. Harbord of the petition of Sir Anthony Cope for recompense for damage done him by the new building of the Custom House. Said Harbord is to examine what the King's right of building upon the old and new Wool Quay is and how far both the legality and equity of it does extend and to take a strict survey of the buildings and measures of ground, joining Dr. Wren with him herein. [456]

Sir Anthony died in 1675 during Plot's compilation of his *Natural History a work* which may have bought him some small degree of posthumous fame. The cause of Sir Anthony's death is not recorded but both his demise and his wife's descent into madness were much later ascribed, by the Rev. Leslie Ahrendt, rector of Hanwell, to grief at the loss of their children. In 1941 Ahrendt recorded translations from the Latin of the inscriptions on the tombs of two of Sir Anthony's offspring:

> Here lies a boy of high qualities and higher hope, Henry Cope, darling only son of the most noble Sir Anthony Cope, Baronet, and of Mary his wife.

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[455] Minute Book, (November 1667), http://www.british-history.ac.uk/cal-treasury-books/vol2/pp115-132., accessed 11 January 2021.

[456] Entry Book, (January 1673), http://www.british-history.ac.uk/cal-treasury-books/vol4/pp37-55, accessed 14 January 2021.

> Seven years he lived here, and then he rested in the Lord to enjoy the eternal Seventh Day. During his eighth year the Lord took him on the Lord's day itself, June 8th, A.D.1662.
>
> Here at the feet of a beloved brother in death untimely to her family, yet timely to her, lies mistress Mary Cope, only begotten daughter of these same parents and their only hope. A virgin, she passed to the choir of virgins on the eve of the Annunciation of the Blessed Virgin Mary whose name she bore. She reached within a year of the same limit of life as her brother, and the same day of the week on which he died before her namely the Lord's Day, A.D.1671.

These touching words with their emphasis on the loss of hope and the almost obsessive attention to the timing of their deaths suggests deep grief. Ahrendt goes on to write 'Four years later, at the age of only forty three, their father died of a broken heart. Their mother went out of her mind through grief and lived for another forty years. Perhaps it was she who caused the legend of the ghost of Hanwell Castle.' [457] No sources are quoted by Ahrendt in support of his views. Ghost stories apart, after the death of his last surviving son in 1662, it would not be surprising if Sir Anthony threw himself into the development of his gardens over the next decade or so. What is puzzling is how few accounts or reports there are, apart from Plot, of Sir Anthony's activities at Hanwell between the Restoration in 1660 and his death in 1675. As Roderick Floud put it, 'The restoration of Charles II […] meant that there was spending of large amounts of public money on gardens and, by that means and through his own personal interest, gave a crucial boost to gardening by the wealthy and aristocratic.' [458] Presumably Sir Anthony fits into this demographic.

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[457] A/TC, L. W. A. Ahrendt, *Hanwell Heritage, Notes on the History and Architecture of the Parish* (1941), duplicated leaflet.

[458] Floud, *Economic History of the English Garden,* p. 4.

Both Plot's reference to the 'Society of *Virtuosi*' gathered at the Cope family property at Tangley as living 'obscurely' during the Interregnum and his claim that the Hanwell household in some way was the real 'New Atlantis' point to Sir Anthony Cope having an active role in promoting associations of like minded individuals and providing them with some measure of resources to advance the cause of natural philosophy. There is no particular reason to doubt what Plot has to say and one must assume he had some grounds for making these assertions, presumably on the basis of information that was gathered from Sir Anthony himself and other interested parties with whom Plot met during the composition of his *Natural History*. The identities of the members of the Tangley society remain as obscure today as they were, presumably, in the 1650s but we can turn to Plot for his detailed account of what he saw at Hanwell and later to the sparse information we have regarding other residents at Hanwell to substantiate some of these claims.

Hanwell, Cope and Plot

Robert Plot was born near Sittingborne in Kent and matriculated at Magdalen College, Oxford in 1658. He remained there until 1676 when he moved to University College where he remained until his marriage in 1690. Early in the 1670s he conceived the idea of continuing in the vein of Leland and Campden, 'being studious to make search after the Rarities both of Nature and Arts afforded in the Kingdome for the Information of the Curious and in order to produce an Historical account of the same'. [459] His method was to circulate a series of questionnaires to interested parties, many of whom were members of the Royal Society, John Aubrey in Wiltshire being one of his first respondents. Added to this was a commitment to what today we would call field work. Beginning in the village of Cropredy, in the north of Oxfordshire, he systematically toured the county that he had divided into sectors mainly on the basis of using rivers as boundaries. [460] Plot defined his mission in the following terms:

> I shall consider, first, *Natural Things*, such as […] Animals, Plants, and the universal *Furniture of the World*. Secondly, her *extravagancies* and *defects*, occasioned either by the Exuberancy of Matter, or Obstinacy of Impediments, as in *Monsters*. And then lastly, as she is restrained, forced, fashioned, or determined, by Artificial Operations. All which, without Absurdity, may fall under the general Notation of a *Natural History*, things of *Art* (as the Lord *Bacon* well observeth) not differing from those of *Nature* in *form* and *essence*, but in the *efficient* only; Man having no Power over *Nature*, but in her Matter and Motion, *i.e.*, to put together, separate, or fashion Natural Bodies-and sometimes to alter their ordinary Course. [461]

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[459] Anonymous, 'Oxford Testimonial to Dr. Plot', 25 July 1674, quoted in Robert Gunther, *Science in Oxford*, vol. 12 (Oxford, 1939), pp. 345-6.

[460] Stan Mendyk, 'Robert Plot: Britain's "genial father of county natural histories"', in *Notes and Records of the Royal Society*, vol. 39, no. 2 (1985), p.161.

[461] Plot, *Natural History*, p. 1.

Graham Parry describes this as his 'attempt to produce a new style county history written in conformity with the Baconian values of the Royal Society'. [462] Plot had become of member of the Royal Society and, from 1683, its secretary and also editor of the society's *Philosophical Transactions* . This placed him, according to Mendyk, 'in direct contact with many of the leading British experimentalists'. [463]

Plot wrote of Sir Anthony in uniformly positive tones. He was given the title 'naturalist' once and 'artist' twice. In this context the term artist may have had a number of connotations in the seventeenth century: 'a person who pursues a craft or trade; a craftsperson, an artisan', ' a person skilled or proficient at a particular task or occupation; an expert', or most intriguingly, ' A person skilled in magic arts or occult sciences; an astrologer, an alchemist'. [464] He was named 'virtuoso' twice and was described as 'great and eminent' on two occasions but the most frequently used term was 'ingenious', which was employed three times. Ingenious is by far the most common term Plot used to express his appreciation of those he picked out to acknowledge some practical achievement. However, there are only two other instances of the use of virtuoso in Plot's *Natural History*. One refers to 'those Eminent virtuosi, Mr. Hook and Mr. Ray'. [465] John Ray (1627-1705) was a well known naturalist whom Plot mentions on several occasions and who was noted, on 15 March 1675, as being in London with, 'Hooke and Sir John Cope'. [466] This was just

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[462] Graham Parry, *The Trophies of Time, English Antiquarians of the Seventeenth Century* (Oxford , 1995), p. 300.

[463] Mendyk, 'Robert Plot', *Notes and Records of the Royal Society*, p. 164.

[464] 'artist, n.'. *OED*

[465] Plot, *Natural History*, p. 112.

[466] Charles Raven, *John Ray Naturalist His Life and Works* (Cambridge, 1950), p. xviii.

three months before the death of Sir Anthony. There is no information about what business they were conducting so the reference remains a curious one. Plot wrote of the two Roberts: Boyle and Hooke, in these terms, '[…] the most Learned and Ingenious, the Honourable *Robert Boyle* Esq. with the concurrent Help of that exquisite Contriver; Mr. *Robert Hook*'. [467] The other virtuoso listed by Plot was Sir Thomas Pennyston. Plot in describing investigations into a curious heavy white earth wrote, 'We tried it also at *Cornwel*, in Sir *Thomas Pennyston's Laboratory*, because of its Weight with divers *fluxing Salts*, in hopes of some kind of *metalline* Substance, but all (as before) to little Purpose.' [468] Clearly in Plot's mind virtuosi are defined, to a certain extent, by their hands on approach to scientific investigations, a viewpoint shared by his contemporaries. For example, writing in 1663 of Robert Boyle, Scottish physicist George Sinclair described him as 'so worthy and learned a virtuoso'. [469] In looking at the totality of Sir Anthony's interests, as charted by Plot, a slightly acerbic analysis of what it means to be a virtuoso, by Judith Drake, writing in 1696, could apply to both men:

> A Box or two of Pebbles or Shells, and a dozen of Wasps, Spiders and Caterpillers are his Cargoe. He values a Camelion, or Salamander's Egg, above all the Sugars and Spices of the West and East-Indies. . . . He visits Mines, Cole-pits, and Quarries frequently but not for that sordid end that other Men usually do, viz. gain; but for the sake of the fossile Shells and Teeth that are sometime found there […]
>
> To what purpose is it, that these Gentlemen ransack all Parts both of Earth and Sea to procure these Triffles? [. . .] I know that the desire of knowledge and the discovery of things yet unknown is the Pretence; but what

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[467] Plot, *Natural History*, p. 233.

[468] Ibid., p. 68.

[469] Quoted in Alex Craik, 'The hydrostatical works of George Sinclair (c.1630–1696): their neglect and criticism', *Notes and Records: the Royal Society Journal of the History of Science*, vol. 72, no. 3 (2018), p. 242.

> Knowledge is it? What Discoveries do we owe to their Labours? It is only the Discovery of some few unheeded Varieties of Plants, Shells, or Insects, unheeded only because useless; and the Knowledge they boast so much of, is no more than a Register of their Names, and Marks of Distinction. [470]

A more elevated view of a virtuoso, that could have been Sir Anthony's own guiding light, was voiced by Bacon almost a century earlier:

> […] men have entered into a desire of learning and knowledge sometime upon a natural curiosity and inquisitive appetite; sometime to entertain their minds with variety and delight; sometime for ornament and reputation; as if there were sought in knowledge a couch, where upon to rest a searching and restless spirit; or a terrace for a wandering and variable mind to walk up and down with a fair prospect; or a tower of state, for a proud mind to raise itself upon. [471]

Walter Houghton in his early study of English virtuosi in the seventeenth century argued that 'the virtuoso stops at the very point where the genuine scientist really begins'. [472] He sums up his view that virtuosity was in some ways a brake on scientific progress:

> Wilkins, indeed, was called 'the principall reviver of experimental philosophy (secundum mentem domini Baconi)'; and the master's lodgings at Wadham College was, I think, consciously associated with Solomon's House. Yet when we examine their study of automata and of optics, as compared with Bacon's in the New Atlantis, we find the clearest evidence for that dilution and distortion of the scientific mind which this essay has traced more than once to the spirit of virtuosity. [473]

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[470] Judith Drake, (attr. Mary Astell), *An Essay in Defence of the Female Sex, In Which are Inserted the Characters of a Pendant, a Squire, a Beau, a Vertuoso, a Poetaster, a City-Critick* (London, 1696).

[471] Spedding, Ellis and Heath, (eds.) *Works of Francis Bacon*, *The Advancement of Learning*, vol. 6, p. 134.

[472] Walter Houghton, 'The English Virtuoso in the Seventeenth Century: Part II' , *Journal of the History of Ideas*, vol. 3, no. 2 (1942), p. 194.

[473] Ibid., p. 201.

This would appear to be a little harsh in Sir Anthony's case, especially if we accept Plot's verdict that he had achieved a semblance of *The New Atlantis* at Hanwell, building on the activities of his 'Learned Society of Virtuosi' at Tangley.

The New Atlantis continued to be a concept to draw inspiration from throughout the latter part of the seventeenth century. Plot would certainly have been aware of R. H.'s (Robert Hooke ?) continuation of *The New Atlantis* and, even more topically, of Joseph Glanvill's (1636-80) essay of 1676. Glanvill, from a puritan household and an Oxford graduate, was described as 'the most skillful apologist of the virtuosi'. [474] His *Antifanatickal Religion and Free Philosophy* was sub-titled *Continuation of the New Atlantis* and offered 'an intellectual history and encomium of the Cambridge Platonists and latitudinarians'. [475] An instance of a practical attempt to realise a 'New Atlantis' was documented by Andrew Agha who suggested that Anthony Ashley Cooper, 1st Earl of Shaftesbury (1621-83) used slave labour to develop 'his 12,000-acre Carolina estate, as the material manifestation of a Royal Society influenced laboratory'. [476] Although perhaps not widely recognised as such, Plot obviously thought that Sir Anthony Cope of Hanwell had figured highly amongst such company.

Plot mentions Hanwell and the works of Sir Anthony eleven times in his *Natural History*, more than any other location outside the city of Oxford. However,

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[474] Richard Westfall, *Science and Religion in Seventeenth-Century England* (Ann Arbor, 1973), p. 18.

[475] William Burns, 'Glanvill [Glanville], Joseph (1636–1680)', *ODNB*.

[476] Andrew Agha, 'Shaftesbury's Atlantis' (University of South Carolina Ph.D. thesis, 2020), p. v.

there is a note of sadness tinting these references as it is clear that, during the compilation of the book, Sir Anthony had died. Although never explicitly stated it is a fair assumption that Plot knew Hanwell well and probably visited several times. We can now examine these entries in more detail in the order in which they appear in Plot's work.

Sir Anthony's Pebble. It can be assumed that, during the course of a visit to Hanwell, Plot was treated to a view of Sir Anthony's collection of rocks and minerals, presumably held in something like the cabinet of curiosities for which his great-great-uncle Sir Walter had been known, and possibly located in the 'House of Diversion':

> Of Pebbles there are some also *transparent* to be had around *Finstock* and *Nuneham-Courtney*; I found them also in the way between *New-Yate* and *Ensham*, but none comparable to what was shown me by that great *Virtuoso*, the Right Worshipful Sir *Anthony Cope* of *Hanwell*, […] The *Pebble*, I remember, was about the Breadth off one's Hand, off a flat Form, and yet not much less than an Inch in Thickness, so clear and pellucid, that no *Chrystal*, that I ever saw yet, excelled it; so that had not its *Master*, the cautious *Artist*, took care to leave on it part of its outward Coat, few would have believed it had ever been a *Pebble*. [477]

The pebble on view was a sample of rock crystal. It is interesting, particularly in the context of the report that Sir Anthony's mill was capable of cutting stone, 'after the manner of lapidaries', that Plot credits him with a hands-on approach to preparing this specimen. Plot goes on to comment on the use of such materials in glass-making and compares some Oxfordshire pebbles to those used by the glass-makers of Murano. He later describes George Ravenscroft's glassworks at Henley-on-Thames and the fact that some analysis of the materials used was undertaken by 'the Ingenious Dr.

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[477] Plot, *Natural History*, p. 73.

Ludwell formerly Fellow of *Wadham College*'. [478] There is an important point here relating to the dating of some of the glassware excavated at Hanwell, explained by Christine MacLeod:

> In the spring of 1674 George Ravenscroft, a London merchant trading with Venice in currants, lace, and glassware, took out a patent for 'cristaline glass'. The patent covered his attempt to produce a closer imitation of Venetian glassware. Unfortunately, his new glass, because it contained an excess of alkaline salts (which salts gave such glass its name of 'soda glass'), was found to 'crizzle', that is, to become opaque and gray through countless hairline cracks. In the course of correcting the problem, in 1675-76, Ravenscroft chanced on lead oxide as an alternative to a large part of the salts. This produced the lustrous glass substance, lead crystal, that became the distinctive feature of high-quality English glass. [479]

Although the precise terms and dates of this innovation have been questioned by MacLeod the fact that samples of both crizzled and uncrizzled glass have been excavated from amongst the debris of the 'House of Diversion' reinforces data from other finds regarding the date of the destruction of the building.

Sir Anthony's Cutlery. Shortly after his report of the translucent pebble Plot notes that, in comparing some local conglomerates

> with the best *Jasper* and *Achat* [Agate] I have seen such as these, found about *Hampstead*, curiously wrought into Handles of Knives by that eminent Artist Sir *Anthony Cope*; to which few *Achats* might be compared, perhaps none preferred, either in the Polish, or variety of Colours. [480]

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[478] Plot, *Natural History*, p. 258.

[479] Christine MacLeod, 'Accident or Design? George Ravenscroft's Patent and the Invention of Lead-Crystal Glass', *Technology and Culture*, vol. 28, no. 4 (1987), p. 777.

[480] Plot, *Natural History*, p. 74.

Whether these were on show or were wielded by Plot himself, perhaps in the course of dinner at Hanwell, is uncertain but again it reveals Sir Anthony's special interest in matters geologic and clearly these items were produced at Hanwell rather than purchased elsewhere. Examples of cutlery of the period in the collection of the V & A offer some insight into the appearance of these knives and their usage:

> In the 17th century, sets of matching cutlery were still a novelty, and highly prized. The culture of the day demanded that they 'should not be merely polished and abundant but also rare and distinct.' It was the sign of a gentleman that he possessed cutlery made of unusual and valuable materials, and many knives, forks and spoons of this period have handles of agate, ivory, or other precious materials. [481] (Figure 43)

Figure 43. Seventeenth-century cutlery with decorated handles in the V&A Museum.

[481] V&A Museum, on-line catalogue, http://collections.vam.ac.uk/item/O295366/fork-unknown/ , accessed 17 September 2020.

Knife handles in agate, chalcedony and cornelian were part of the original collection at the Ashmolean curated by Plot but nothing was recorded of their origin. [482] A similar collection was curated by Sir John Soane and is now on display in the Enlightenment gallery at the British Museum.

Sir Anthony's Fossil. Writing of a type of stone he termed, '*Bucardites* our *Stones* like *Bull's Hearts'* Plot tells the following story:

> Of these I had one sent me by my worthy Friend *Robert Perrot* Esq; from *North-Leigh*, ten Inches round and near ten Pounds in Weight, which is the biggest of the kind that I have yet saw, except one that I found at Shutford, going up a little Hill East-ward of the *Town*, about 20 Pounds in Weight, though broken half away, curiously reticulated with a White spar-colour'd *Stone*, as in *Tab. 7 Fig. 4* which being much too heavy for my Horse-portage, was afterward upon my direction, fetch'd away by the Ingenious Sir *Anthony Cope*, since whose Decease it is come I suppose into the hands of his equally Ingenious Brother Sir *John Cope*, the Heir of his Virtues as well as Estate. [483]

Here we have further evidence of the interest, shared by the two virtuosi, in rocks, minerals and fossils although Plot maintained that they were the product of mineral salts crystallising within rocks rather than relics of anything that had once been alive. We have no record of how Sir Anthony viewed these curiously shaped stones and even less what his brother John made of what he inherited. Plot was able to have the fossil drawn for it is ably illustrated in his *Natural History* to the point where modern palaeontologists have been able to identify it as an example of *Homomya gibbosa*, probably from a deposit of inferior oolite from the middle Jurassic (Figure 44). [484]

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[482] Arthur MacGregor, 'Antiquities from the Foundation Collection of the Ashmolean Museum' (University of Durham Ph.D. thesis, 1983), p. 265.

[483] Plot, *Natural History*, p.128.

[484] Oxford Museum of Natural History, *Robert Plot*, exhibition leaflet (No date), p. 8.

The fossil supposedly remained in the hands of his brother John. This element of continuity is born out by the dedication of the engraving 'TAB II':

To the right Worshipfull
The learned and curious
Artist SIR JOHN COPE Baronet
This Second Table
of formed STONES whereof the 9th.
and 10th. are found in his own grounds
is humbly dedicated [485]

If Plot had recovered the Shutford specimen one wonders if he might have also taken other items from Sir Anthony's collection. However, writing in 1692 he makes it clear that he hopes one of his prize specimens is still in the custody of Lady Cope at Hanwell, so it appears that the collection was not passed on. [486] Plot also records examples of a fossil he terms a 'selenite' from Hanwell, a further instance of Sir Anthony's collecting interests. [487] The reference to the study of fossil sea urchins by the 'Learned Society of *Virtuos*i', that presumably included Sir Anthony, at the Cope property at Tangley is instructive:

> The *Center* of these *Rays,* by *Pliny* called *Modiolus*, by Aristotle, Umbilicus, is never placed on the Top of the Stone, but always inclining to one side, as that at the Bottom does to the other; the *Axis* lying obliquely to the *Horizon* of the Stone. Which gave Occasion to a Learned Society of *Virtuosi*, that, during the late Usurpation, lived obscurely at *Tangley*, and had then time to think of so mean a Subject, by consent to term it the *Polar-Stone*, having

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[485] Plot, *Natural History,* facing p. 93.

[486] Robert Plot, Letter to Edward Lloyd, quoted in Robert Gunther, *Early Science in Oxford*, vol. 12 (London, 1920), p. 391.

[487] Plot, *Natural History*, p. 84.

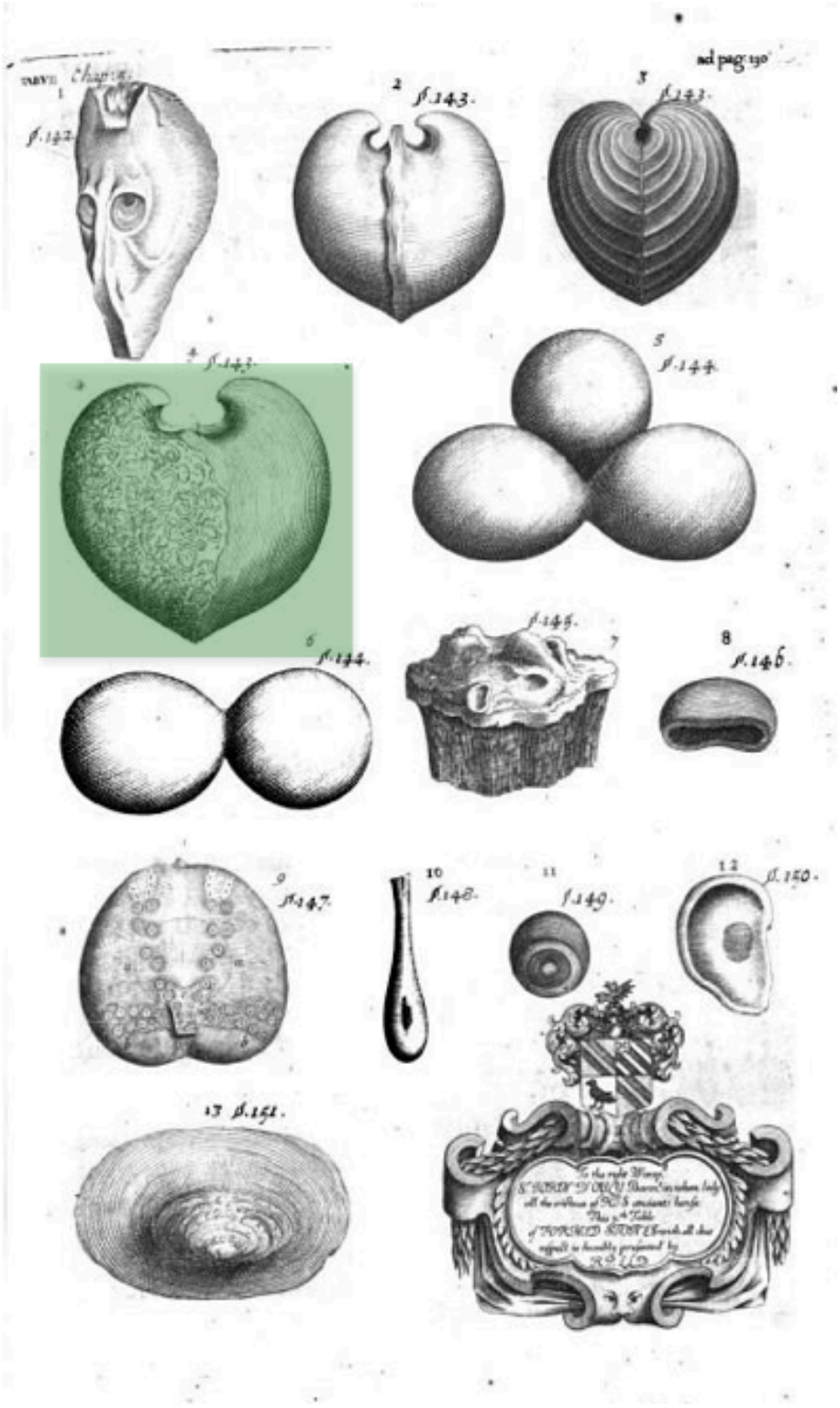

Figure 44. Plot's *Natural History*, Tab. VII, Shutford fossil highlighted in green.

> ingeniously found out, by clapping two of them together […] that they made up a *Globe*. [488]

Being at leisure contributed to their being free to study a subject that may have been viewed as comparatively trivial. Even so there is a measure of discussion resulting in the group being confident enough to offer their own nomenclature to the stones. Indeed it can be assumed that they are actively involved in searching for fossils in the area as Plot also notes specimens of *Brontiae* being recovered from Tangley. [489]

Sir Anthony's Elm. Writing of a particularly distinctive variety of narrow, small-leaved elm Plot says

> Of those there are plenty in the *Avenues* to the House of the Honourable the Lady *Cope*, the Relict of the most Ingenious Sir *Anthony Cope* of *Hanwell*, where there is a whole Walk of them planted in order beside others that grow wild in the *Coppices* of the *Park*. [490]

As well as simply noting their presence Plot also collected specimens for, according to J. V. Armstrong and P. D. Sell, 'Robert Plot, an Oxford antiquarian, discovered an elm at Hanwell Oxfordshire which he named *Ulmusfolio angustoglabro*. A specimen collected by Plot is in the British Museum and shows that it is a distinct species of small-leaved elm still found in northern Oxfordshire today.' [491] Further investigations by C. Jarvis revealed that, 'The Plot specimens that Peter Sell refers to appear to have come into Soane's herbarium comparatively early where they occupy one of the

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[488] Plot, *Natural History*, p. 92.

[489] Ibid., p. 91.

[490] Ibid., p. 161.

[491] J. V. Armstrong, and P. D. Sell, 'A revision of the British elms: the historical background', *Botanical Journal of the Linnean Society*, vol. 120 (1996), pp. 39-50.

bound volumes (HS 113, ff. 1-186) held within the Natural History Museum's Botany Collections.' [492] Given that a variety of small-leaved elm (*Ulmus plotii*) can still be seen in the park at Hanwell the question as to whether or not these are descendants of the elms Plot collected from is an interesting one. Botanist M. A. Spencer considered that this was certainly possible. [493] Another vegetative curiosity still to be found within the garden is a colony of the rare Broad-Leaved Ragwort *(Senecio sarracenicus*). Peter Llewellyn comments,

> Also known as Saracen's Woundwort and until recently known as *Senecio fluviatili*s, this European plant was introduced from the Netherlands or Germany around the 16th century when it was known as Saracen's Confound or Saracen's Comfrey. Like many of the *Senecio* genus it flowers in mid or late summer but this plant stands over 2m tall. The flowers are obviously typically Ragwort and it usually grows in damp or wet areas. [494]

Again the possibility exists that this is may be a long term survival from a much earlier planting.

Sir Anthony's Mollusc. It easy enough to see how Plot would have become familiar with the Hanwell elms; however, it is a testimony to his diligence and systematic approach to gathering information for his book that he also busied himself identifying molluscs in the ponds.

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[492] Charles Jarvis, Plants Division, Department of Life Sciences/Centre for Arts and Humanities Research, Natural History Museum, personal communication 14 October 2013.

[493] Mark Spencer, Senior Curator, British and Irish Herbarium, Department of Life Sciences, Natural History Museum, personal communication 25 October 2013.

[494] https://www.ukwildflowers.com/Web_pages/senecio_sarracenicus_broad_leaved_ragwort.htm, accessed 11 November 2020.

> I found also in Ponds at *Bradwell, Hanwell*, and *Shotover-Forest*, as well as in *Rivers*, the *Mytilus flaminum maximus subviridis* , whereof I examined several in hopes of the *Pearls* to be found in them, mentioned by Sir *Hugh Plat* in the *Appendix* to his *Jewel-house* of *Art* and *Nature*; but I could not meet with any with *craggy rough* out-sides, in which it seems they are only found (*ours* being all of them *smooth*) and so lost my Labour. [495]

The disappointed Plot was probably referring to the Swan Mussel (*Anodonta cygnea*) which as well as turning up in water laid silts during excavations at Hanwell also maintains a healthy population in the lake to this day. His search would have been better directed towards the Freshwater Pearl Mussel (*Margaritifera margaritifera*), a species of growing rarity and protected under the Wildlife and Countryside Act of 1981.

Sir Anthony's Clock. Plot was obviously very taken by Sir Anthony's water clock or clepsydra and includes a lengthy and detailed description of the mechanism and its workings. The account follows on from his report on Wilkins's rainbow fountain at Wadham College:

> Nor can I pass by unmentioned, a *Clock* that I met with at *Hanwell*, at the house of the Right Worshipful Sir *Anthony Cope*, that moves by Water, and shews the *Hours*, by the rise of a new gilded *Sun* for every *Hour*, moving in a small *Hemisphere* of Wood, each carrying in their *Centers* the Number of some *Hour* depicted *black*; as suppose of *one* a clock, which ascending half way to the *Zenith* of the *Arch*, shews it a quarter past *one*, at the *Zenith* half *Hour*; whence descending again half way towards the *Horizon*, three quarters past *one*; and at last absconding under it, there presently arises another gilded *Sun* above the *Horizon* at the other side of the *Arch*, carrying in its *Center* the Figure *two*: and so of the rest. Which ingenious Device, though taken out of *Bettinus*, who calls it, *aquaria Automatis ingeniosissimi horarium operationem*: yet being since improved by that *ingenious Person*, and applyed to other Uses, particularly of a *Pseudo-perpetual Motion* made by the descent of several gilt *Bullets* upon an *indented* Declivity, successively delivered by a Wheel much of the same

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[495] Plot, *Natural History*, p. 190.

> Fabrick with the *Typanum* of the *Water-clock*, so that they seem still the *same*: I could not but in Justice take notice of it. [496]

The work Plot is referring to is *Aerarium philosophiae mathematicae* by Mario Bettini (1582-1657) published in 1648. Bettini was part of what Mordechai Feingold called, 'the complex Jesuit encounter with the mathematical sciences during the seventeenth century'. [497] However, the clock mechanism appears to be a design by a Jesuit professor, P. Francesco Eschinardi, who probably copied the idea from one Attilio Parisio who had published details inVenice in 1598. It is contained in *Appendix Ad Exodium De Tympano* attached as a supplement to Bettini's original work. Whilst noting that water clocks are of a very ancient lineage Silvio Bedini comments that, in the seventeenth century, 'During the period of scientific exploration a "new" type was apparently introduced, consisting of a compartmented metal cylinder which rotated by the displacement of a contained fluid through one or more small openings in the partitions between the compartments.' [498] Instead of an escapement regulating the timing of the clock it was controlled by the rate at which the water was permitted to flow between compartments (Figure 45). One of the most striking features of this clock, compared with other contemporary timepieces, was that it would have operated smoothly and fairly silently, a fact celebrated in 1656 by the creation of such a timepiece by the Campari brothers for a sleepless Pope Alexander VII. [499]

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[496] Ibid., p. 240.

[497] Mordechai Feingold, (ed.), ' The New Science and Jesuit Science: Seventeenth Century Perspectives, Archimedes', *New Studies in the History and Philosophy of Science and Technology*, vol. 6 (2003), p. vii.

[498] Silvio Bedini, 'The Compartmented Cylindrical Clepsydra', *Technology and Culture*, vol. 3, no. 2 (1962), p. 115.

[499] Ibid., p. 128.

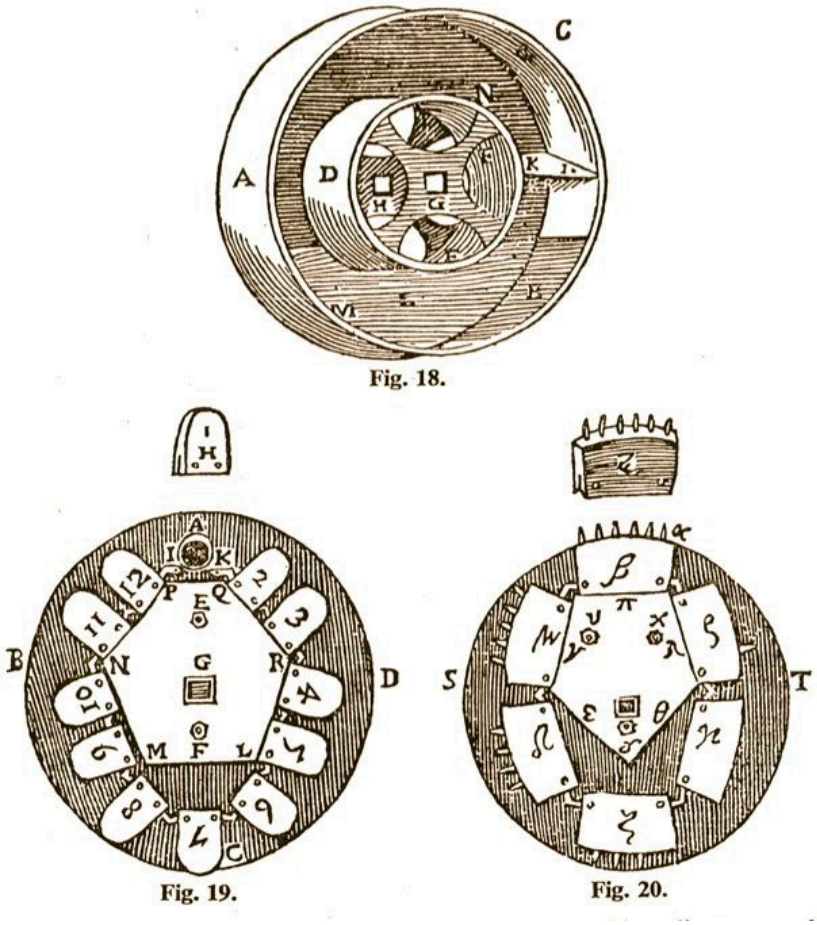

Figure 45. Eschinardi's *Appendix Ad Exodium De Tympano,* figures showing internal workings of water clock. Creative Commons Public Domain Mark 1.

One slightly puzzling feature of Plot's account is the phrase 'that moves by water'. This is not the case with clocks modelled after the Bettinus/Eschinardi pattern. Although there are several water-powered designs described by the de Caus brothers there are no accounts of any of them actually having been constructed in England. The rather ponderous mechanisms described in John Bate's *The Mysteryes of Nature and Art* of 1634 seem too simplistic to serve as a model for the Hanwell water clock.[500] Evelyn also describes and illustrates a variety of water powered timepieces and

[500] John Bate, *The Mysteryes of Nature and Art* (London, 1634), p. 5 and 43.

includes an observation about such an instrument in the possession of a Mr. Greatorex. [501] This is likely to be Ralph Greatorex (c. 1625-75) who was a well known mathematical and scientific instrument maker with many contacts amongst the Oxford experimentalists. [502] A further design published by the Royal Society in 1745 is unlikely to have been following the pattern of the Hanwell clock. [503] Given that the *Appendix* actually specifies in considerable detail exactly how to produce such a timepiece it is possible that Sir Anthony commissioned a local craftsman to make the clock based on the published material. In that connection it may be significant that in 1671 Sir Anthony presented a conventional mechanical clock to the village church

Figure 46. Hanwell church, clock of 1671 by George Harris.

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[501] Evelyn, *Elysium Britannicum,* p. 247.

[502] Sarah Bendall, 'Greatorex, Ralph (c. 1625-1675)', *ODNB*.

[503] Charles Hamilton, 'A description of a clepsydra or water-clock', *Philosophical Transactions*, vol. 44 (1746), pp. 171-4.

made by George Harris of Fritwell (Figure 46). Cyril Beeson noted, without giving his source, that Cope owned a copy of G. da Capriglia's *Misura del Tempo* of 1665, 'the earliest treatise on clocks, which describes and illustrates turret clocks'. [504] The possibility exists that Sir Anthony may have also purchased one of Harris's lantern clocks. The finial on an example sold in 2006 bears a strong resemblance to an example excavated on the site of the 'House of Diversion' in 2019. It is unclear who 'the ingenious person' was who generated 'pseudo-perpetual motion'. As we are still presumably in the realm of time-keeping this may be a reference to an early type of rolling ball clock observed by Evelyn in 1655. [505] In what seems like a fortuitous survival it is stated by Philip Luccombe in *The Beauties of England,* published in 1764, that, 'Hanwell-park, near Banbury; the Seat of Sir Jonathan Cope, Bart. where is a Clock that moves by water….' but the author then quotes Plot almost verbatim so this is probably simply an instance of lazy reporting. [506]

Sir Anthony's Net. Immediately after his account of John Wilkins's well-known transparent bee-hives, as installed in the gardens at Wadham College, Plot goes on to record, perhaps prompted by association, Sir Anthony's prowess at fishing:

> For *Fish*, I was shewed the model of a net contrived by the ingenious Sir *Anthony Cope*, that seemed likely to catch all found within such a compass. [507]

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[504] Cyril Beeson, *Clockmaking in Oxfordshire 1400-1850* (Oxford, 1989), p. 39.

[505] Quoted in Arthur Ord-Hume, *Perpetual Motion: the History of an Obsession* (Kempton, 2005), p. 186.

[506] Philip Luckombe, *The beauties of England: or, a comprehensive view of the antiquities of this kingdom; the seats of the nobility and gentry; the chief villages, market towns, and cities; intended as a travelling pocket companio*n (London, 1764), p. 139.

[507] Plot, *Natural History*, p. 263.

Fishing with nets was certainly the most common form of fishing as employed throughout the middle ages and into the early modern period for the large scale exploitation of fish as a food resource. [508] Markham in 1657 recommends the use of a 'shove net' when harvesting fish. [509] Shove or push net fishing is still widely employed today, especially when collecting shrimps, and features a large net typically suspended on an arrangement of two or three poles. [510] In the literature of the time netting is seen as the poor commercial relation to the noble pastime of angling as documented in such works as Tomas Barkers' *The Art of Angling* from 1659 and of course Isaak Walton's *The Compleat Angler* of 1653. The authors of *The Countrey Farme* published in London in 1616 celebrated the taking of fish 'by the angle, which is the most generous and best kind of all other, and may truly be called the Emperor of all exercises'. [511] It is significant that, in turning his attention to the production of a net, Sir Anthony was demonstrating his concern with the technical and economic aspects of fishing above the pursuit of leisure.

Sir Anthony's 'House of Diversion'. Plot's account of the 'Water-works' at Hanwell follows the report on the water clock:

> There are some other *Water-works* at the same Sir *Anthony Cope's, in* a House of *Diversion* built in a small *Island* on one of the *Fish-ponds* , Eastward of his

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[508] Mick Aston, (ed.), *Medieval fish, fisheries, and fishponds in England'* (Oxford, 1988), p. 60.

[509] Gervase Markham, *Cheape and good husbandry*, p. 145.

[510] Food and Agriculture Organisation of the United Nations, *Push Net Fishing*, http://www.fao.org/fishery/fishtech/1023/en, accessed 6 July 2021.

[511] Charles Estienne, Jean Liébault, Gervase Markham and Richard Surflet, *Maison rustique, or, The countrey farme* (London, 1616).

> House, where a *Ball* is tost by a *Column* of *Water* and artificial *Showers* descend at pleasure; within which they can yet so place a *Candle,* that though one would think it must needs be overwhelmed with *Water,* it shall not be extinguish'd &c. [512]

It is difficult not to associate this account with Plot's well-known engraving of the Enstone Marvels that appears just a couple of pages later (Figure 38). It is an image that is both useful and distracting. Here we undoubtedly have a small island in a pool, revetted in stone and approached by a timber bridge. Playing upon it are a variety of water jets, operated by a gardener and soaking a visitor. To what extent this image provides clues as to the appearance of Hanwell's near equivalent is debatable.

In comparing and contrasting the set up at Hanwell and Enstone the common element is that of an island enhanced with significant amounts of plumbing. Both enjoyed the distinction of having a column of water which tossed a ball in the air, a common enough feature of earlier water works. The fact that at Hanwell 'showers could be made to descend at pleasure' without extinguishing a lit candle and at Enstone the entire island could be watered, argue for an extensive network of pipes, stopcocks and nozzles. What Plot's account of Hanwell conspicuously lacks is any sense that visitors could expect to get, 'sportively wet'.

Plot's naming of the 'House of Diversion' presumably repeated Sir Anthony's own usage and indeed the term 'diversion' is used later in brother John's will of 1713 in connection with the pursuit of scientific interests. [513] There is also something of an

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[512] Plot, *Natural History*, p. 240.

[513] See below, p. 251 for reference.

echo of Bacon's 'House of Deceit' in *The New Atlantis*. [514] As we have already seen in the case of the 'House of Salomon' the term house can mean more than a simple single structure, however, here, the context strongly suggests an enclosed roofed space, a conjecture supported by the archaeological evidence. [515] As far as contemporary use of the word 'diversion' is concerned both, 'The turning away of the thoughts, attention, etc. from fatiguing or sad occupations, with implication of pleasurable excitement' and 'an amusement, entertainment, sport, pastime' illustrate usage in the second half of the seventeenth century. [516] A more succinct modern definition by Darryl Domingo is particularly helpful: 'making amusement out of study'. [517] Evelyn's comment in the opening paragraph in *Elysium Britannicum*, *Cap. IX, Of Fountaines, Cascad's, Rivulets, Camales, Piscina's and Water-workes* provides a suitably watery context for the use of the word:

> There is none comparable to Water, and of that especially which proceedes from the Living Fountaine, to refresh and irrigate the thirsty plants, to dispose and elevate into Fountaines, Girandolas, Cascades, Piscinas, and other innumerable pleasant and magnificent diversions. [518]

With this in mind one might expect the phrase 'House of Diversion' to have been in common use in the seventeenth century but in fact instances of usage of the term are extremely rare. In the archive, *Early Modern Letters Online,* its searchable collection of over 150,000 letters contains not a single instance of the words nor, apart from

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[514] Bacon, *The New Atlantis*, in Bruce, (ed.), *Three Early Modern Utopias*, p. 183.

[515] See below, pp. 316-22.

[516] Plot, *Natural History*, pp. 269-70.

[517] Darryl Domingo, *The Rhetoric of Diversion in English Literature and Culture, 1690-1760* (Cambridge, 2016), p. 1.

[518] Evelyn, *Elysium Britannicum,* p. 169.

references to Plot, does *Early English Books Online*. [519] Two of the key references from the eighteenth century put a distinctly dubious gloss on the phrase. A sermon preached in 1704 in London, to merchants trading with Spain, by Ferdinand Fina used the term as synonymous with a play-house: '*An Assembly and Conventicle of Atheists, of Lyars, and Deceivers, full of Iniquity and Vanity*' . [520] In a farce by Isaac Bickerstaff from 1721 a character named Goose re-emphasises the seedy nature of such an establishment:

> You must learn to think more advantagiously, if you expect Prosperity here— But that I may not be tedious in my first Lectures, we'll quit this Conversation, and retire to a House of Diversion in the Hundreds of Drury; we'll drink 'till we rival the Sun with our ruddy Complexions; set up all Night with the Moon; lye with half a Dozen Virgins; break all the Windows of the Mansion; and then, like true Sons of Parnassus, make a hasty Escape, and pay no Reckoning, but leave that to be accounted for by the Gods. [521]

The closest usage, for what we imagine Plot's intention, was published over a century later, in 1787, in Italian in the memoires of the Italian playwright Carlo Goldoni whose Masonic lodge was judged to be a

> 'little house of diversion', where one 'passes time tranquil all that gives pleasure […] honestly', but also, a cultural institution, a type of academy reserved for the 'bourgeoisie.' Two requirements of the conversation provided that each one has to apply himself to some art or science communicating to the others the insights he will have learned from his reading and that every meeting day one of the company would have propose some doubtful point, either

519 http://emlo.bodleian.ox.ac.uk/home and https://www.proquest.com/eebo, accessed 20 September 2021.

520 Fernando Fina, *A Sermon upon the Occasion of the Late Storm* (London, 1704), p. 5.

521 Isaac Bickerstaff, *The modern poetasters: or, directors no conjurers. A farce. On the famous ode writers, satyrists, panegyrists, &c. of the present times* (London, 1721), p. 5.

> economic, or mercantile, or scientific on which each one would give his opinion. [522]

The 'House of Diversion' can, from Plot's account, be envisaged as an enclosed space within which Sir Anthony's waterworks were displayed but it seems likely that it would also have functioned in a similar way to the many banqueting halls or houses incorporated into gardens of the period. Here one might expect to appreciate good conversation whilst admiring perhaps objects of natural curiosity and enjoying a range of food and drink served from a buffet. [523] The whole set up calls to mind Mowl's description of John Evelyn's garden at Sayes Court from the late 1650s where there was, as well as a small banqueting house also a, 'two storey pavilion between his private garden and his "terras" […] an "elabatory" for serious study'. [524]

Sir Anthony's Mill. Possibly an even more ambitious construction than the 'House of Diversion' was an elaborately engineered water mill:

> At *Hanwell* in the Park, there its also a *Mill* erected by the ingenious Sir *Anthony Cope*, of wonderful contrivance, where-with that great *Virtuoso* did not only grind the *Corn* for his House, but with the same motion turned a very large *Engine* for cutting the hardest Stone, after the manner of *Lapidaries*; and another for boaring of *Guns*: and there, as in the *Mill* at *Tusmore*, either severally or all together, at pleasure. [525]

An early mill at Hanwell, known as Moor Mill whose traces can be seen just under a kilometre to the west, was in the hands of the Copes from 1538 until late in the

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[522] Piero Del Negro, 'Carlo Goldoni and Venetian Freemasonry', *Italica*, vol. 80, no. 2 (2003), p. 168.

[523] See below, pp. 316-22 for the finds.

[524] Timothy Mowl,'New science, old order:the gardens of the Great Rebellion', *Journal of Garden History*, vol.13, no. 1 (1993), p. 23.

[525] Plot, *Natural History*, pp. 269-70.

eighteenth century. The mill had closed by 1895. [526] This cannot have been the extraordinary piece of engineering described by Plot as it lay well outside the park. Both a saw mill for timber and a boring mill, to create water pipes from logs of elm, are illustrated in the Isaac de Caus volume *New and Rare Inventions of Water-works* published in London in 1659 (Figures 47 and 48). [527] These plates may well have been the starting point for the construction of Sir Anthony's 'large Engine' although for cutting stone and boring guns one would imagine a further degree of robustness. The business of boring out the barrel of a gun must have been quite challenging. In 1975 a cannon boring bar was recovered from Stream Mill at Chiddingly, Sussex, where it was noted by David Butler and Charles Tebbutt that the Stream Mill was in operation as a forge only, in the sixteenth century. By 1650, however, a furnace had been added, and was blowing at that date, and up to 1663. In 1664 it was out of use but still in repair, and had made munitions in the late wars. [528] Whilst water wheels for pumping water to garden features were not uncommon, they were used for this purpose at Hatfield and Wilton, such an overtly 'industrial' application is very unusual in a garden setting. Seemingly a slightly eccentric addition to one's garden, the siting of this mill, of such extraordinary capabilities, chimes well with the view taken by Bacon and later by Evelyn that there is knowledge to be had at the hands of those who, as artisans and craftsmen, pursue a trade.

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[526] *VCH Oxon*, pp. 112-23.

[527] Isaac de Caus, *New and rare inventions of water-works : shewing the easiest waies to raise water higher than the spring. By which invention the perpetual motion is proposed many hard labours performd and varieties of motions and sounds produced a work both usefull profitable and delightful for all sorts of people* (London, 1659), Plates XI and XII.

[528] David Butler and Charles Tebbutt, 'A Wealden Cannon-Boring Bar', *Post-Medieval Archaeology*, vol. 9, no. 1 (1975), pp. 38-41.

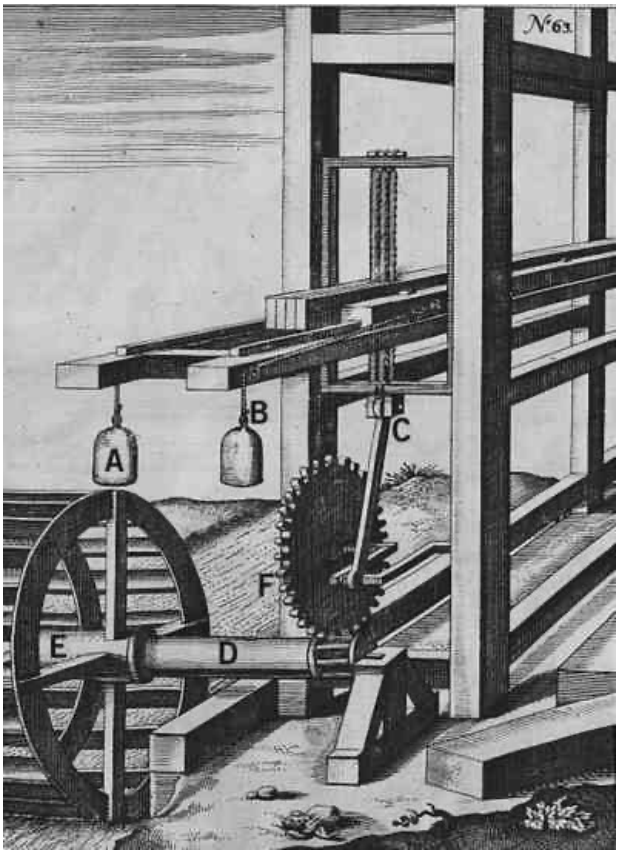

Figure 47. Saw mill from De Caus *New and Rare Inventions of Water-works*, plate XI.

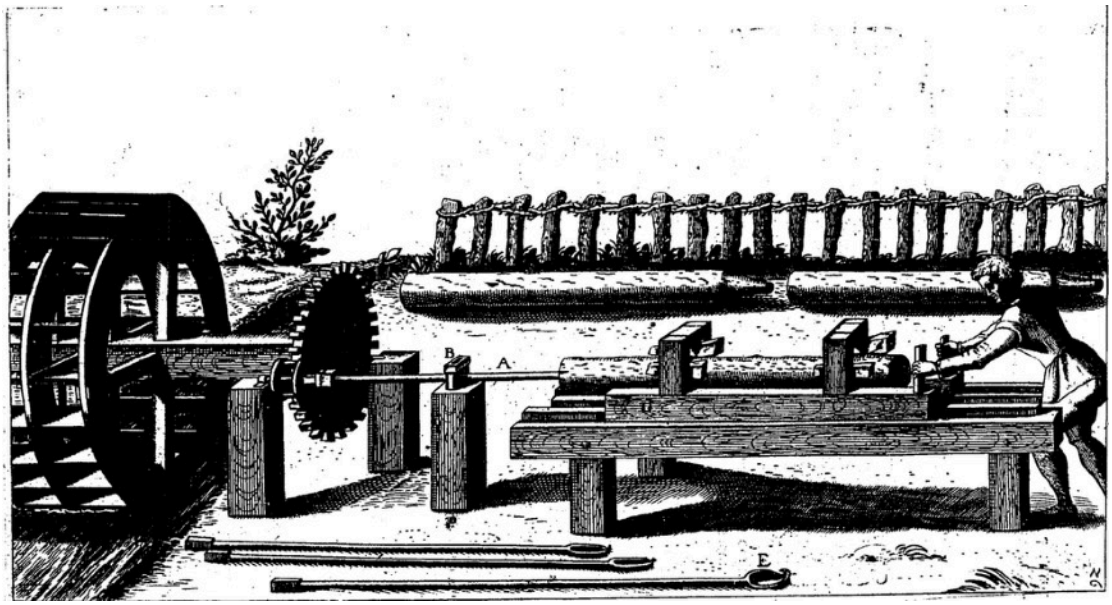

Figure 48. Boring wooden pipes from De Caus *New and Rare Inventions of Water-works*, plate XII.

This view is also reflected in Evelyn's approach to the complex of mills at his family's own property at Wotton House, Surrey, described by Brandon as an 'archetypal rural workshop'. [529] There is a clear echo here of Bacon's celebration of mechanisms in *The New Atlantis*. The actual structure of the mill building would probably have been timber framed and, despite the elaborate nature of the machinery inside, it could have been built on quite a small scale, as seen for example, in many village mills in eastern Europe (Figure 49). At the time of writing the position of this mill has yet to be located.

Figure 49. Small water mill, ASTRA National Museum Complex, Sibiu, Romania

[529] P. F. Brandon, 'Land, technology and water management in the Tillingbourne Valley, Surrey, 1560-1760', *Southern History,* vol. 6 (1984), p. 76.

Sir Anthony's Paintings. In an almost throw away comment Plot draws attention to

> … some remarkable Pieces of *Paintings* that we have here at *Oxon*; amongst which (to omit the *Deformation* of a *Caesar's* Head to be seen in the *Schools*), brought into Shape by a *metalline Cylinder*, and several others of the kind at *Sir John Cope's*. [530]

Sir John presumably inherited these from his brother. Although it is possible he may have purchased them himself it is more likely that they were in the house at Hanwell. Such images, known as anamorphs, have a long history dating back to the sixteenth century and were often to be found in cabinets of curiosity. James Hunt defines these as 'images of objects which have been distorted in some way so that only by viewing them from some particular direction or in some particular optical surface do they become recognisable'. [531] Solomon de Caus touched briefly on these images in his *La Perspective avec la Raison des Ombres et Miroirs* from 1612. [532] Amongst the many books published on optics and perspective was a volume by Jean-François Niceron (1613-46) from 1638 which included detailed instructions for preparing anamorphs. [533] The German scholar Athanasius Kircher (1602-80) produced a text in 1646 on experiments on geometry and illusion in his *Ars magna lucid et umbra* that was studied at Oxford. [534] In 1651 John Lydall (1623-57), a fellow of Trinity College, exhorted Aubrey to investigate, on the basis of Kircher's publication,

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[530] Ibid., p. 279.

[531] J. L. Hunt, B. G. Nickel and Christian Gigault, 'Anamorphic Images', *American Journal of Physics*, vol. 68, no. 3 (2000), p. 232.

[532] Salomon de Caus, *La Perspective avec la Raison des Ombres et Miroirs* (London, 1612), Ch. 28 [pages un-numbered].

[533] Jean Niceron, *La perspective curieuse avec L'optique et la catoptrique* (Paris, 1652), Tabs. 44-7.

[534] Athanasius Kircher, *Ars magna lucid et umbra* (Rome, 1646), pp. 133-5.

> how to draw pictures upon a cone so that to the eye rightly placed at one set distance they shall appear in a due proportion, at all others in a deformed. So like-wise how to draw them unlike upon a plaine, that being reflected from a cylindricall glasse, they may answer in a just symmetry & resemblance. [535]

In a further publication by Bettini, *Recreationum mathematicarum apiara novissima duodecim* from 1642, that may have been known to Sir Anthony, there is a section on the creation of anamorphic images including an illustration showing the head of Caesar brought into shape by a polished cone (Figure 50). [536]

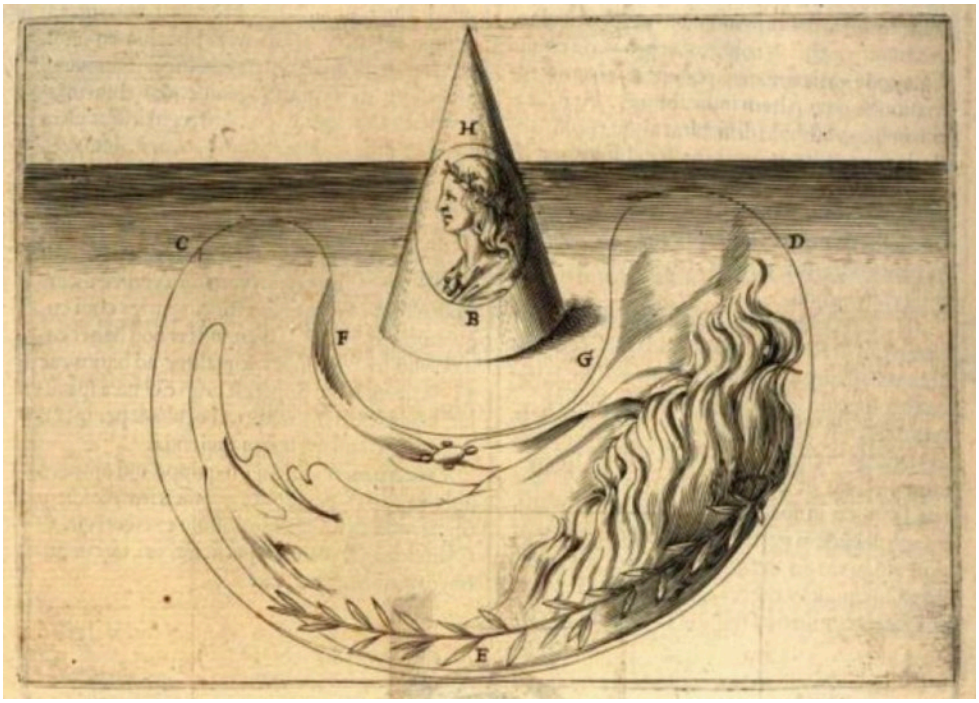

Figure 50. Anamorphic image from Bettini's, *Recreationum Mathematicarum*.

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[535] Quoted in Robert Frank, 'John Aubrey, F.R.S., John Lydall, and Science at Commonwealth Oxford', *Notes and Records of the Royal Society of London*, vol. 27, no. 2 (1973), p. 215.

[536] Mario Bettini, *Recreationum mathematicarum apiara novissima duodecim: Quæ continent militaria, stereometrica, conica, & novas alias jucundas praxes ac theorias, in omni mathematicarum scientarum genere* (Bononiae, 1642).

The only other near contemporary reference to Sir Anthony's interests comes *post-mortem* in the minutes of a meeting of the Royal Society for 25 May 1681. Unsurprisingly Robert Plot was in attendance:

> It was by several affirmed, that there were some English flints, which when polished, would be as beautiful as East-India stones: that Sir ANTHONY COPE had some such stones, which he took up at Bishops-Stortford, which being cut and polished seemed in the beauty, hardness and polish even to exceed the India Stones
>
> Mr. HENSHAW mentioned the stones of the same nature, which he had formerly brought from St. Alban's, and which were of as great a redness and beauty as those of Sir ANTHONY COPE, and were to be had of any desirable size. [537]

It is interesting that some six years after his death at least some memory of his collection lingered on, presumably partly kept alive by Plot, although not exclusively so, as the 'affirmation' of Sir Anthony's polished stones comes from a number of people at the meeting. Plot appears to have maintained cordial relations with Sir John Cope after Sir Anthony's death and it may be significant that when, in the late 1670s, he commenced work on his *Natural History of Staffordshire* it was dedicated to the 'Right Honourable the Virtuous and most accomplished Lady, Jane Lady Gerard Baroness Gerard of Gerards Bromley, the first actual encourager of this design' . [538] Jane Gerard was sister-in-law to Sir Anthony's widow Mary.

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[537] Thomas Birch, *The History of the Royal Society of London for Improving of Natural Knowledge from Its First Rise, in which the Most Considerable of Those Papers Communicated to the Society, which Have Hitherto Not Been Published, are Inserted as a Supplement to the Philosophical Transactions*, vol. 4 (London, 1757), p. 88.

[538] Robert Plot, *The Natural History of Staffordshire* (Oxford, 1686), p. 61.

Sir Anthony's Companions

In order to make a successful claim that Hanwell at least shared some of the attributes of Bacon's 'New Atlantis' it is necessary to populate the house and garden with a cast of potential, 'mystery men', 'pioneers', 'compilers', 'dowry men' and of course 'inoculators'. [539] Although the term was not used at the time these individuals might usefully be called 'new Atlanteans'. One such man, Richard Allestree (1619?-81), was born, 'the son of a decayed Derbyshire gentleman', as Beesley rather engagingly puts it, in Uppington, Shropshire (Figure 51). [540]

Figure 51. Richard Allestree, 1684 engraving by David Loggan. © National Portrait Gallery, London.

[539] Bacon, *New Atlantis*, p. 183.

[540] Beesley, *History of Banbury*, p. 471.

He entered Christ Church as a commoner in 1636. In a rather self congratulatory paragraph, in what John Spurr describes as 'the hagiographic biography', John Fell notes that

> Six months after his settlement in the University, Dr. Samuel Fell, the dean, observing his parts and industry, made him student of the college, which title he readily answered by great and happy application to study, wherein he made remarkable improvement; as a testimony and encouragement of which, so soon as he had taken the degree of Bachelor of Arts, he was chosen Moderator in Philosophy, and had the employment renewed year by year, till the disturbances of the kingdom interrupted the studies and repose of the University, putting them into arms. [541]

In 1642 Allestree enlisted in the Royalist army and may have taken part in an early skirmish or two before retuning to Oxford. Spurr takes up the story:

> According to his later biographers Allestree distinguished himself by his daring at this juncture. Saye's troops were seizing the treasure of the colleges and had locked the valuables found in the deanery at Christ Church in a chamber. Allestree, who had a key to the chamber, secretly removed these spoils overnight and would have been punished had not the parliamentarian forces left to join the earl of Essex's army. [542]

Allestree returned to the army and fought at the battle of Edgehill in October of that year. He was arrested by Parliamentarian forces from Broughton Castle whilst on his way back to Oxford. Beesley records that 'on the garrison of Broughton surrendering to the King's forces on the following Thursday, Allestree gained his liberty'. [543] It is not clear how much time he spent serving under the Royalist flag but he was back in Oxford the following year and undertaking more teaching. All this came to an end in

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[541] John Fell, *The Life of Allestree* (London, reprint 1848), p. 2.

[542] John Spurr, 'Allestree, Richard (1621/2–1681)', *ODNB*.

[543] Beesley, *History of Banbury,* p. 476.

1648 when he was disqualified, along with some 190 other fellows, from teaching, having refused to submit to the parliamentarian visitation. After a period as chaplain to Francis Newport, 1st Earl of Bradford, participation in the ill-fated Battle of Worcester in 1651 and a time lodging in Oxford and associating with other Royalist clerics, Samuel Fell and John Dolben, Allestree took on new accommodation:

> Sir Anthony Cope, a loyal young gentleman of considerable quality and fortune in the county of Oxford, prevailed upon him to live in his family; which he did for several years, having liberty to go or stay as his occasions required, whereby he was enabled to step aside without notice upon messages from the King's friends; which service he managed with great courage and dexterity. [544]

It is unclear exactly when Allestree moved to Hanwell. A letter dated 12 January 1656 from Elias Ashmole (1617-92) shows him to be abroad as it requests him to seek out material relating to a former alchemist:

> Now if your Retourne lye neere any of the places before menconed (which I guess to lie in Tyrole, but our Maps aford us not the place) pray enquire after St Michaells Hermitage & take notice neere what Towne of Note the said Hermitage lyes (for further then Inspurge our Mapps will not enable me to trace it) as also enquire whether there be any (& what) remembrance of such an old man, or what storyes the people thereabout haue left of him, or if you meete with any booke of Paracelsus that has the tytle of Cœna Domini, let it be conveyd hither for me, & I shall count my selfe much beholding to you. [545]

This not only indicates, at the very least, a friendly acquaintance between the two men but also presumably reflects on Allestree's own interest in alchemy. During the late

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[544] Fell, *Life of Allestree*, p. 11.

[545] Elias Ashmole, Letter to Richard Allestree, (1656) http://emlo.bodleian.ox.ac.uk/profile/work/daa63344-8bfe-4dff-80ef-9509d19b5715?sort=date-a&rows=50&people=Allestree&baseurl=/forms/advanced&start=1&type=advanced&numFound=6, accessed 2 February 2021.

1650s it appears that he was using the Hanwell as something of a safe house during the campaign to restore the future Charles II to the throne. Intriguingly his occasional code name seems to have been 'Little Richard'. [546] One assumes he was collecting financial contributions from Royalist sympathisers, smuggling them across the Channel to the court in exile and returning with instructions and messages of thanks and encouragement. Beesley, referring to 'King James the Second's Papers', indicates something of the risks that all parties were running:

> The proceedings which were carried on from Hanwell were conducted with the strictest privacy. Indeed such was Cromwell's vigilance, that both Allestree and Sir Anthony Cope had good reason to exercise the utmost caution, lest the movements of the former should be traced. It is however certain that Allestree performed several difficult journeys to the King while in his exile. [547]

That the dangers were real is borne out by events, in what Julian Whitehead called 'uncertain and giddy times', when in 1658 ex-Royalist commander, Sir Henry Slingsby, a minister, the Reverend John Hewett and three others taken at the Mermaid Tavern in Cheapside were executed for treason for doing little more than making ill-judged comments. [548] On one occasion, during the winter of 1659, Allestree was arrested in Dover and imprisoned for several weeks but the climate was changing rapidly and a number of Royalist friends were able to organise his release. He would almost certainly have been aware of the growing number of Royalist conspirators in Oxford, one of whom was Sir Anthony's former tutor, Robert Saye, who made the

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[546] Frederick Routledge, *Calendar of the Clarendon State Papers Preserved in the Bodleian Library, Vol. IV 1657-1660* (Oxford, 1932), p. 135.

[547] Beesley, *History of Banbury*, p. 473.

[548] Julian Whitehead, *Cavalier and Roundhead Spies: Intelligence in the Civil War and Commonwealth* (Barnsley, 2009), p. 192.

quadrangle at Oriel College available for mustering should armed revolt break out in the city. [549] After the restoration of Charles II Allestree was made a canon of Christ Church Cathedral and in 1663 he became a chaplain-in-ordinary to the King and later that year Regius Professor of Divinity. Finally in August of 1665 he was appointed provost of Eton College. [550]

As a churchman Allestree's theology is characterised by Mark Purcell as being 'whole-heartedly Arminian*; he rejected the episcopalian Calvinism of the first half of the seventeenth century and clearly saw himself as a spiritual successor of the martyred (and Oxonian) Archbishop Laud'. [551] There is no doubt at all that Allestree was also, when required to be, what today we might call, 'a man of action'. As Fell says, 'he thought it no disgrace to carry a musket and perform all duties of a common soldier, forward upon all occasions to put himself into action'. [552] Allestree was responsible for a number of devotional works including, perhaps the best known publication, *The Whole Duty of Man* published anonymously in 1657, a text that he may have been working on during his time at Hanwell. Paul Elmen remarks that 'the authorship has been concealed with surprising success', although it could perhaps have provided Allestree with a good cover story if he had ever needed to explain his

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[549] Robert Beddard, 'Restoration Oxford', in Nicholas Tyacke, (ed.), *The History of the University of Oxford, Vol. IV Seventeenth-Century Oxford* (Oxford, 1997), p. 810.

[550] Allestree, *ODNB*.

[551] Mark Purcell, '"Useful Weapons for the Defence of That Cause": Richard Allestree, John Fell and the Foundation of the Allestree Library', *The Library*, vol. 6, no. 2 (1999), p. 126.
* 'following the doctrines of Jacobus Arminius (1560–1609), a Dutch Protestant theologian, who rejected the Calvinist doctrine of predestination' *OED*.

[552] Fell, *Life of Allestree*, p. 6.

absence from Oxford. [553] However, it was not simply as a theologian that Allestree excelled. The admittedly biased Dr. Fell praises his

> deeper insight into all the parts of learning — the modern and learned languages, rhetoric, philosophy, mathematics, history, antiquity, moral and polemical divinity, all of which was not to be pumped up, or ransacked out of commonplace books, but was ready at hand, digested for his own use and communication in discourse to others. [554]

His library, now administered as part of the collection at Christ Church College, contains a number of his journals which reveal in particular Allestree's expertise and interest in mathematics with many detailed notes based on his study of astrology. [555] This is something of a family interest as his uncle, also named Richard Allestree, was an almanac maker and mathematician who published almanacs from 1617 until he died in 1643. [556] Another significant family connection was with the publisher James Allestree, who was probably a cousin, and became, from 1663 an appointed printer to the Royal Society. [557] Allestree's subsequent devotion to the cause of learning seems wholly characteristic of the man but what remains mysterious is that we have no record of visits to, or correspondence with, Sir Anthony, once his time at Hanwell had come to a close. Nor has a careful examination of his hand-written notebooks revealed anything that could be viewed as a reference to Hanwell or any studies that may have been conducted there. Perhaps the habit of secrecy was a hard one to loose.

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[553] Paul Elmen, 'Richard Allestree and The Whole Duty of Man', *The Library*, vol. 5, no. 1 (1951), p. 19.

[554] Fell, *Life of Allestree,* p. 19.

[555] Christ Church, Oxford, Allestree Collection; for example M.3.17 and M.3.18.

[556] Allestree, *ODNB*.

[557] Charles Rivington, 'Early Printers to the Royal Society 1663-1708', The Royal Society Journal of the History of Science, vol. 39 (1984), p. 1.

It was noted of Allestree by Fell that, 'To render himself secure from inordination of intemperance, he frequently abstained from lawful satisfactions, by the stated returns of fasting and abstinence, and continent in celibacy during his whole life.' [558] Given this one wonders how he got on with Sir Anthony's other known house guest for the period, the musician Thomas Baltzar (1631-63), a celebrated German violinist, who was, according to Evelyn, 'the most famous artist for the violin that the world had yet produced'. [559] Born in Lubeck in Germany from a family of musicians he was briefly a performer at the court of Queen Christina of Sweden before being recruited, possibly by Nathaniel Ingelo, a fellow of Eton College and a member of Bulstrode Whitelocke's 1654 embassy to that country. [560] The first record of his performing in England comes in a diary entry for 4 March 1656 by Evelyn:

> This night I was invited by Mr. *Rog: L'Estrange* to heare the incomperable *Lubicer* on the Violin, his variety upon a few notes & plaine ground with that wonderfull dexterity, as was admirable, & though a very young man, yet so perfect & skillfull as there was nothing so crosse & perplext, which being by our Artists, brought to him, which he did not at first sight, with ravishing sweetenesse, & improvements, play off, to the astonishment of our best Masters: In Summ, he plaid on that single Instrument a full Consort, so as the rest, flung-downe their Instruments, as acknowledging a victory: As to my owne particular, I stand to this houre amaz'd that God should give so greate perfection to so young a person: There were at that time as excellent in that profession as any were thought in Europ: *Paule Wheeler, Mr. Mell* and others, 'til this prodigie appeared & then they vanish'd; nor can I any longer question, the effects we read of in *Davids* harp, to charm maligne spirits, & what is said some particular notes produc'd in the Passions of *Alexander* & that King of Denmark. [561]

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[558] Fell, *Life of Allestree,* p. 22.

[559] Evelyn, *Diary*, p. 167.

[560] Biographical details from Peter Holman, 'Thomas Baltzar (1631?-1663), The "Incomparable *Lubicer* on the Violin"', *Chelys The Journal of the Viola da Gamba Society*, vol. 13 (1984), pp. 3-38.

[561] Evelyn, *Diary*, p. 168.

This would no doubt qualify today as a 5-star review although it is obvious that some of the acknowledged professionals in the audience were less than enchanted by the performance. The violin was at the time considered to be rather a modern instrument for which playing techniques were, in England, undergoing rapid evolution. They are described by Mary Cyr: 'With the arrival of famous violinists from abroad such as Thomas Baltzar and Nicola Matteis the English were exposed to fresh influences. The holding of the bow (the bow grip), the placement of the instrument against the body, the kinds of sonorities used on the instrument, all underwent decisive changes.' [562] He is listed as amongst the performers for a production of the opera *The Siege of Rhodes* by Sir William Davenant staged in the summer of 1656 at Rutland House in Charterhouse Yard and Anthony Wood recorded a performance at Cambridge in 1658, the same year that he arrived in Oxford. At this point he was according to Wood:

> entertained by Sir Anthony Cope of Hanwell House, Banbury, Bart., with whom he continued about two years; and in that time we had his company several times in Oxon where, playing in consort or division he would run up his fingers to the end of the fingerboard of his violin and run them back insensibly and all in alacrity and in very good tune which some there never saw the like before. [563]

Peter Holman suggests that for Sir Anthony, 'evidently Baltzar was a human addition to his collection of marvels'. [564] There are no obvious reasons why Baltzar should have moved in with the Copes except that there may have been a family connection

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[562] Mary Cyr, 'Violin Playing in Late Seventeenth-Century England: Baltzar, Matteis, and Purcell', *Performance Practice Review,* vol. 8, no. 1(1995), p. 54.

[563] Quoted in Holman, *Thomas Baltzar*, p. 8. Holman in turn is quoting John D. Shute, 'Anthony a Wood and his Manuscript Wood D 19(4) at the Bodleian' (International Institute of Advanced Studies Ph.D. thesis, Clayton, Missouri, 1979),

[564] Ibid., p. 9.

with Roger Le Strange, the promotor of the London concert, as Sir Anthony's great grandfather had married one Anne Le Strange. The first documented performance in Oxford was on Saturday 24 July 1658 and Wood was there:

> Thomas Balsar or Baltzar, a Lubecker borne, and the most famous artist for the violin that the world has yet produced, was now in Oxon: and this day A [nthony] W [ood] was with him and Mr Edward Low, lately organist of Ch[rist] church, at the meeting house of William Ellis. A. W. did then and there, to his very great astonishment, heare him play on the violin. He then saw him run up his fingers to the end of the finger board of the violin and run them back insensibly, and all with alacrity and in very good tune, which he nor any in England saw the like before. A. W. entertain'd him and Mr Low with what the house could then afford, and afterwards he invited them to the tavern; but they being engag'd to goe to other company, he could no more heare him play or see him play at that time.
>
> Afterwards he came to one of the weekly meetings at Mr Ellis's house and he played to the wonder of all the auditory: and exercising his fingers and instrument several wayes to the utmost of his power, Wilson thereupon, the public professor, (the greatest judg of musick that ever was) did, after his humoursome way, stoop downe to Baltzar's feet, to see whether he had a huff on, that is to say to see whether he was a devill or not, because he acted beyond the parts of man. [565]

Perhaps the most significant of the reports in connection with this study is that of a concert given at the behest of John Wilkins at Wadham College:

> About that time it was that Dr John Wilkins, warden of Wadham Coll, the greatest curioso of his time, invited him and some of the musicians to his lodgings in that Coll. purposely to have a consort and to see and heare him play. The instruments and books were carried thither, but none could be perswaded to play against him in consort on the violin. At length the company perceiving A. W. standing behind, in a corner neare the door, they haled him in among them, and play forsooth he must against him. Whereupon he being not able to avoid it, he took up a violin and behaved himself as poor Troylus did against Achilles. He was abash'd at it, yet honour he got by playing with, and against such a grand master as Baltzar was. Mr Davis Mell was accounted hitherto the best for the violin in England as I have before told you; but after Baltzar came into England and shew'd his most wonderful parts on that instrument, Mell was not so

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[565] Kiessling, *Life of Wood,* p. 59.

> admired; yet he played sweeter, and was a well bred gentleman and not given to excessive drinking as Baltzar was. [566]

Baltzar was living at Hanwell whilst giving concerts in Oxford and accounts of attendees at his performances reveal the presence of several key players in the development of new scientific thinking and practices. Upon the restoration of Charles II Baltzar was appointed, in September 1660, to the King's Private Music. Less than two years later he was dead. Initially Wood recorded this as being the result of 'the French pox [Syphilis] and other distempers' although he later changed his mind and noted that:

> This person being much admired by all lovers of musick, his company was therefore desired; and company, especially musicall company, delighting in drinking, made him drink more than ordinary which brought him to his grave. [567]

The households that Sir Anthony's wife Mary presided over in the late 1650s, at Hanwell, must have been a remarkable ones; assuming she was indeed around and not away in one of the other family properties. It is possible that Allestree was reflecting on this *ménage* when he commented on, 'The soul imprisoned in this house of clay […] as if a fiddler should play in a dungeon'. [568]

As well as practising, and no doubt drinking, for long hours, Baltzar almost certainly composed a number of pieces during his time at Hanwell including a set of Divisions in D minor from 1659. [569] A selection of his music is amongst the

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[566] Ibid., p. 59.

[567] Ibid.. p. 96.

[568] Christ Church, Oxford, Allestree Collection, M.3.23 22.

[569] Holman, *Thomas Baltzar*, p. 16.

manuscripts in Christ Church Music Library and was recorded in 2008. [570] There was a painting in the possession of Lord St. Oswald of Nostell Priory in Yorkshire entitled *The Crimson Bedchamber, portrait group of gentlemen with musical instruments* that was traditionally said to depict the Cabal Ministry of King Charles II and painted by Sir John Baptist de Medina (1659-1710). Holman makes a strong case that in fact this is a portrayal of the King's musicians from the early 1660s in which case the seated figure to the left may be Baltzar (Figure 52). [571]

Figure 52. *The Crimson Bedchamber*, by Sir John Baptist de Medina, the seated figure to the left may be Baltzar. © Bridgeman Images.

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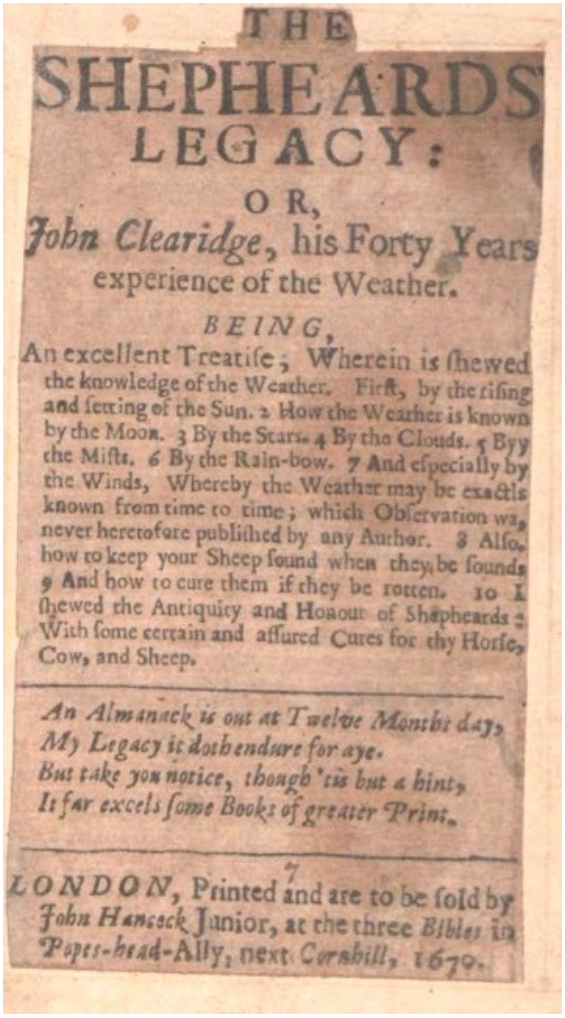
[570] Peter Wood, *Baltzar: Complete Works for Unaccompanied Violin*, Msr Classics ASIN: B000XULO70. (2008).

[571] Holman, *Thomas Baltzar*, p. 33.

However remarkable these two men were and whatever kind of relationship they may have had they hardly constituted a community. Given that Plot was writing fifteen years after they had departed Hanwell and the fact that he mentions neither of them in his *Natural History* rather suggests that they were not on his mind when he made his comparison to *The New Atlantis*. One individual whom Plot could possibly have been acquainted with was a shepherd from Hanwell named John Claridge, the author of a publication dating from 1670 entitled *The Shepherd's Legacy*. [572]



THE
SHEPHEARDS
LEGACY:
OR,
John Clearidge, his Forty Years
experience of the Weather.
BEING,
An excellent Treatise; Wherein is shewed the knowledge of the Weather. First, by the rising and setting of the Sun. 2 How the Weather is known by the Moon. 3 By the Stars. 4 By the Clouds. 5 By the Mists. 6 By the Rain-bow. 7 And especially by the Winds, Whereby the Weather may be exactly known from time to time; which Observation was never heretofore published by any Author. 8 Also, how to keep your Sheep sound when they be sound; 9 And how to cure them if they be rotten. 10 I shewed the Antiquity and Honour of Shepheards: With some certain and assured Cures for thy Horse, Cow, and Sheep.

An Almanack is out at Twelve Months day,
My Legacy it doth endure for aye.
But take you notice, though 'tis but a hint,
It far excels some Books of greater Print.

LONDON, Printed and are to be sold by John Hancock Junior, at the three Bibles in Popes-head-Ally, next Cornhill, 1670.

Figure 53. *The Shepheards Legacy*, 1670, title page. © Crown Copyright 2021, image provided by the National Meteorological Library and Archive.

[572] Met Office Archives, https://digital.nmla.metoffice.gov.uk/file/sdb%3AdigitalFile%7C656f7d4c-f4cc-489f-a199-8a9f16f41320/ , accessed 15 March 2021.

The pamphlet deals with his abilities in weather forecasting, wife choosing and curing sheep of conditions such as 'black-winds', 'water-canker' and 'liver-rot' (Figure 53). A number of his recipes appear very similar to examples noted by Allestree in some of his notebooks. Tellingly in the preface Claridge describes how he has been 'importuned by sundry friends (some of them being worthy persons) to make public his work'. It seems likely that, as Claridge was an inhabitant of Hanwell, one of these 'worthy persons' was Sir Anthony Cope. The fact that an individual as 'humble' as a shepherd could publish his observations on natural phenomena and indeed have them printed in London suggests local patronage and possible subsidy. However, whilst there are interesting echoes of Plot's observations of the weather, Claridge gets no mention in *Natural History*. Except for a pair of able-seamen from Bristol, Plot's authorities tend to be either ancient authors or university men. In terms of tracking down the historical personage of John Claridge, in 1660 a weaver of that name is recorded as living in the adjacent parish of Bourton. [573] A memorandum in the parish register dated 31 August 1662 regarding the public reading of George Ashwell's certificate in connection with the Act of Uniformity was signed by John Claridge as a church warden. [574] On 9 May 1693 a John Claridge is listed as a legatee in the will of William Hawtin, a weaver from Horley: 'To my brother John Claridge of Hanwell £5. If my brother John Claridge don't live it is to go to his son Samuell Claridge.' [575] If this is the author of pamphlet he must have been quite elderly. Given that the tract published in 1670 claims forty years 'on the job' experience, he was probably born around 1620. By 1841 John Claridge had become, according to Beesley, 'only an

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[573] Oxfordshire History Centre, Misc. Pe. V/4, 5, Cropredy Par. Rec., tithe books.

[574] Oxfordshire History Centre, PAR122, Parish of Hanwell, Church Registers Vol.1 (1586-1753).

[575] William Hawtin, will, Probate, (July 1697) Banbury, http://wills.oxfordshirefhs.org.uk/az/wtext/hawtin_003.html, accessed 15 March 2021.

apocryphal person'. [576] However, a thorough attempt to save Claridge from obscurity was made by W. E. Rye in the 1853 edition of *Notes and Queries*. [577] The work was originally published in London by John Hancock Junior at 'The Three Bibles in Popes-head-ally next Cornhill'. A search through his other publications fails to turn up any other volumes with a possible connection to north Oxfordshire or Sir Anthony Cope. Keith Thomas gives a brief account of John Claridge suggesting that his weather predictions were aligned with 'the magician's art of fortune telling'. [578]

A further potential member of Sir Anthony's community of 'new Atlanteans' was the royalist cleric George Ashwell (1612-94). Ashwell attended Wadham College, where he became fellow librarian and sub-warden, from 1629 to 1648 when he was probably ejected by the parliamentarian visitors. Anthony Wood described him as 'a quiet and pious man […] well read in the fathers and schoolmen' and as 'a noted tutor'. [579] It is possible that during his time at Oxford he made the acquaintance of the young Sir Anthony. After a period as curate in Westwood, Worcestershire, Ashwell succeeded Robert Harris to the living of Hanwell in 1658. Beesley suggests that he was chaplain to Sir Anthony before his appointment. There is no doubt that Ashwell was a scholar with several works of divinity to his name as well as a translation of *The History of Hai Eb'n Yockdan , An Indian Prince: Or, the Self-Taught Philosopher* published in London and Banbury in 1686. Louisiane Ferlier and Claire Gallien summed up Ashwell's approach to this in that he, 'cut out most philosophical

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[576] Beesley, *History of Banbury*, p. 526.

[577] W. B. Rye, 'The Shepherd of Banbury's Weather Rules', *Notes and Queries*, no. 181 (1853).

[578] Keith Thomas, *Religion and the Decline of Magic* (London, 1972), p. 282.

[579] Wood, *Athenæ Oxonienses*, p. 396.

elements from the narrative to create an Orientalist easy-read. But by adding after the text a theological pamphlet entitled "The Book of Nature," Ashwell also turned Ibn Tufayl's discourse into a defence of "natural religion".' [580] As an advocate of natural religion, one might have expected him to have shared some of Sir Anthony's enthusiasm for natural philosophy; however, his unfortunate experience in the garden at Wadham may have made him a little reluctant to become too involved. [581] His *Gestus Eucharisticus,* published in 1663, is dedicated to, ' the Right Worshipful, His Worthily Honoured Patron, Sir Anthony Cope of Hanwell, Baronet'. In the dedicatory epistle Ashwell speaks of Sir Anthony in these terms:

> *As to the choice of the* Person*, to whose Protection I have made bold to recommend so inconsiderable a Treatise; the very Title in the Front of this Epistle will, I hope, either defend or Excuse me to the World, though the Discourse itself be unworthy of his Acceptance. For the very name of* Patron *is a Sufficient Evidence of my Obligations, and may justly claime whatsoever I can do in this kind, as a Testimonial of my Gratitude; which I must shew as I can, when I cannot as I would. And your Noblenesse , I well know, looks not so much at the Greatness of the Gift, as the good will of the Giver. […] I have nothing more to adde, but what I am bound upon all good occasions to remember; my hearty prayers for a Blessing upon* Your Self*, your* Noble Lady*, and all the* Branches *of your* Ancient Family*. And more especially, at this present, that* God *would so prosper your counsels and endeavours for the* Public Peace. [582]

Clearly it is in the nature of such dedications to offer fulsome praise to one's patron but in this instance there seems to be a particular warmth, possibly engendered by sympathy for the death of Henry, Sir Anthony's only surviving son, in 1662. Given

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[580] Louisiane Ferlier and Claire Gallien, '"Enthusiastick" Uses of an Oriental Tale: The English Translations of Ibn Tufayl's Hayy Ibn Yaqdhan in the Eighteenth Century', in Claire Gallien and Ladan Niayesh, (eds.) *Eastern Resonances in Early Modern England. New Transculturalisms, 1400–1800* (London, 2019), p. 1.

[581] See above, p. 149 for the story.

[582] George Ashwell, *Gestus Eucharisticus* (Oxford, 1663), Dedicatory Epistle. A copy bearing the signature of John Cope is now in the keeping of Rowena E. Archer and Christopher Taylor.

that shortly after Ashwell's appointment we have Richard Allestree and Thomas Baltzar in residence his incumbency as a 'quiet, unassuming fair-minded man' may, at the very least, have been a soothing presence. [583] Further evidence of Ashwell's acquaintanceship with Allestree comes from the fact that a manuscript, 'borrowed of Mr. Ashwell', and presumably not returned, exists in the Allestree Library at Christ Church. [584] To what extent Ashwell shared Allestree's Arminian enthusiasms is uncertain although Daniella Bianchi describes Ashwell as 'an English, Catholic controversialist' in connection with his anti-Socianian* Oxford publication, *De Socino et Socinianismo Dissertatio* of 1679. [585] One assumes that his presence was further valued as Sir Anthony and his family met the challenges of infant mortality, family disputes and ultimately Sir Anthony's final illness and death together with the mental health problems that may have plagued his wife Mary. Whilst no doubt theological discussion and debate were a part of Sir Anthony's day to day contacts with Ashwell we have no evidence to suggest that such conversations played an unusually significant part in discourses at Hanwell, unlike, for example, the earlier Great Tew circle. [586]

A serious issue in terms of establishing Sir Anthony's credentials as the patron of a 'New Atlantis' is that from 1660 onwards we have no other instance of his

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[583] Philip Dixon, 'Ashwell, George (1612–1694)', *ODNB*.

[584] Nicholas Tyacke, 'Religious Controversy', in Nicholas Tyacke, (ed.) *The History of the University of Oxford, Vol. IV Seventeenth-Century Oxford* (Oxford, 1997), p. 595.

[585] Daniella Bianchi, 'Some Sources for a History of English Socinianism*, A Bibliography of 17th Century English Socinian Writings', *Topoi*, vol. 4 (1985), p. 112.
* 'A Christian religious movement and doctrine characterized by antitrinitarianism, rationalism, and denial of the divinity of Jesus'. *OED*

[586] See for example Michael Langford, 'The Great Tew Circle', *Athens Journal of History* vol.5 no. 4 (2019), pp. 247-58.

playing host to, or even making contact with, any of the many individuals who would undoubtedly have shared his interests. Andrea Rusnock notes, of the Royal Society, that 'Communications from far-flung correspondents became part of the Society's practice following Henry Oldenburg's initiative in the 1660s and 1670s.' [587] However extensive that correspondence may have been Sir Anthony does not appear to have participated in any of it. Indeed one might have expected him to have become an early member of the Royal Society, but he did not. The issue of secrecy is one that must be confronted in any attempt to explain the vanishingly low profile of Sir Anthony's 'new Atlanteans'.

Many authors have commented on the way both scientific practice and thought were advanced in the early modern period by a move towards greater openness and collaboration. In writing of the change from alchemy to chemistry Clay Shirky remarks:

> The problem with alchemists was not that they failed to turn lead into gold; the problem was that they failed uninformatively. Alchemists were obscurantists, recording their work by hand and rarely showing it to anyone but disciples. In contract [the chemists] shared their work, describing and disputing their methods and conclusions so that they all might benefit from both successes and failures to build on one another's work. [588]

As progress was made from loose arrangements of friends and colleagues meeting in coffee houses and each other's homes to the more formal setting of colleges and

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[587] Andrea Rusnock, 'Correspondence Networks and the Royal Society, 1700-1750', *The British Journal for the History of Science*, vol. 32, no. 2 (1999), p. 156.

[588] Clay Shirky, T*he Invisible Colleg*e, http://www.msuedtechsandbox.com/MAET/year3-2011/wp-content/uploads/shirky.bw_.pdf , accessed 12 January 2021.

lecture theatres this trend towards openness became codified. Henry notes the quasi-legal 'importance of public witnessing of experimental results, emphasised by Boyle and other fellows of the Royal Society as a guarantee of the reliability of the Society's pronouncements'. [589] Given this and the many avenues open for publication, or at the very least correspondence, it is hard to reconcile Plot's claim for Hanwell as the 'New Atlantis' with the apparent lack of any communications from or to Sir Anthony or any other references to science based activities. It is true that despite the new openness there remained something of a tradition of secrecy with some experimentalists continuing to operate *sub rosa*. Mayling Stubbs, in writing about the 'philosophical gardener of Herefordshire', John Beale (1608-83), states that, 'Beale's early astronomical studies coincided with his participation in a secret society (*sub rosa*) which included Wotton and his friend Sir Edmund Bacon'. Beale reported to Hartlib in 1659 the 'phansical discourse' on angelic cosmology that he had heard 'when wee were all undr the Rose'. [590] One advantage of meeting secretly was that the participants frequently felt themselves to be freer to indulge in fancy and speculation. Plot himself was less than forthcoming about aspects of his chemical preparations although, as Anna Marie Roos notes, his 'secrecy had largely to do with the economic necessities of his position'. [591] Nevertheless the tendency was towards what Long describes as 'collaboration and communication between practitioners, learned humanists, other university-educated men and ruling elites'. [592] One aspect of

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[589] Henry, *The Scientific Revolution*, p. 102.

[590] Mayling Stubbs, 'John Beale, philosophical gardener of Herefordshire', *Annals of Science*, vol. 39, no. 5 (1982), p. 470.

[591] Anna Marie Roos, 'The Chymistry of "The Learned Dr Plot" (1640–96)', *Osiris*, vol. 29 , no. 1 (2014), p. 89.

[592] Long, *Openness, Secrecy, Authorship*, p. 246.

this was the loose grouping of virtuosi around Robert Boyle in the 1640s known as the Invisible College. Charles Webster noted, 'straightforward identification of the Invisible College is ruled out by the paucity of evidence'. [593] However, the sense here is that this was a college that was free from material boundaries rather than one that was confidential, indeed communication was at the heart of their association. We can speculate on what may have caused Sir Anthony to go against this trend and be less than forthcoming about any science related activities. The fact that Richard Allestree successfully maintained a veil of secrecy over his authorship of his 1657 publication, *The Whole Duty of Man* may have inspired Sir Anthony to operate in a similarly clandestine fashion. In this context he may have been sensitive to the opinions of his neighbours. In his preface to *The Natural Historie of Wiltshire* Aubrey described his own motivation: 'I was carried on with a secret [strong] impulse to undertake this Task; I know not why bundles for my own private pleasure; Credit there was none, for it gets the contempt [disrespect] of a man's neighbours. But I could not rest till I had obeyed this secret call.' [594]

A further consideration that may have inspired a tendency to obscurity is that aspects of the deliberations of Sir Anthony and his friends may have embraced 'forbidden' topics related to the occult and especially the art of astrology that, as we have seen, was of particular interest to Richard Allestree. At its height in the sixteenth century Keith Thomas suggests that 'it was less a separate discipline than an aspect of

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[593] Charles Webster, 'New Light on the Invisible College - the Social Relations of English Science in the Mid-Seventeenth Century', *Transactions of the Royal Historical Society* , vol. 24 (1974), p. 19.

[594] Quoted in Frank, 'Science at Commonwealth Oxford', *Notes and Records of the Royal Society of London*, p. 205.

a generally accepted world picture', and thus part of everyday life, in much the same way as it is in present day India. [595] However, as the seventeenth century wore on two challenges began to assail it as a pursuit: a puritan distaste for things 'magical' and the growing appeal of a more rationalistic understanding of the universe. There was no doubt a considerable degree of equivocation on the part of the parliamentarian and puritan establishment towards astrology during and after the Civil War. Astrologers such as William Lilly were consulted by both sides during the conflict. [596] Indeed Nicholas Nelson argues that, 'heretofore they had been kept at the periphery of respectable society however, the new Puritan government appeared to favour and even foster their new status'. [597] This is evidenced by the authorisation and popularity, especially in London, of a range of astrological almanacs. However, there was also a distinct trend through the 1650s towards the condemnation of such 'ungodly' acts as divination. As far back as 1561 John Calvin (1509-64) had attacked astrology in his *An Admonicion against Astrology*. [598] Whether they saw them as professional rivals or practitioners of the black arts many clergy were vociferous in their condemnation of astrologers. [599] Whilst there was no great opposition to astrology at Oxford, Sir Anthony may have been subject to scrutiny by ministers closer to home and hence not advertised his interests too widely. Beyond theological niceties there was also a growing sense that astrology had 'had its day'. Peter Wright describes the period from

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[595] Keith Thomas, *Religion and the Decline of Magic* (London, 1991), p. 338.

[596] See for example Anne Geneva, *Astrology and the Seventeenth-Century Mind. William Lilly and the Language of Stars* (Manchester, 1995).

[597] Nicholas Nelson, 'Astrology, *Hudibras,* and the Puritans', *Journal of the History of Ideas*, vol. 37, No. 3 (1976), p. 522.

[598] John Calvin, (translated by Mary Potter) 'A Warning Against Judicial Astrology', *Calvin Theological Journal*, vol. 18 (1983), pp. 157- 89.

[599] See Thomas, *Religion and the Decline of Magic,* Chapter 12, pp. 425-40.

the sixteenth to the late seventeenth centuries as one 'in which England became a leading nation in scientific advance, and during which astrology largely lost its hold among the educated'. [600] However, the mechanism whereby this transformation was effected is not immediately apparent. Wright comments how little publicly stated criticism there was of astrology by the scientific luminaries of the time, a notable exception being Seth Ward, who, in 1654, proclaimed it to be 'that ridiculous cheat made up of nonsense and contradictions'. [601] In general there seems to have been a dwindling away in the face of new social realities and intellectual preoccupations. If astrology had been one of Sir Anthony's interests he may have felt silence was the only response to growing indifference to, or worse, mockery, about the subject.

Of course, a more prosaic explanation could be that Sir Anthony simply preferred the quiet life and his perspective may well have been that outlined by David Beck: 'Common reactions among period intellectuals were an avoidance of (public) conflict, and a strong desire to preserve the world immediately around them, once the situation made it possible.' [602] So it is that any measures to populate the communities at Tangley or Hanwell remain intensely speculative.

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[600] Peter Wright, 'Astrology and Science in Seventeenth-Century England', *Social Studies of Science*, vol. 5 (1975), p. 400.

[601] Seth Ward (published under the anonymous authorship of 'H.D.'), *Vindicae Academiarum* (Oxford, 1654), p. 30.

[602] David Beck, ' County Natural History: Indigenous Science in England, from Civil War to Glorious Revolution', I*ntellectual History Review*, vol. 24, no. 1 (2014), p. 72.

The Aftermath, the Family and estate after 1675

In June 1675, following Sir Anthony's death, there was the potential for the family to be disrupted by an acrimonious dispute resulting from the marriage of his brother and heir, John, to a lodging house keeper from Dunkirk. Beesley gives a succinct account of events which had their roots back in the late 1650s when Richard Allestree was engaged in facilitating correspondence between the exiled Prince Charles and Royalist supporters at home:

> One of the organs of communication was a Mistress Ann Booth, an English woman resident at Dunkirk, who seems to have been a lodging-house keeper. Sir Anthony's brother John Cope was in command of a troop at Dunkirk at the time of the Restoration: he married a Mistress Ann Booth, who appears to have been a person of low origin, since in the pedigrees of the Cope family she is described as being the daughter of *Mr.* Philip Booth. [603]

It seems that offering loyal and possibly dangerous service to the king in waiting was insufficient to raise her status in the eyes of the 4th Baronet. Sir Anthony's will dated 22 January 1674 begins with a significant bequest: 'Unto the Poore inhabiting in Hanwell and the neighbouring Country and Roundabouts the summe of fortie pounds to be appointed amongst them.' [604] He goes on to list his manors of Hanwell, Hardwick, Drayton, Bruern, Tangley and Shelswell in Oxfordshire as well as a variety of other properties including quays, wharves and warehouses in the city of London and then writes of measures 'for the providing […] for Mary my dearly beloved wife and for the better securing of the payment of my debts […] and the settling my said

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[603] Beesley, *History of Banbury*, p. 473, fn. 28.

[604] TNA, Will of Sir Anthony Cope, PROB 11/350/249.

Mannors and Lands to continue in my Name and Family so long as it shall please God'. As trustees he appoints 'my worthy and good Friends Sir Francis Fane the Elder, Knight of the Bath, Sir Thomas Chambourlaine Baronet, Sir Edmund Bray knight, William Thursby Esq, Dr. Richard Allestree Provost of Eaton Colledge, William Garnacke esq, John Draper the elder gent'. The situation they were charged with managing must have been a challenging one. His brother John was left use of the properties for the term of his natural life, apart from the manor of Drayton that went to Mary; however, it was made clear that sons of Sir John would only inherit providing they were 'other than from that issue of said Anne Booth'. Beesley ascribes this hostility to the fact that Booth was of 'low origin' but there could have been other unknown factors at play here. Plot records that John had some continuing involvement in his brother's interests and indeed Sir Anthony's will does leave to 'Brother John Cope my Studie of Books'. Presumably these formed the core of what was later catalogued in 1898 as the library at Bramshill. [605] Beyond that he also made bequests to 'Richard Allestree fifty pounds, Dr. Say Provist of Oriele Colledge, formerly my Tutor fifty pounds, in remembrance of my love to them'. It may be significant that Robert Plot is not listed either as trustee or legatee but of those others mentioned in the will the playwright Sir Francis Fane (d. 1691), Sir Anthony's first cousin once removed, had been involved in a drainage scheme in the fens and was elected a member of the Royal Society in 1663. [606] Beesley takes up the story:

> It appears that Hanwell continued to be the residence of the Hon. Lady Cope, the widow of Sir Anthony, until her death in 1714. Grief for the loss of her husband and children seems to have deprived this lady of her reason;

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[605] Hants. CRO, *Two Volume Catalogue for Bramshill Library, Jul 1898,* 43M48/2017-2018.

[606] J. P. Vander Motten, ' Fane, Sir Francis (d. 1691)', *ODNB*.

> and, from an expression in the Register of Hanwell, it would appear that the Hon. W. Spencer, her brother-in-law, was appointed to her committee under a commission of lunacy-*Information from the Rev. W. H. Cope*. [607]

It is clear that there was a measure of both dispute and co-operation between Mary Cope and her brother-in-law, Sir John, after Sir Anthony's death. On the 20 November 1675 an agreement was sealed to submit to arbitration outstanding disagreements regarding her late husband's personal estate. [608] Subsequently a further agreement between them, dated 3 December 1675, ironed out a variety of issues relating to the settlement of debts and the disposal of Sir Anthony's personal estate. Perhaps most tellingly Mary surrendered her claim to her late husband's 'instruments' in exchange for fifty guineas whilst retaining at Hanwell 'all armour and standards' to be surrendered at her death. [609] This not only demonstrates Sir John's interest in his brother's scientific pursuits but may also be the source of the instruments he was to leave to his son in his will of 1713. It also helps explain Plot's favourable comments about him despite the difficulties of inheritance.

We cannot be sure what Mary's state of mind was at this juncture although a draft of a letter she wrote, presumably late in 1675, exists concerning financial matters, including the stopping of a legacy to John Draper, one of her husband's trustees, pending a conversation with Sir John. [610] According to an anonymous writer who transcribed it, the note was poorly drafted: 'The whole letter is very blotted and

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[607] Beesley, *History of Banbury*, p. 508, fn. 12.

[608] Hants. CRO, *Agreement between Mary Cope and Sir John Cope, 20 Nov 1675*, 43M48/389.

[609] Hants. CRO, *Agreement between Mary Cope and Sir John Cope, 3 Dec 1675*, 43M48/391.

[610] Hants. CRO, *Part of letter from Dame Mary Cope*, 43M48/387.

corrected'. [611] This, along with the slightly rambling contents of the text may be evidence of an unsettled mind or simply someone under pressure or in a hurry. However, there also survives a note written by her prior to Sir Anthony's death regarding a 'demand that persons withholding any writings belonging to her, or writings falsely made concerning her estates, will forfeit lands to which they had real right' and endorsed with the contemporary anonymous comment: 'a very extravagant silly nonsensical paper written by Lady Cope in Feb 1674'. [612] There appears to be something of an air of distraction in both of these missives which may have been retained as evidence of Mary's deteriorating mental health. Whatever the case a set of court papers regarding her committal as a lunatic exists from 30 January 1677. [613] Beyond that, from 1678 onwards, there are a series of receipts from Henry Guy, 1678 -81, William Spencer, 1681-88, Elizabeth Spencer, 1688 and Thomas Wharton 1689 relating to their role on the 'committee of the body of Dame Mary Cope'. [614] Henry Guy (1631-1710) was a lawyer and groom of the Bedchamber to Charles II and may have been a court appointment pending a final settlement. Elizabeth Spencer was half-sister to Mary and married to William Spencer, son of the 2nd Baron Spencer of Wormleighton. Those charged with her care were probably not resident in the parish although a memorandum in the church register for 4 April 1686 records the loan of a large silver chalice and paten together with payment for setting up communion rails by 'The Honble. Will. Spencer Junr. Esqr. Committee of the Body and Estate of the

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[611] A/TC, Anonymous, Century Note Book entitled *Transcript from some of the Cope papers in the Bodleian at Oxford* , The Cope family papers were later transferred to the Hants. CRO.

[612] Hants. CRO, *Letter and Disclaimer by Lady Mary Cope, Feb 1675*, 43M48/386.

[613] TNA, *Chancery Inquisition, Cope, Mary (lunatic)*, C142/734/65.

[614] Hants. CRO, *Receipts from Henry Guy and his successors, 1678-1689*, 43M48/413-437.

Lady Mary Cope'. [615] Something of a crisis erupted in February 1689 when there are recorded

> Proceedings upon the petition of Sir John Cope. Stating that Lady Cope, the widow of his late brother, Sir Anthony Cope, is a lunatic, and that upon the lands in her jointure great waste has been done, these being upon part of the petitioner's estate in Oxfordshire. Prays that she and the estate may be committed to the custody of Thomas Wharton comptroller of the household. Granted. [616]

This suggests that all was not well with the management of the estate in Sir John's absence, although it could equally have been a ploy to increase his influence over the property. Even so, it may give some context for the destruction of the 'House of Diversion' and associated features.

As well as residing at Bruern, Sir John Cope had a property in Chelsea, from where he was able to maintain links with the scientific community in London. In November of 1688 Robert Hooke records in his diary meeting him at Jeremy's Coffee House in the company of Sir Christopher Wren and others. [617] Plot evidently hoped that the 'learned and curious artist' John would follow in his brother's footsteps as a patron of scientific enquiry. [618] Given this the likely abandonment of the garden at Hanwell and its devices seems particularly unfortunate. The whole episode

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[615] Oxfordshire History Centre, Parish of Hanwell, *Church Registers Vol.1 (1586-1753)* PAR122.

[616] Proceedings upon the petition of Sir John Cope (February 1689), http://www.british-history.ac.uk/cal-state-papers/domestic/will-mary/1689-90/pp1-11, accessed 11 January 2021.

[617] Robert Hooke, *Diary*, quoted in Robert Gunther, *Early Science in Oxford,* vol. 10 (Oxford, 1935), p. 75.

[618] Plot, *Natural History*, Tab. II.

regarding his marriage and inheritance clearly troubled Sir John deeply and in his will of 1713 he made the following statement:

> And now before I proceed towards the disposal of my temporal estate […] I think it fit to declare something of my past and present circumstances to the world […] after having spent many years of my youth in travel beyond the seas in France, Italy, Germany, Flanders and Holland, I returned home with a great desire and a firm resolution to marry, but with consent and approbation of my friends and relations and in order there unto proposed several matches to my elder brother Sir Anthony Cope then living but he not complying with any of them nor consenting to make any settlement upon me in marriage whereby I may better my fortunes (tho his own children were all dead) I did there upon contract myself to Mss. Anne Booth a neighbouring gentlewoman and took her to wife but very privately lest my brother should come to know it he might have been so far displeased as to have given his estate wholly from me. [619]

This clearly places the onus for the family dispute on Sir Anthony's refusal to consent to earlier proposals but the fact that Anne Booth is described as a 'neighbouring gentlewoman' is perhaps being economical with the truth. He goes on to say that:

> I understood by his will how unkind he had been in making me only tennant for life and disinheriting my children I then had or should have by my said wife I cast about how to make the best of a Bad Market and finding that he left me his Estate only for my Life yet I had a power of committing wast and of making a joynture to my said wife or any other wife I should after marry, of the whole estate or any part of it by which means I thought I might bring the person on whom the estate was settled after me to a Composition (as accordingly I did) upon his marriage with Sir Thomas Fowles daughter.

The heir he is referring to is his cousin, Jonathan Cope (1664-94) who went up to Christ Church in 1681 and married Susannah Fowle daughter of a London goldsmith in 1688. As Sir John stated he was trying to 'make the best of a bad market' by being accommodating to the other branches of the family, however, this was within the

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[619] TNA, Will of John Cope, PROB 11/609/21.

context of him having 'the power to commit wast'. William Blackstone in his *Commentary on the Laws of England*, first published in 1765, gives as instances of committing waste, 'pulling down their houses, extirpating their gardens, ploughing their meadows and cutting down their woods' or more generally, 'Whatever does a lasting damage to the freehold or inheritance is waste.' [620] Further legal clarification comes in the 1808 case of Williams v. Williams where Lord Chancellor Eldon cites Edward Coke who earlier in the seventeenth century stated that the 'power of committing waste […] proves that a tenant for life without impeachment of waste has as great a power to do waste, and to convert the property at his own pleasure, as tenant in tail had'. [621] This is clearly important in considering the fate of the garden in the latter part of the seventeenth century. We have no specific documentation relating to Hanwell but a series of valuations and related papers concerning timber and coppice wood on Bruern and Tangley estates survive indicating there was a determined exploitation of this particular resource. [622]

Sir John continued his will by noting that he had, 'with my said wife lived faithfully ever after (being above forty yeares) producing a single daughter, who died, and seven sons, of who four are living'. He then proceeded to consider the portion he could pass on to his children. His oldest son John received most of his assets but his second son, Anthony, in addition to five thousand pounds, is given 'one thousand pounds I formerly sent him to Constantinople'. There follows a lengthy list of items,

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[620] William Blackstone, *Commentaries on the Laws of England in Four Books* (New Jersey, 2007), p. 1762.

[621] Francis Vesey, *Reports of Cases Argued and Determined in The High Court of Chancery 1808 -1809* (Philadelphia, 1822), p. 428.

[622] Hants. CRO, *Valuations and related papers concerning timber and coppice wood on Bruern and Tangley estates* 43M48/469-479.

primarily silver ware, that he distributed amongst his family including an exotic 'letter case formerly sent me from Constantinople with my Arms embroidered on it in Gold'. There are further mentions of items that may have been part of his brother's collection but must also have reflected Sir John's own continuing interests:

> Item I further give to my said oldest son Sir John Cope the immediate possession after my death of all my books mathematical instruments Optik glasses Marking Tools and other such like things in my Study Lumber Rooms Forge House and elsewhere about the house by me commonly called lumber or Gimcracks and I do advise him to appropriate a Room or two upon the first floor of his house for a Repository (or as I used to call it a Repository) to keep them in for a Diversion sometimes (as they were to me in my younger days) to keep him from idleness or being many times worse employed as some of my predecessors have often been while I have diverted myself with these or such like Trifles and much more to the satisfaction and health both of Body and mind and the increase of my estate. [623]

This is the kind of statement that one might have expected to have read in Sir Anthony's will had he had a son to whom he could have passed on his instruments and interests. The fact that it is made by Sir John is a strong indication that Plot's description of him as the 'equally Ingenious Brother Sir *John Cope*, the Heir of his Virtues as well as Estate' is an apt one and may also provide a context for his 1675 London sighting in the company of Robert Hooke and John Ray. His son John who was the recipient of the collection of scientific 'lumber or gimcracks' matriculated at his uncle's old college, Oriel, in 1689 and purchased Bramshill House with a loan from his father in 1699. Pevsner remarks that Bramshill 'is one of the largest Jacobean Houses. What Bramshill has in common with the other grandest Jacobean Houses - Hatfield, Audley End, Holland House Charlton House Greenwich - is the concentration on a really spectacular piece of display with few decorative

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[623] His use of the term 'diversion' is interesting given the naming of the 'House of Diversion' at Hanwell.

embellishments otherwise.' [624] No doubt there would have been ample spaces for a 'repository' for his 'gimcracks'. The old Castle at Hanwell must have seemed rather cramped and old-fashioned to say nothing of the unfortunate detention of his aunt there. However, Plot, writing in 1692 to Edward Lloyd, 'Keeper of the Museum in Oxon', says, of the fossil illustrated in his *Natural History,* that, 'I hope it still remains at the Lady Cope's at Hanwell'. [625] It is possible that elements of Sir Anthony's collection were retained there until a fire and consequent partial demolition of the Castle late in the eighteenth century. Books from the library from Hanwell were transferred to Bramshill where they remained until their sale at Sothebys on 4 March 1913. [626]

Figure 54 Bramshill house and park, view from the south

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[624] Nikolaus Pevsner and David Lloyd, *The Buildings of England Hampshire and the Isle of Wight* (London, 1985), p. 138.

[625] Robert Plot, Letter to Edward Lloyd, (1692) quoted in Robert Gunther, *Early Science in Oxford*,, vol. 12 (London, 1920), p. 391.

[626] Sotheby, Wilkinson & Hodge, *Catalogue of Valuable Books and Manuscripts, Recently the Property of Sir Anthony Cope, Bt. Selected from the Library at Bramshill Park, Winchfield, Hants Which Will be Sold at Auction ... on Tuesday, the 4th of March, 1913.*

CHAPTER 6, AT HANWELL HOUSE, THE ARCHAEOLOGY

The Archaeology of the Gardens 1600-1660

By the end of the sixteenth century the garden and park at Hanwell are likely to have featured fishponds, probably some medieval survivors alongside the larger pool mentioned in the will of 1525. [627] Within the wider confines of the deer park there are likely to have been boundary banks, terraces, walkways and some formal planting, probably adjacent to the house. However, the argument to be considered here is that all further significant developments belonged to the seventeenth century. A particular difficulty in considering the gardens at Hanwell is the lack, except for one important instance, of any firm dating evidence. Most of the conclusions drawn about sequencing within the garden are on the basis of parallels with other contemporary gardens and the known interests and activities of members of the Cope family, especially Walter. The assumption, based on the trajectory of the family's finances, is that the bulk of the large scale civil engineering to create the water garden was undertaken early in the seventeenth century. This produced the setting for Sir Anthony's later additions post-Civil War.

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[627] See above, p. 44.

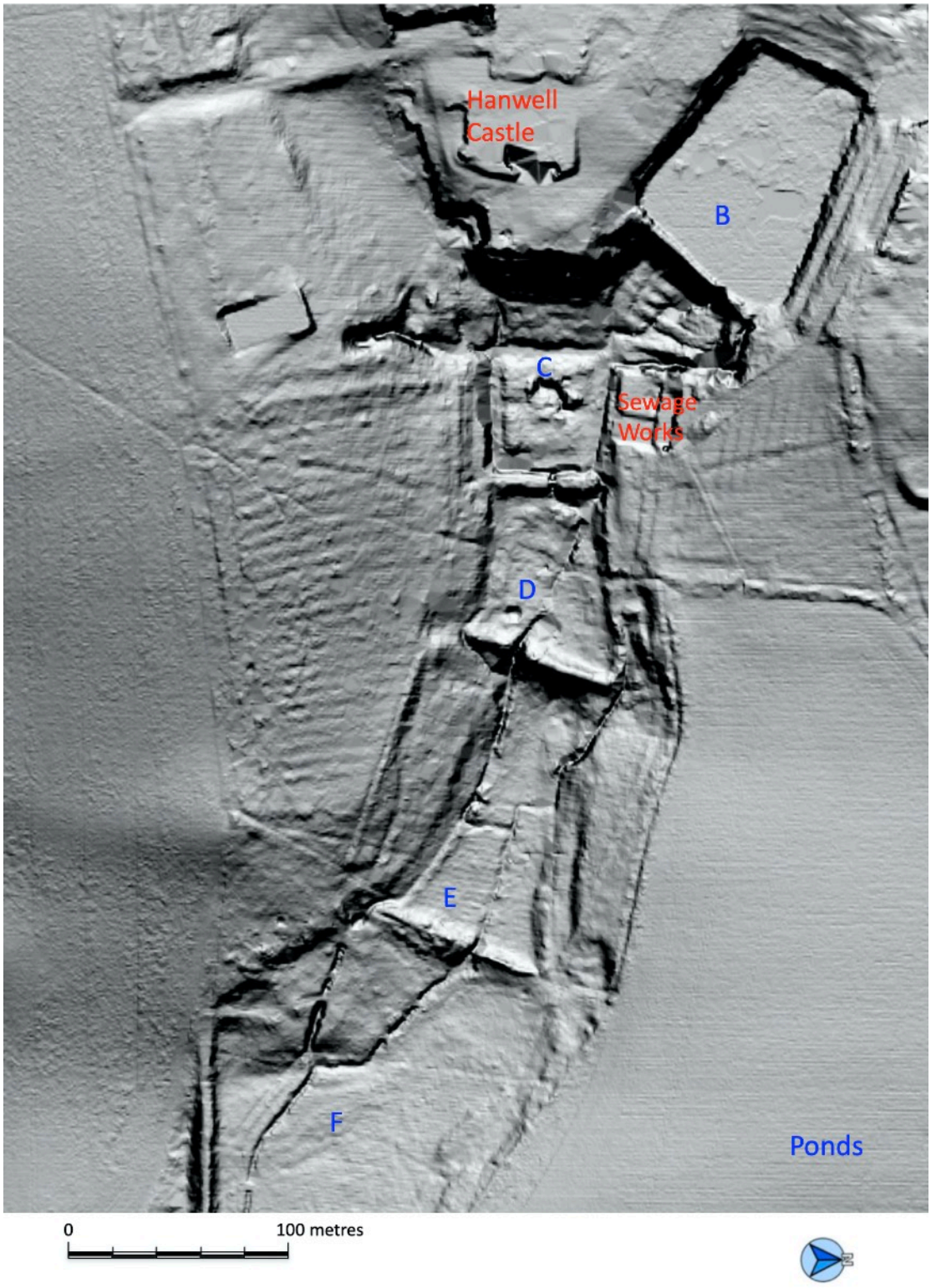

Figure 55. Hanwell, LIDAR image of the gardens.

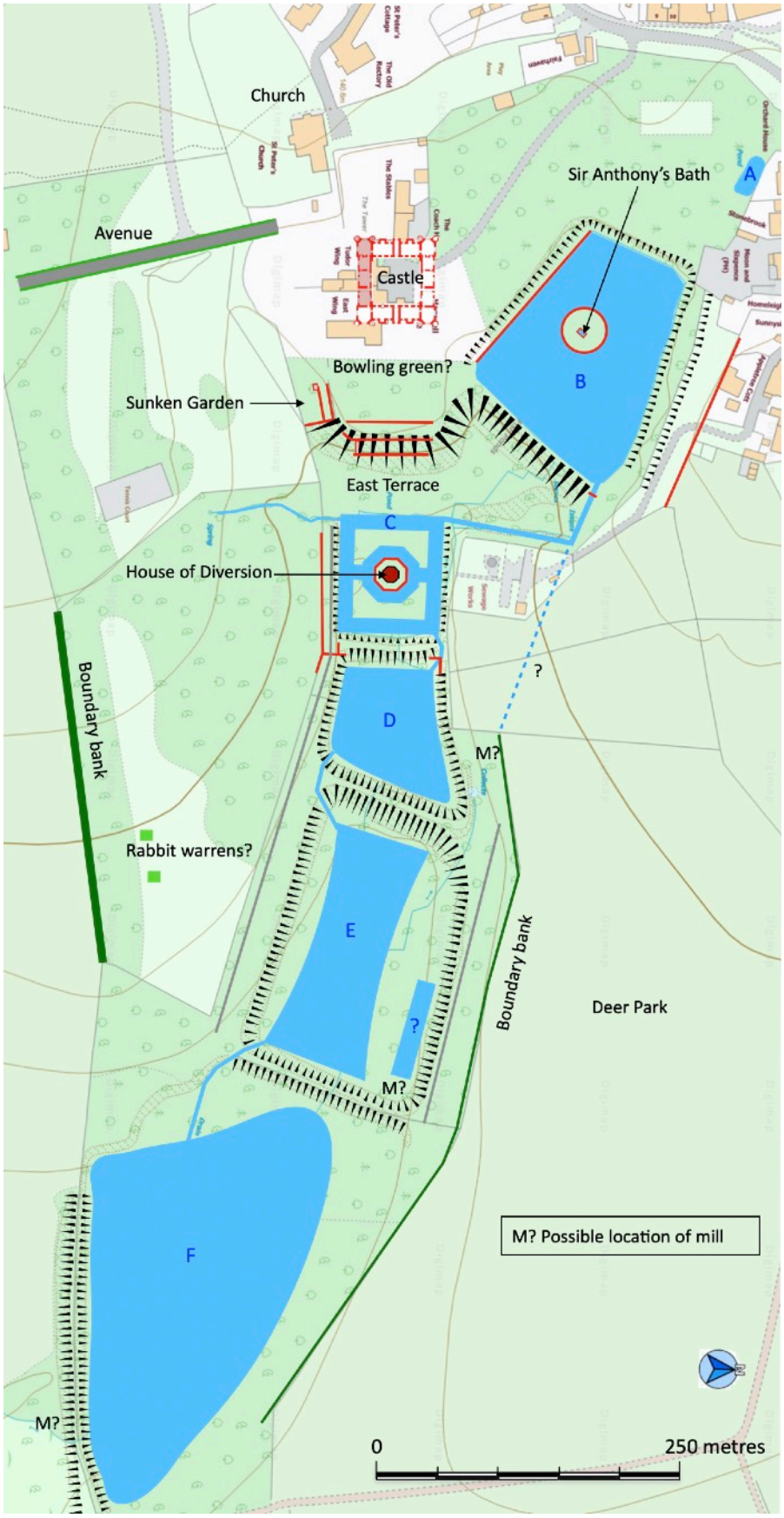

Figure 56 Hanwell, reconstructed garden plan

The methodology involved in studying the garden included looking at mapping evidence and LIDAR images (Figure 55). This was complemented by ground based survey interspersed with selective excavation of identified features that has extended over nearly a decade and involved something in the region of 1,500 day equivalents of labour on the part of the author and numerous volunteers (Figure 56). All field work was undertaken to the relevant professional standards as laid down by the Chartered Institute for Archaeologists. [628]

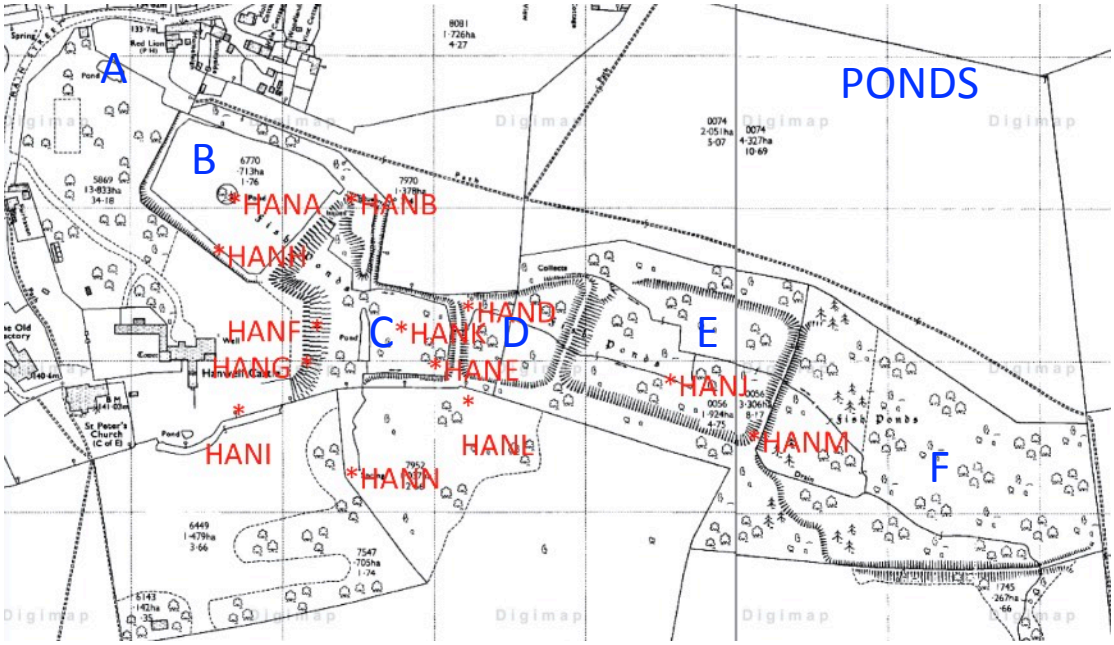

Figure 57, Hanwell, the garden earthworks with ponds and dig sites 2011 to 2021. Background from six inch to the mile OS map from the 1970s.

[628] The relevant publications are: Chartered Institute for Archaeologists, *Standard and guidance for archaeological excavation* (2014), *Standard and Guidance for the archaeological investigation and recording of standing buildings or structures* (2019) and *Standard and guidance for the collection, documentation, conservation and research of archaeological materials* (2014).

Figure 58. Hanwell, the lake (Pond B) looking west towards the island.

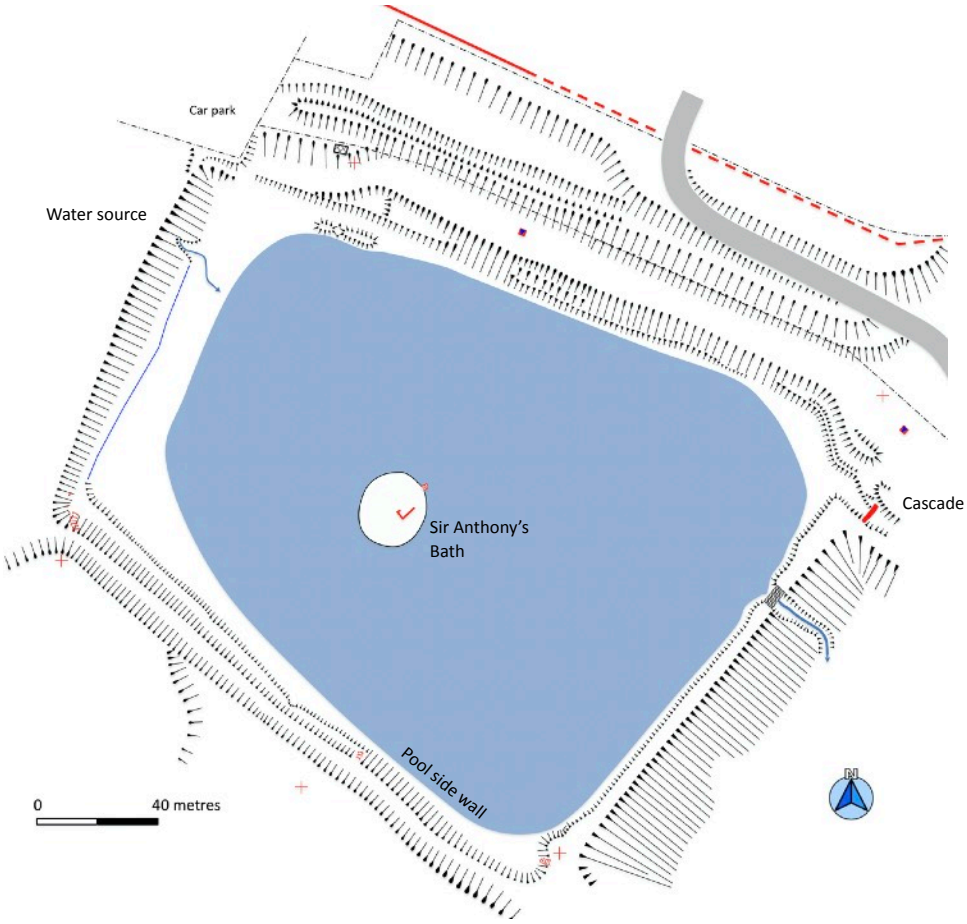

Figure 59. Hanwell, plan of the lake (Pond B) and associated earthworks.

Figure 60. Hanwell, HANH 15, Lake (Pond B) side wall looking south.

The surviving remains of the water gardens at Hanwell cover nearly 8 hectares and extend in an east-west line for just over 750m. Although most of the valley is wooded early OS maps show that in the nineteenth century some of it was laid down to pasture. This account will begin at the highest point of the garden to the west and follow the flow of the waters as they make their way through the park. The most obvious feature is the small lake (Pond B) just 50m north of the former Castle (Figures 58 and 59). The lake which is aligned roughly north west to south east is around 100m long by 80m wide and bounded along its south east side by a large earth dam up to 6.4m high. The lake is fed from a spring on the village High Street which is brought under the road and into the park to fill a small pond known locally as 'the Horse Pond'(Pond A). From there it is piped into the northern corner of the lake. Excavations in January and March 2015 (HANH) revealed that the side of the lake nearest to the Castle had been defined by a well constructed stone wall although there was no evidence of such a feature around the rest of the perimeter (Figure 60). There

Figure 61. Hanwell, HANH15, Seal from wine bottle and neck of the Bartman bottle.

was little silting built up above the puddled clay bottom of the lake but what silts there were contained significant finds from the seventeenth century including the neck of a Bartman bottle (HANH15 001/1) and a wine seal (HANH15 001/2) with a rose emblem and the initials IM or TM, presumably from a hostelry called the Rose Tavern (Figure 61). A large stone ball (HANU St 29) was recovered from the lake bed silts closer to the southern corner and may have been part of an ornamental balustrade.

Along the north east side of the lake are two well marked terraces, the lower being around 6m wide, certainly adequate to accommodate Bacon's advice that walkways should be 'enough for four to walk abreast' (Figure 62). [629] Just to the west of the centre point of the lake is a circular island rising around 1.2m above the lake bed and some 12.5m in diameter. The perimeter was severely undercut and

[629] Bacon, *On Gardens*, p. 27.

Figure 62. Hanwell, terraced walk way on north side of lake (Pond B) looking west.

excavations in 2015 established that the original island was nearly 17m across. This contains the remains of a structure known locally as 'Sir Anthony's Bath'. [630] Even today the view across the lake towards the Castle is rather striking and it is interesting to note that whilst the prospect of the building rising above the retaining wall to the lake would have been of a quite formal built landscape the opposite view, looking out from the Castle towards the terraced walk way, would have had something of the 'wilderness' about it.

Water exited the lake by an overflow channel at the eastern corner. There would probably have been a sluice at this point but the later insertion of a stone cascade in the second half of the seventeenth century destroyed the remaining traces

[630] See below, pp. 278-9.

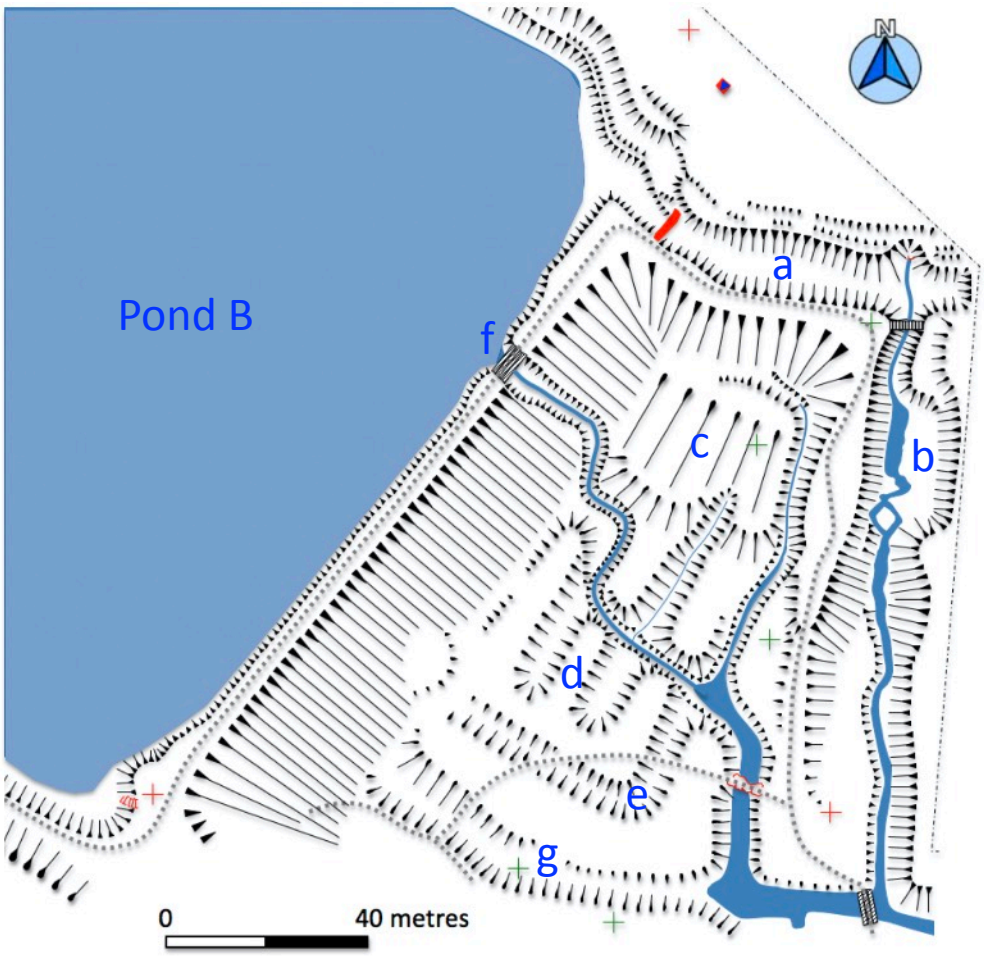

Figure 63. Hanwell, plan of earthworks east of the lake (Pond B).

of this mechanism. Earthwork evidence indicates that the channel would have continued in an easterly direction following the contour along the valley side for around 150m before feeding into a lower pond. The exact route has been masked by the construction of a sewage treatment plant. The area below the main dam to the lake contains a complex series of earthworks including to the north the original out flow channel (a) from the lake (Figure 63). This is cut by a later channel associated with a modern large diameter pipe which takes some water from the the spring in the High Street and empties it into a deep little rock cut ravine (b) which defines the eastern edge of the area. There is no dating evidence for this feature but it may be quite

recent, possibly late nineteenth- or early twentieth-century. A slope to the south of the overflow channel (c) appears to be make-up from silts, presumably dredged from the lake, and these partly obscure the three finger-like depressions to the south which have been interpreted as medieval fishponds (d). An 'L'shaped ditch to the south and east (e) may be part of this complex which has been cut through by a later overflow channel (f) reputedly dug into the top of the dam in an attempt to search for treasure within the lake in the nineteenth century. A shallow curving ditch to the south of the fishponds (g) could mark the line of the original stream that drained the valley.

Figure 64. Hanwell, HANF14, upper retaining wall to the east terrace looking west.

The south side of the valley curves round to create the bluff on which the Castle stands. The natural bank here is cut by a hollow that is worn into the face of the slope and may be the remains of an early holloway associated with the medieval settlement and the fish ponds in the valley below. Further round the slope had been terraced and excavations in 2014 established the presence of walls, walkways and stairs. A long section (HANF) towards the northern end of the terraces had a fall of around 12m. Work on it uncovered the remains of a very well built stone wall that would have supported an upper level walkway and possibly a balustrade (Figure 64). Below this was a bank which sloped down to another walk way above a further retaining wall. A final slope ended at a stone built drain. An additional small area excavation towards the southern end of the terrace (HANG) picked up the end of the upper terrace wall which terminated just before the slope turned towards the west. There was evidence of a partial rebuild here with the use of angled blocks which may have been reused. If this were the case it indicates a repair late in the seventeenth century. A secondary wall on unusually deep foundations ran down the slope from the face of the upper wall and was probably a seating for a stairway (Figure 65). No specific dating was recovered for any of the features on the eastern terrace but the lack of brick and the high quality of the masonry in the context of large scale groundworks suggests development during the early years of the seventeenth century. The overall effect would have been similar, although rather plainer, to that seen at the Villa Garzoni near Lucca (Figure 66). The levelled area between the top of the terracing and the east range of the Castle may have accommodated a conventional knot garden or parterre or possibly a bowling green.

Figure 65. Hanwell, HANG14, terrace walling and base of stair looking west.

Figure 66. Villa Garzoni, Collodi, Italy, terracing and steps.

Figure 67. Hanwell, steps in northwest corner of Sunken Garden looking west.

Immediately to the west of the south end of the east terrace is the Sunken Garden (HANI). This consists of a roughly rectangular area, around 10m by 15m and cut into the north side of a shallow valley to a depth of about 4m. The north face of that cut drops down in two terraces. The lowest is faced by a stone wall much of which has been recently rebuilt. Above that is a narrow walkway edged by an upward slope revetted with rubble after the fashion of a rockery. A curious steep little stair containing some reused stone rises in the north west corner and may be one of the

post-Civil War additions to the garden (Figure 67). Excavations in 2015 (HANI (E)) uncovered the lower courses of a dressed stone wall defining the eastern limits of the site whilst a trench dug down the full length of the western side (HANI (W)) revealed twentieth-century landscaping and debris from quarrying. Initial thoughts at the outset of digging here was that the sunken area may have been the location of a grotto or an elaborate sunken garden similar to such examples as the one at the Villa Gamberaia overlooking Florence. No traces of decorative materials such as shell were found so the question of the area's use during the early life of the garden remains an open one. Foundations dug for the rebuilding of a stone wall along the southern margin of the Sunken Garden led to excavations in 2017 (HANI (S)) that uncovered a brick-lined drain and other remnants of walling indicating further structures to the south.

Further down the valley, in an area excavated opposite the south east corner of the water parterre (HANL), there are indications, from the layout and depth of foundations, that a large, even monumental, gateway was positioned here. The complex area of walling at this point includes at least five different phases of development and is currently subject to further exploration and study. The complex, occupying the valley bottom at the point where the lesser valleys to the north and south of the Castle coincide, was first identified by earthwork survey in 2014 (Figure 68). In places the surviving earthworks were less than 30cm high and not until the LIDAR coverage for the area was accessed did the exact layout of the feature become evident (Figure 55). The form as expressed on the ground and in the LIDAR image was of a moated enclosure, about 45m square, within which was a low circular mound, 15m across, surrounded by a shallow ditch. This was linked to

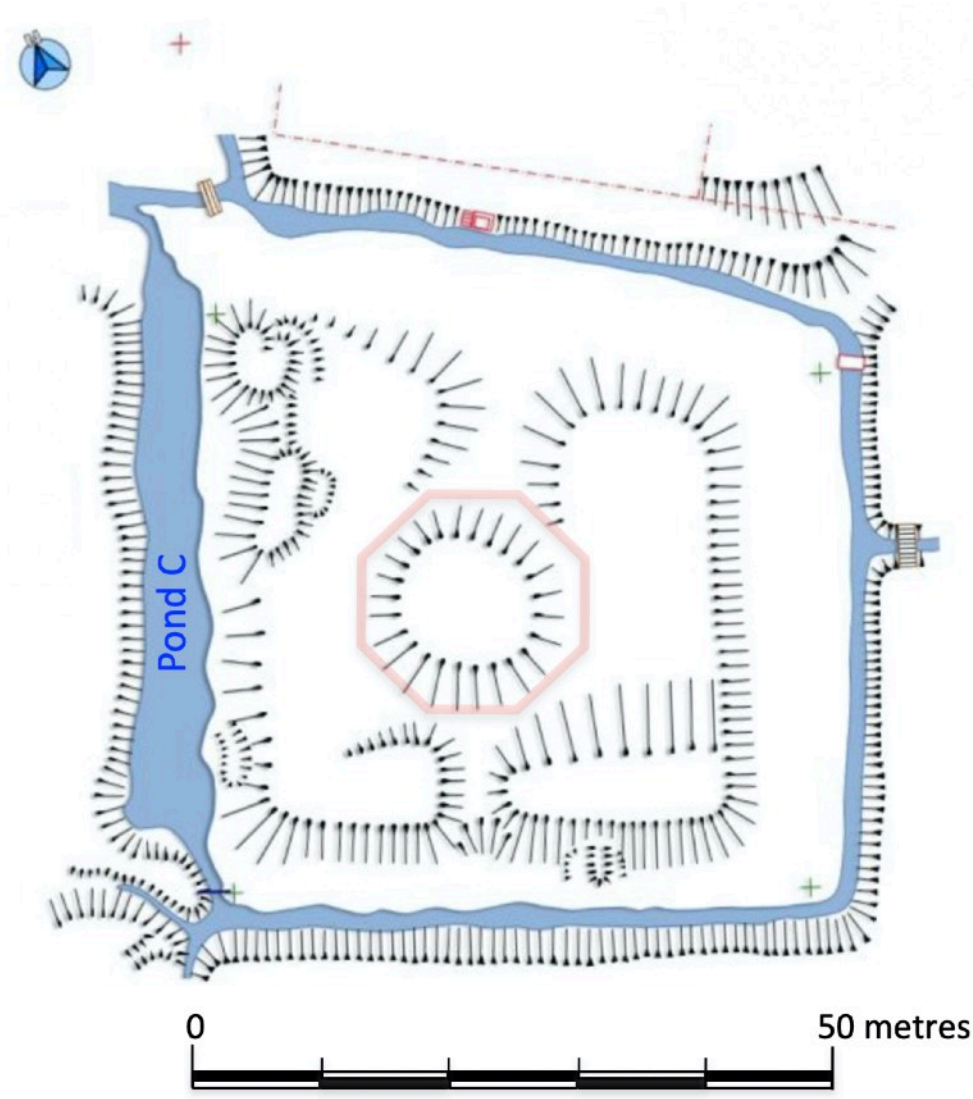

Figure 68. Hanwell, plan of earthworks on site of water parterre (Pond C) Approximate line of octagonal island as later excavated shown in pink.

the outer moat by depressions to the north and south. The western arm of the moat still holds water and is known locally as 'the Lady Pool' (Pond C). Other parts of the site have been drained by channels cut in the base of the moat and a breach made in the retaining dam to the east, probably in the nineteenth century. Water currently flows into the Lady Pool via a later channel from the lake to the north west. Another source of water would have been a spring in the south side of the valley some 65m south of

the south west corner. We came to describe this area as the water parterre on the basis of similar features seen at locations such as Raglan and Chipping Campden. [631]

Excavations from 2017 onwards (HANK) demonstrated that the site began as a square pool into which the island was inserted. As already noted the valley side to the north is taken up by a modern sewage treatment plan. To the south of the parterre is a well marked terraced walkway originally flanked by a stone wall taken down in the 1960s. The slopes above show evidence of additional terracing. A by-pass channel exists at the north eastern corner of the water parterre. An excavation was mounted here in 2015 (HAND) to examine traces of walling in the expectation that it would be part of the remains of a sluice. The wall was a blocking of that channel which, from pottery evidence, is dated to late in the seventeenth century (Figure 69).

Figure 69. Hanwell, HAND15, looking north.

[631] See above, pp. 57-9 for Raglan and p. 130-3 for Chipping Campden.

The next pool (Pond D) down the valley was held in place by a huge dam, up to 8m high at its centre point, which had created a body of water roughly 60m, east to west, by 50m, north to south. The dam is rather longer at 75m, extending to the north to accommodate the natural fall of the northern side of the valley. There is no evidence of any features within this pool, although an earth ramp drops down at its south west corner and may be a later addition to facilitate access for cultivation. The dam that retained the water for the following pool (Pond E) lies around 140m further east and, even allowing for damage by badgers, was not on the scale of the dams preceding and succeeding it. Standing at little more than 2m high it could only ever have formed a comparatively shallow pool. Terraces to the north and south gave a waisted effect to the pool's former outline. The upper section of the side of the valley to the north is marked by a ditch with bank which separates the valley from the flat land to the north and functioned to differentiate the water garden from the surrounding deer park. Running around 12m below this is a terrace which may be the line of a previous pathway. Finally below this, but aligned parallel to it, is a further broad terrace some 60m long and 10m wide which is exceptionally marshy and is defined in places along its southern edge by a low bank. This coincides with the spring line around the 120m contour and may be the result of a land slip or possibly the location of a high level rectangular pool possibly for the mill. [632]

The south side of the valley has a further series of earthworks running parallel to its east-west axis. Immediately above the terrace marking the south side of the pool is a shallow ditch and above that is a small terrace which may be a pathway. Beyond that, and marking the limit of the woodland, is a second recent field boundary that has

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[632] See above, pp. 216-9.

two large timber gate posts set in it. Above the break of slope is an area of rough pasture bearing traces of the former open fields in the form of ridge and furrow. Other small square earthworks over the ridge and furrow may be the remains of rabbit warrens referred to in a dispute of 1653. [633] The boundary to this part of the garden, noted above and clearly cutting across the earlier field system, is a broad but shallow flat topped bank flanked on either side by ditches. [634] This is very similar to perimeter earthworks seen around the small seventeenth-century parks at Wormleighton and Farnborough, both in Warwickshire, and may represent a drive or bridleway for perambulating the inner part of the gardens.

Figure 70. Hanwell, dam (Pond F) at south east end of park looking west.

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[633] TNA, C 4/58/66, Sir Anthony Cope, baronet, infant, v. [blank]: 1638 to1653. https://discovery.nationalarchives.gov.uk/details/r/C9129536, accessed 14 September 2020.

[634] See Figure 55 for LIDAR image.

The final pool (Pond F) in the sequence was maintained by a lengthy dam of nearly 150m running east to west as the stream bends to flow south towards the River Cherwell (Figure 70). It is difficult to reconstruct the original footprint of the pool as there has been a considerable amount of modern dumping of builder's waste. To the south of the east end of the dam is an area of some disturbance formerly home to pens for pheasant rearing. Further earthworks have recently been recorded here defining a rectangular area next to the stream. This may give a clue as to an alternate location of Sir Anthony's mill. The wider deer park stretches to the south and was bounded by a well made dressed stone wall, still surviving to a couple of courses as part of a low rubble strewn bank. It is less clear where the northern boundary was but remains of early walling can also be seen north of the lake as the presumed park wall approaches the village (Figure 71). All of these features are assigned to the suggested phase of garden development from the opening decades of the seventeenth century.

Figure 71. Hanwell, collapsed remains of wall on north side of garden looking north.

Two other Cope family properties exist in Oxfordshire, both of which retain evidence of early gardens. Bruern Abbey, around 30km south west of Hanwell and in the Forest of Wychwood, was purchased by the Cope family in 1610. The former Cistercian Abbey had been dissolved in 1536 although the current house was constructed around 1720. There is no evidence regarding the accommodation prior to purchase by the Copes but there must have been a house on the site as the family spent a considerable amount of time there. The main feature of interest is the remains of an elaborate, and previously unrecognised, water garden that, no doubt, was founded on monastic water ways and ponds. It has a distinctive period character involving a main pond with island surrounded by walkways and subsidiary pools and channels (Figure 72). Given the similarities with aspects of the works undertaken at Kensington and other contemporary water gardens it is possible that this was constructed by the Copes shortly after they took the property over.

Another local site in the hands of the Copes was Tangley Hall. This is around 4.5km south west of Bruern and was originally a grange of Bruern Abbey. A conveyance exists for the sale of the grange dated 2 May 1551 between Edward Cope and Thomas Briggs of Cornbury. [635] Of all the Cope properties it may be the most intact. The listing complied by English Heritage in 1987 notes:

> Farmhouse, now disused. Late C16 or early C17 with later additions and alterations. Roughly coursed limestone rubble; artificial stone slate roof with stepped coped verges to south gable end of north-south range. Basic L-plan comprising hall range aligned east-west with roughly equal-length cross-wing projecting to north on west. 2 storeys and attic. [636]

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[635] Hants. CRO, *Conveyance (counterpart bargain and sale) of Teyngle or Tyngle [Tangley] grange, Oxon,* 43M48/121.

[636] https://www.heritagegateway.org.uk/Gateway/Results_Single.aspx?uid=MOX2355&resourceID=1033, accessed 26 February 2021.

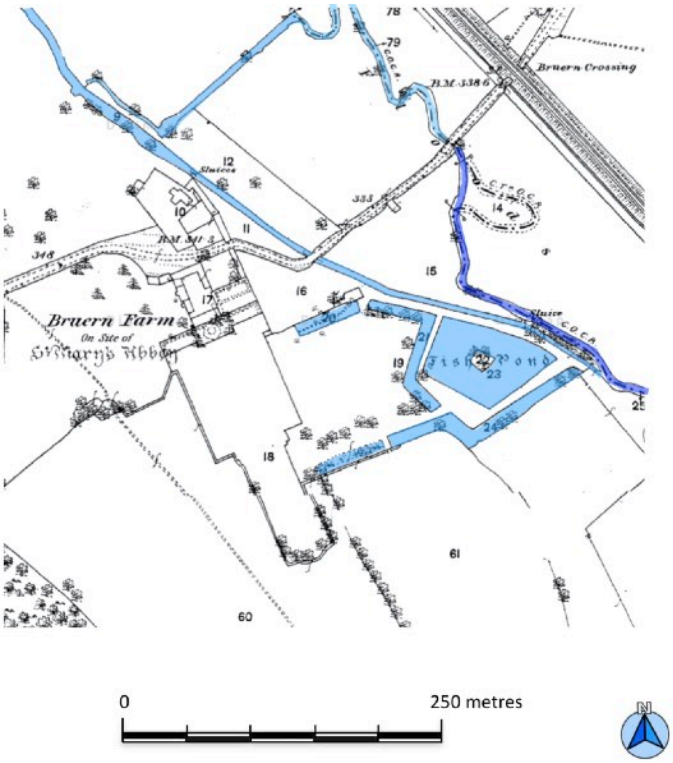

Figure 72. Bruern, plan of water gardens from 1920 OS 6 inch map.

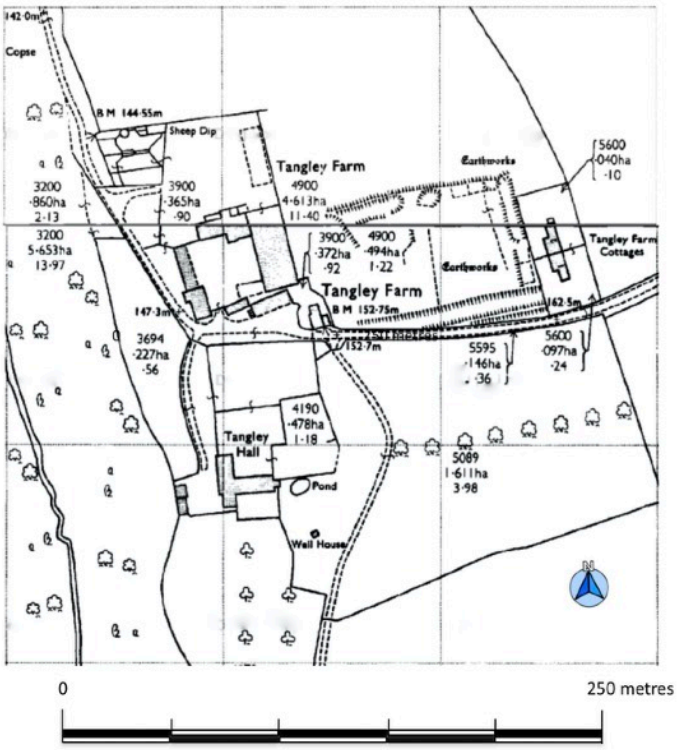

Figure 73. Tangley, plan of earthworks, from 1920 OS 6 inch map.

An early seventeenth-century well house roughly 20m south east of the hall is of particular interest. [637] Earthworks to the east, generally ascribed to the medieval grange, look far more likely to be the remains of a formal post-Dissolution moated garden, with viewing terraces and flanking walk ways (Figure 73).

In considering questions of the overall design of the Cope's early garden at Hanwell one should perhaps enquire why it lacked the rather more elaborate compositions as identified at Kensington, Gorhambury and Bruern. The answer partly lies in the terrain defined by the valley the garden occupies. Here pools can be easily created by throwing a dam across the valley. There is no need to dig out ponds and so the opportunity to create complex shapes is largely absent. In this context it is worth examining two other local parks at Farnborough and Wormleighton that share a similar approach to landscaping. At Farnborough, 5.5km to the north and just over the county boundary into Warwickshire, is a small park to the east of the present hall. Early in the sixteenth century the old moated medieval manor at the bottom of the valley was abandoned and a new house built, with much better prospects, by the Raleighs. At the same time a small park was formed centred on a chain of fish ponds, probably medieval in origin, occupying the valley bottom. The perimeter of the park was defined by a stone and brick wall and an earthwork consisting of, in places, a set of terraces and, along the crest of the hill to the south, a low broad bank flanked by ditches. [638] Wormleighton a further 5km north was previously held by the Copes until

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[637] https://www.heritagegateway.org.uk/Gateway/Results_Single.aspx?uid=MOX2356&resourceID=1033, accessed 26 February 2021.

[638] Stephen Wass, 'A Way With Water-Water Resources and the Life of an 18th-Century Park', *Industrial Archaeology Review*, vol. 38, no. 1 (2016), pp. 59 – 74.

they sold it to the Spencers in 1506. [639] A series of pools were inserted into the centre of the deserted medieval village. Again the boundaries of the small park were defined by an earthwork which could have doubled as a driveway. All three of these local examples suggest a shared practice of creating comparatively small scale parks around pools and enclosing them with boundary banks and walks that concentrated the eye on these central bodies of water whilst turning one's back on the wider landscape (Figure 74).

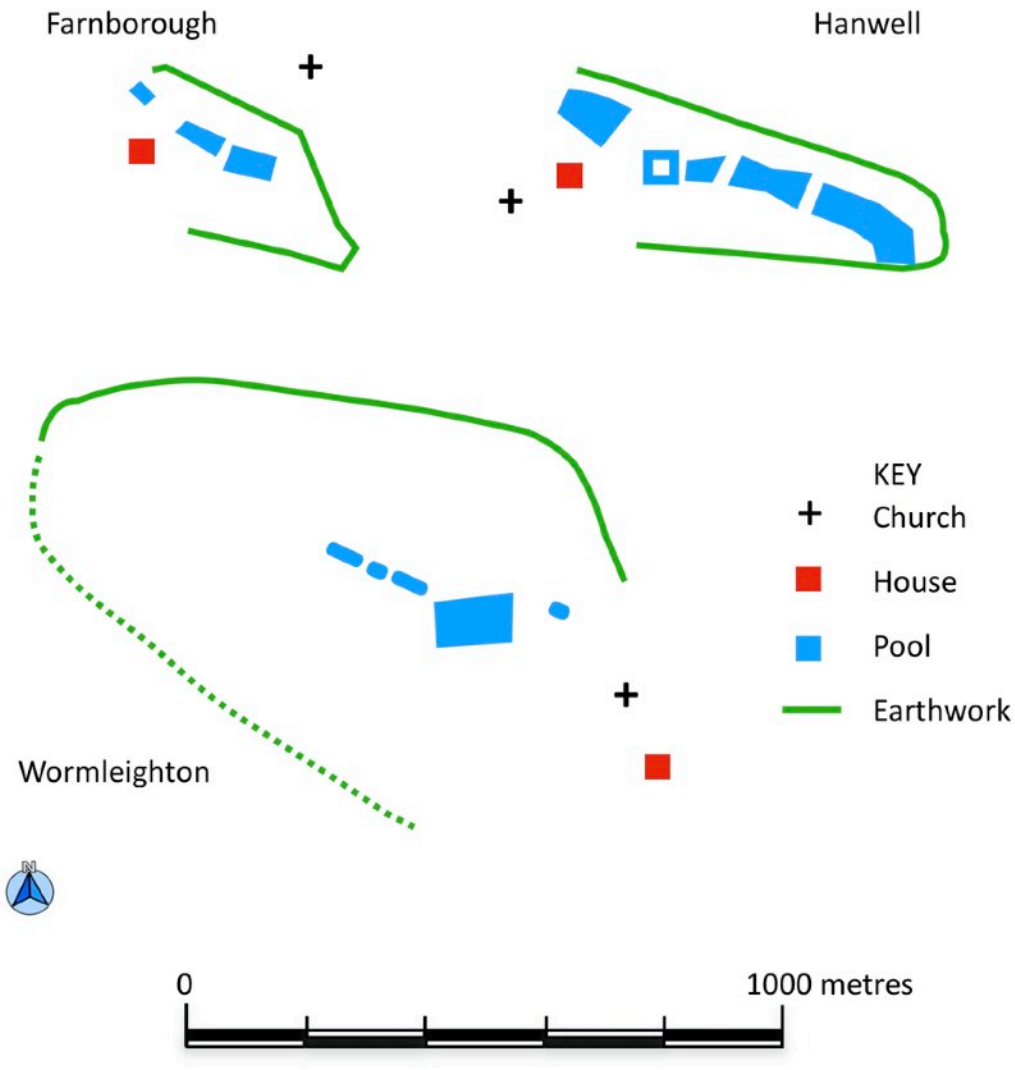

Figure 74. Small Tudor/Jacobean parks, north Oxfordshire and south Warwickshire.

[639] Thorpe, 'Wormleighton'.

Returning to the question of the dating of the primary works at Hanwell, these demanded earth moving on a huge scale and the construction of considerable lengths of walling but the dating evidence remains circumstantial. It seems unlikely, given the difficulties in getting the main residence completed, that much was done with the surroundings in the opening decades of the sixteenth century. Once the Castle was complete options would have existed for the Copes to develop the grounds. Anthony I (d. 1551) may well have picked up ideas in his continental travels regarding the design of gardens. Whilst Sir Anthony II (d. 1614), with his puritan credentials, may seem an unlikely candidate for anything as frivolous as an elaborate garden there were plenty of clerics prepared to argue in favour of such earthly paradises as models of order and good conduct. Indeed there is no necessary opposition between puritanism and expensive and fashionable consumption in this period. In establishing 'links between the activity of gardening and the social concerns and trends of the time', Jill Francis stresses how garden publications of the period emphasised hierarchies, ordering and ranking whilst at the same time celebrating the puritan virtues of the Commonwealth. [640] Alternatively, taking an approach founded on self interest, given the clear desire to curry favour with King James I, we have a perfect context for investing in a fashionable garden as part of the preparations for a royal visit. [641] Finally we have the question of Sir Anthony's debt that was passed on to his son William. £20,000 would have been more than adequate to undertake work on the almost heroic scale we see at Hanwell. All this argues for work to be underway possibly from the late 1590s when Queen Elizabeth could reasonably have been

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[640] Jill Francis, 'Order and Disorder in the Early Modern Garden, 1558-c.1630', *Garden History*, vol. 36, no. 1 (2008), p. 26.

[641] See above, p. 86.

expected as a visitor through to the opening decade of the next century. Sir Anthony's brother Walter had, as discussed above, a well documented interest in, and indeed expertise with, garden making and may have been the driving intelligence behind work at Hanwell with Sir Anthony footing the bill. Whatever the precise dating, and future archaeological work may clarify this, it seems likely that these works provided the setting and infrastructure for Anthony III (d. 1675) , the 4th Baronet, to develop his garden of wonders and marvels later in the century.

The Archaeology of the Gardens 1660 to 1675

AS noted above, it is likely that most of the large scale civil engineering tasks to create the garden had been carried out in the opening decades of the seventeenth century. However, archaeological investigations have pieced together, in some cases with very secure dating evidence, the additions made to the garden by Sir Anthony Cope from the early 1660s onwards as an expression of his enthusiasm for all things scientific. It should be stressed that this is a summary of the main archaeological findings with a detailed account of the evidence to be presented in the final excavation report for the site that remains several years in the future.

The island in the lake (Pond B) was subject to excavation (HANA) between 2013 and 2015 on the mistaken assumption that this was the location of Plot's 'House of Diversion'. The logistics for this task were quite demanding as it was necessary to construct a ferry operated on a continuous loop to transfer staff and equipment over to the island. The most obvious feature, which was excavated, was a stone lined sunken area known to the locals as 'Sir Anthony's Bath'. The only deposits within this were of recent date and it was obvious that it had been dug out at some time in the not too distant past. Once cleared this revealed itself to be a rectangular cellar like structure 2m long by 1.2m wide and 1.4m deep (Figure 75). At the base was a very well laid paved floor which did not quite align with the rather less solidly constructed side walls that contained some reused masonry. At the north end were a series of stepped back narrow courses of stone work dubbed by the excavators the 'fairy steps'.

Figure 75. Hanwell, HANA 13, 'Sir Anthony's Bath', looking north east

Two trenches were cut to the north and east of this sunken feature to explore the possibilities of other structures on the island and in particular to look for evidence of features relating to the possible presence of pipework on this potential site for the 'House of Diversion'. No such discoveries were made. One observation that is perhaps significant was made in 2015 when the level of the lake was so low that an additional trench was cut out across the lake bed on the south side of the island. This revealed that there had been considerable erosion around the island's edge and that it may have been lined by a stone wall nearly 2m out from the current perimeter.

Islands were frequently incorporated into large pools to act as a refuge for nesting wild fowl. On a more elevated level Maddalena Bellavitis celebrates the social potential of an island in the Renaissance garden, writing, 'The island, the *isola felix*, has always been a very important *topos* for the concept of the *locus amoenus*, […] a

magical land enclosed and separated from the outside where the court could retire, party and shine.'[642] Other suggestions made for Hanwell's 'bath' have included a tank for breeding fish, a secure storage space either for valuables or reactive compounds or a conduit house from which fresh water could be extracted. Perhaps the key observation is that water within the feature rises and falls according to the level of water within the lake. In all probability a bathing function is the most likely although a cold bath on an island in a lake does not seem like an immediately enticing prospect. A parallel, although not a particularly close one, exists at Packwood House, Warwickshire where a well built and rather elegant outdoor cold bath is generally dated to the 1680s. [643] It was certainly in place by 1723, which makes it quite an early example of the type of garden feature which became increasingly popular through into the eighteenth century. [644] Outdoor pools of a similar type are uncommon for the seventeenth century. A couple of much larger pools purportedly for swimming existed at Emmanuel and Christ Colleges, Cambridge. [645] In some ways the closest structural parallels may be found in baptistery pools that were becoming a feature of some chapels at the time as for example in the Old Chapel in Tewkesbury. [646]

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[642] Maddalena Bellavitis, 'The Dukes of Este and the garden as scenery and representation of the magnificence of a dynasty', *Studies in the History of Gardens & Designed Landscapes*, vol. 37, no. 4 (2017), pp. 321-35,

[643] Stephen Wass, 'Waterworks at Packwood House, Warwickshire', *Garden History*, vol. 49, no. 2 forth-coming.

[644] See Kate Felus, *The Secret Life of the Georgian Garden (*London, 2016), pp. 73-81.

[645] Elizabeth Whittle, 'Ornamental and Utilitarian Water Features and their Water Supply in Cambridge at the Beginning of the Seventeenth Century', *Garden History* vol. 45, no. 1 (2017), pp. 21-45.

[646] Historic England Listing, https://historicengland.org.uk/listing/the-list/list-entry/1207425, accessed 11 December 2020.

The element of reused stonework recorded associates this structure with the cascade at the outlet of the lake which is dated to the second half of the seventeenth century. If this were Sir Anthony's bath it could perhaps be another factor that steered Plot's thinking in the direction of *The New Atlantis* as Bacon's 'House of Salomon' was well provided with baths of various types. Whatever the case there is no evidence to link this island to Plot's 'House of Diversion'. Such was the lure of having a real island at Hanwell to explore it was not until the project was in its third year that we noted that Plot's reference puts the 'House of Diversion' to the east of the house whilst the island lies to the north.

The outflow from the upper lake was managed through a bypass channel just past the northern end of the dam. The original sluice mechanism was almost certainly lost when a new construction was inserted. This initially seemed to consist of two stone piers which had later been blocked by a series of stone slabs with sloping faces. Once the vegetation had been cleared several courses of this structure could be seen and subsequent excavations in 2013 (HANB) explored this down to its lowest levels. An initial interpretation had viewed this as a two phase structure but it became clear that it was all built as a piece. Pottery and particularly clay pipes from the fill of the foundation cut dated this to the second half of the seventeenth century and it appeared to have been built as a simple cascade to maintain levels of water in the lake yet permit outflow and at the same time create an attractive water feature. Many of the stones were obviously reused, the central blocks looking like large coping stones or possibly window sills (Figure 76).

Figure 76. Hanwell, HANB13, the cascade after excavation looking south west.

Given the considerable destruction wrought in the area during the Civil War there must have been something of a surplus of dressed stone available for reuse locally. Indeed Stephen Porter records that, 'Banbury Corporation petitioned for the demolition of the castle there and this was duly approved with, "the Materials bestowed upon the town of Banbury, to assist them in the Repair of the Ruins made in the late War".' [647] He makes it clear that this process went on into the 1650s and even 1660s and so it is not impossible that Banbury Castle could have been the source of Sir Anthony's stones. In a final attempt to validate the idea that the existing island in the lake could have been home to the fountains described by Plot the possibility that a water wheel with attached pump could have been located here was explored with an

[647] Porter, *Destruction in the English Civil War*, p. 96.

additional area excavation on a terrace to the north. Nothing was found to support this suggestion.

Below the east terrace an area adjacent to a small rectangular pond known as the Lady Pool (Pond C) and described as a water parterre was subject to extensive excavations between 2017 and 2021 (HANK). Surface indications backed up by detailed survey work (Figure 57) and most especially the LIDAR image (Figure 45) suggested a possible ground plan. Excavations initially concentrated on the north and western parts of the central island but by 2021 the entire perimeter had been examined. The island proved to be octagonal and revetted with a stone wall. Evidence indicated that construction began with the draining of the pre-existing pool. A shallow circular trench was cut into the gravelly silts across the pool's base, presumably after they had been allowed to dry out. This trench may have been dug to facilitate setting out the octagon, however, the finished result was far from being satisfactory (Figure 77). The irregularity of the octagon may reflect instability in the silts on which it was founded although there may be an element of simple incompetence here. Once the setting out had been completed a foundation course was laid of quite large, up to 80cm long, roughly shaped stone blocks. A further two courses of large irregular blocks were laid on top of this at the same time as the middle of the island was built up with a series of dumps of clayey silt. The next two surviving courses consisted of well shaped and fitted ashlar blocks, all of the local ironstone. None of the blocks recorded *in situ* appeared to be reused. The lower of the two courses had suffered considerable frost damage as it had been set at water level and so subject to a cycle of wetting and freezing during the lifetime of the structure (Figure 78).

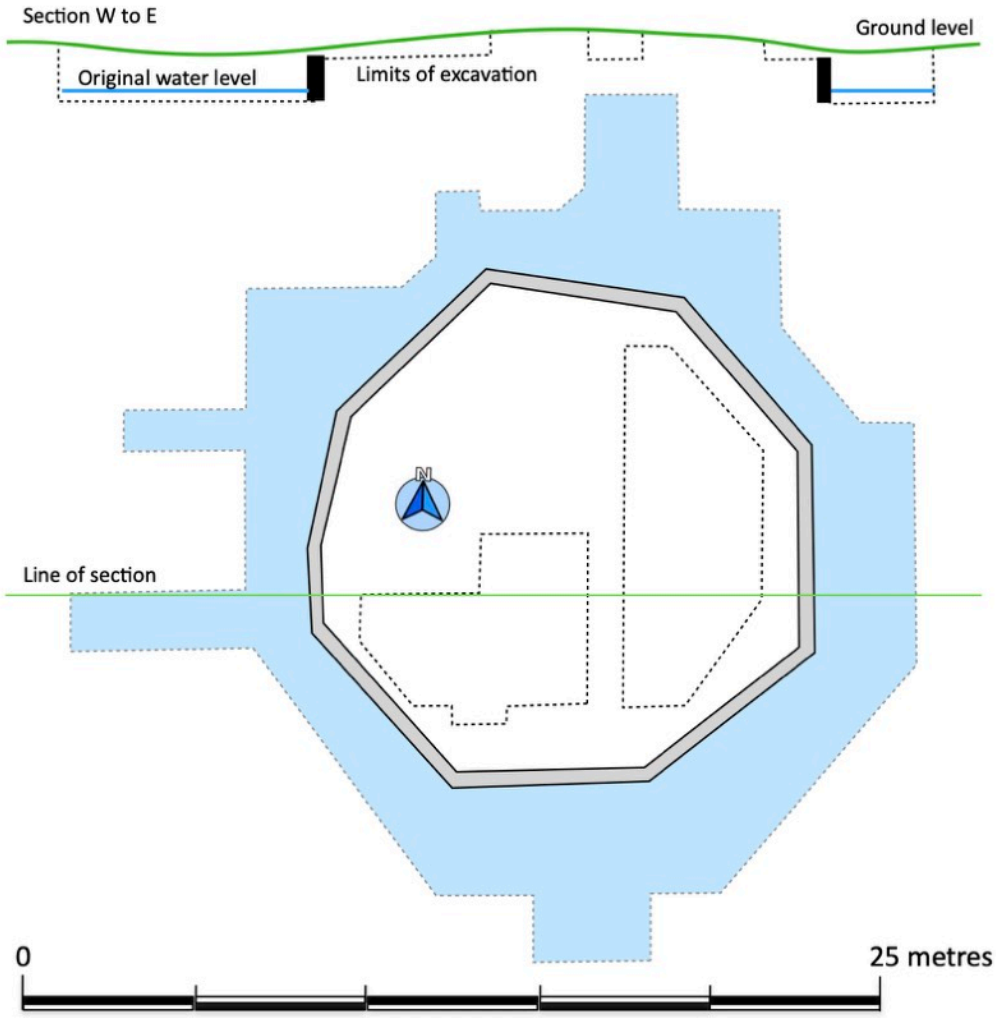

Figure 77. Hanwell, HANK21, plan of the perimeter wall to the central octagon.

At no point did the perimeter wall survive above five courses and so its original height remains unknown, however, judging by the quantity of rubble and faced stone used to fill in the surrounding moat at the time of its destruction it probably stood at least a metre above water level and may well have been higher. The wall was capped with a set of extremely well finished coping stones with flat tops, 25cm wide, and chamfered edges.

Figure 78. Hanwell, HANK19, north wall of octagon with setting out trench, looking south west.

A series of nearly sixty terra-cotta garden pots and urns were excavated from the moat at the foot of this wall suggesting that they had originally been positioned along the length of this parapet. Some were plain and some fluted, interspersed with more decorative handled urns. One of the ornamental urns had the date 1664 inscribed into its base. [648]

The only evidence available at present to date the construction of the island is a couple of large unabraded base sherds of post-medieval Midlands Blackware sealed at least a metre below its make-up. Whilst there are no obviously reused stones in the standing remains, that elsewhere have been used as an indicator for Sir Anthony's work from the 1660s, the question as to whether he was responsible for constructing

[648] See below, pp. 292-6 for details of the pots.

the island or simply built his 'House of Diversion' on top of an existing feature remains unresolved. However, it is likely, given the limited amount of silt that built up post-construction, that the island, and any associated structures, did not have a lengthy period of use. Unfortunately there were no traces from the interior of the island of any features despite the huge amount of building debris filling the moat. The material in the moat is strongly indicative of a timber framed building with tiled roof and plastered walls with glazed windows and if this were founded on sleeper beams there would be comparatively slight traces of foundations on the ground. The presence of material excavated from the deposits within the moat indicate a range of activities taking place on and around the island, specifically smoking, drinking and eating. Putting this in the context of what we know about the usage of ancillary garden buildings such as this one we should perhaps compare the 'House of Diversion' with contemporary banqueting houses.

We are still some way from being able to reconstruct with confidence the garden in its entirety for this period and the identification and examination of the site of the elaborate water mill as described by Plot remains a high priority. What the archaeology does indicate is that a number of additions to the garden were made in the 1660s and 1670s characterised by the reuse of materials and a slightly shoddy approach to construction, in marked contrast to the well-built walls probably from the opening decades of the century. This fits well with the idea of Sir Anthony as a young man full of enthusiasm for his passion for all things technological and in a hurry to incorporate such features into his garden. However, this remains speculation outside the strict limits of what the archaeology is telling us.

The Archaeology of the Gardens from 1675 to the present day

The extent to which Sir John capitalised on his 'power to commit wast' is unclear as is the time frame. Given that arrangements for Sir Anthony's widow Mary were in place by 1677 it suggests that Sir John may have had some control of the estate fairly soon after Sir Anthony's death. Even so, it seems likely that there may have been a period during which care and maintenance of the gardens were neglected, possibly to the point where locals felt that they could move in and help themselves to materials with impunity. The fact that the collection of decorative garden pots was still in position indicates a comparatively short time span between Sir John's takeover and the demolition of the 'House of Diversion', although the archaeological evidence certainly leaves room for this not to have taken place until the 1680s. What is certain is that these elaborate gardens could fall into disuse and become overgrown and prey to the depredations of vandals remarkably quickly. Even the prestigious gardens at the Villa d'Este were not immune to such attacks. According to Philip Jacks, 'In the two decades following Cardinal Luigi's death in 1586, the Fontana dell'Organo, like much of the gardens, fell into serious neglect. Already four years earlier, the copper pipes and ducts of Venard's apparatus had been vandalised.' [649] Closer to home neglect to the gardens at Beddington, the seat of the Carews, is recorded in John Evelyn's diary for 20 September 1700:

> In decay as well as the Grotts & other curiosities, cabinets and fountaines in the house and abroade, thro the debauchery & negligence of the Heires, it being now fallen to a child under age, and onely kept by a servant or two

[649] Philip Jacks, 'Pirro Ligorio and the design of the Fontana del Diluvio at the Villa d'Este', *Studies in the History of Gardens & Designed Landscapes*, vol. 39, no. 4 (2019), pp. 271-304.

> from utter delapidation. The Estate & Parke about it also in decay: the negligence of a few years, ruining the elegances of many. [650]

However, the archaeological evidence at Hanwell argues for a process of careful and controlled demolition, at least of some features, and the reuse or sale of materials. At the 'House of Diversion' the process of demolition was clear to see. Initially the perimeter pots had been pushed or thrown off the parapet into the moat. Most were close to the foot of the wall although a few had been thrown or kicked and lay at a distance of up to 3m in some cases. Although these pots appear, at first glance, to be ideal candidates for reuse or resale examination of some the best preserved examples show a degree of damage, especially spalling caused by frosts, to the extent that they were probably not worth saving even though the plants seem to have been removed.

Figure 79. Hanwell, HANK18, partially excavated skeleton of dog.

[650] Evelyn, *Diary*, vol. 2 , p. 354.

Figure 80. Hanwell, HANK18 009, coping stone end on in the silting of the moat.

The coping stones to the perimeter wall were taken down and, along part of the north west side of the octagon, three were laid on the bed of the moat presumably to give a secure footing for the demolition work. Curiously the body of a medium-sized dog, perhaps a spaniel, was laid on the northern most slab before being buried in rubble pulled down from the wall (Figure 79). The angled coping stone from the corner at the west end of the north side had simply been levered off and had fallen into the moat end on, where it remained until excavated (Figure 80). Many of the facing stones must have been removed for reuse although a surprising number of well dressed stones were abandoned together with large quantities of rubble. Mixed in with the upper strata of this spread of rubble were several kilograms of roof tiles, the vast majority ceramic but with a significant number of stone examples. In addition many fragments of wall plaster, which had been attached to timber laths, were recovered,

some with combed decoration. The fact that a large dump of broken roof tile was found on the north side of the island with architectural fragments gathered on the south side and most window glass and lead cames excavated along the south west side, argues for materials being gathered together and sorted into piles on site before removal. Spills of molten lead recovered suggest that this material was melted down and probably cast into ingots before being taken away. Given the almost total lack of plaster or tile from the island itself and the absence of features such foundation trenches or post holes there is a strong possibility that as part of a levelling process its upper layers were removed to fill the surrounding moat with a view perhaps to making the ground more cultivable. Material remains from the subsequent ownership from the first half of the twentieth century include elements of the levelled iron rail fencing and a shallow concrete lined pool within the sunken garden that was probably built for paddling or yachting with model boats (Figure 81).

Figure 81. Hanwell, HANI, twentieth-century paddling pool, looking north west.

Recent planting and other works have been well documented by the current owners. It is a curious coincidence that the twentieth-first century garden is home to scientific endeavour, through the presence of the Hanwell Community Observatory, in much the same way that it was in the seventeenth century.

The Hanwell Pots and Other Finds

Unusually, for an exercise in garden archaeology, the excavation on the site of the 'House of Diversion' resulted in many finds, indeed, one of the most remarkable discoveries of the entire programme at Hanwell was the assemblage of seventeenth-century terra-cotta garden urns. Whilst there are both written and visual sources for the use of garden pots during the period, actual contemporary survivals are rare. As already noted the pots were excavated from around the perimeter of the octagonal island identified as the probable location of the 'House of Diversion'. The archaeology made it clear that they had been destroyed in a single act by being pushed or thrown from the perimeter wall and then having rubble from the demolition that followed dumped on top of them (Figures 82 and 83). It is likely that in total there were between sixty and seventy pots indicating eight or nine pots per side. This suggests quite close spacing at around 70cm, just under 3 feet or a yard. Although it is possible that not all pots were placed on the perimeter wall this is the most likely arrangement.

Preliminary analysis has identified four main forms from the assemblage. All are in a well-fired, fine-grained red fabric with few inclusions and appear to exist in roughly equal proportions. The first group (Type 1) consists of what one might term conventional flower pots, large (typically 30cm diameter, standing 35cm tall) wheel-thrown pots with straight sides sloping slightly outwards but, unlike most modern pots, having the lip turned out in a broad flange to facilitate handling (Figure 84). Some had a band of reeding just below the rim. In all cases there were four or five small drainage holes around the perimeter of the base.

Figure 82. Hanwell, the ‘sea of pots’, the south east side of the octagon, September 2020.

Figure 83. Hanwell, garden urn P10 showing ‘pancake’ effect of impact.

Figure 84. Hanwell, reconstructed pot type 1.

The second form (Type 2) is a shallow pan with strongly everted sides, around 25cm deep but flaring out to a diameter of 30cm (Figure 85). Wheel-thrown with a single large central drainage hole these pots were decorated with vertical finger impressed fluting. Today such shallow flared pans are frequently used for bulbs which calls to mind the Dutch 'tulip mania' of the 1630s. The next two forms (Types 3 and 4) are closely related and are large handled urns without bottoms. The smaller (Type 3) stands around 45cm high with a diameter of 25cm at the rim and has two lines of fluted finger impressed decoration separated by a raised band. The larger (Type 4) is over 60cm tall and 45cm in diameter with a similar layout except the band of decoration has large anti-clockwise spirals pressed into the clay (Figure 86).

Figure 85. Hanwell, HANK20, an intact example of pot type 2 being lifted in October 2020.

Figure 86. Hanwell, examples of pots types 3 and 4 as reconstructed and displayed in the 'pop-up' museum for an open weekend in September 2021.

Both types were hand built, almost certainly on a turntable, with the handles and their acanthus leaf plaques being taken from moulds. Similarly they are both, in effect, hollow tubes lacking a bottom. Whilst some examples of these latter two types seem to have been presented in their natural finish most were given a colour coating, either in cream or brown, in order to mimic the appearance of much more expensive stone vessels. None of the pots are glazed although there are occasional smears of glaze indicating that they were fired alongside other types of pottery. Remarkably one example of a type 4 pot has an inscribed date of 1664 on its foot (Figure 87) whilst another of type 2 has the initials RP incised on the base in an elegant cursive script , presumably the initials of the potter rather than Robert Plot (Figure 88).

There are still many questions that need to be answered by further scientific examination, perhaps most importantly, where the pots were made. Analysis of the clay should show whether they were imported or made at an established local pottery or even the product of an itinerant band of potters setting up in the park. Nor do we have any information about how they were planted. Extensive sampling was undertaken of deposits of silt from within the pots, although the evidence indicates they were emptied of their planting before being discarded, as well as from the surrounding silts within the moat. Paleo-botanic analysis of these deposits should inform us at least as to what was growing in the vicinity.

Figure 87. Hanwell, pot 56, fragment with inscribed date.

Figure 88. Hanwell, pot 48, base with inscribed initials.

Pots certainly figured in medieval gardens, sometimes as one-off pieces with a small tree, often depicted as being cut into a fanciful shape (Figure 89). As an architectural component of garden design large terra-cotta pots were frequently associated with the cultivation of citrus fruits on a seasonal basis especially in Italian gardens of the Renaissance. This practice in some places continues to this day, notably at the Boboli Gardens, Florence and at the Villa Medici at Castelli (Figure 90). Otherwise the use of potted plants as evidenced by contemporary images seems rather restrained, although they could, as rather ephemeral components of a garden's design, be simply under represented by the image makers. It is unlikely that there could have been much of an export trade in such bulky yet fragile items although writing in 1706 Henry Wise recommends that 'pots must be either of plain earth or Dutch ware, the latter being much larger'. [651] Clearly complete decorative terra-cotta garden pots from the seventeenth century, either as antiques or archaeological finds, are extremely rare. The risks of accidental damage to say nothing of the destructive effects of frost are formidable. To give some idea of the rate of attrition Noel Ivor Hume reported on the governor's palace in Williamsburg, Virginia: 'In 1768 the executors of the then deceased Governor Farquier sold to his successor, Lord Botetourt, 322 flowerpots at a cost of two pounds fifteen shillings and four pence, or twopence each. Three years later only 252 remained to be included in the governor's inventory.', a loss of 22%. [652] Whilst some early urns survive in stone or lead, the Hanwell collection of ceramic decorative urns and flower pots is unique. Of decorative urns Currie notes in reporting on a late eighteenth-century example that

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[651] Henry Wise, *The Retir'd Gardener: in six parts, the first two being dialogues between a gentleman and a gardener* (London, 1706), p. 148.

[652] Noel Hume, *Archaeology and the Colonial Gardener,* p. 42.

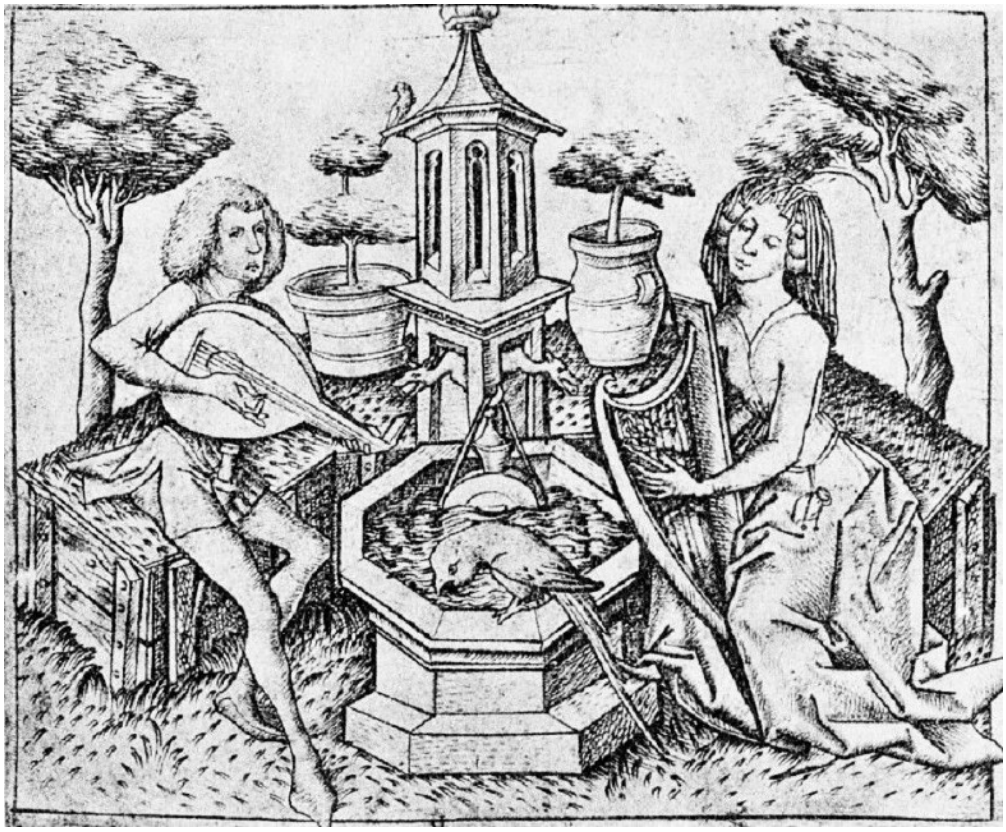

Figure 89. *The garden of Love* c. 1465 by the German master (E.S.).
Creative Commons Public Domain Mark 1.

Figure 90. Current use of garden pots at the Villa Medici at Castelli.

> Such horticultural urns were frequently shown in contemporary illustrations of 17th- and early 18th-century formal gardens, but have been considered by garden historians to have been made only in stone and lead. Since ceramic urns would have been susceptible to frost damage, it was thought unlikely that they were made in this material. [653]

The finds at Hanwell tend to contradict this view.

Where garden wares of the period have been excavated and recorded they have usually been of the plain flower pot variety. Currie published a general study on the archaeology of the flower pot in 1993 and came to the conclusion that 'functional non-ornamental flower pots were not made in large numbers before the early eighteenth century', but he did not examine ornamental vessels. [654] A small number of flower pots were recovered in the excavations at Nonsuch Palace, Surrey. These were dated post-1667 and bore traces of 'purple red, orange-red and white-wash' on exterior surfaces. [655] The collection published by Brian Dix for Kirby Hall consisted of six examples of three main forms of largely conventional flower pot shape. One had lugs and the larger examples had slightly everted rims. Holes were pierced both at the centre of the base and in some cases in the lower parts of the side walls. The pots all came from the western terrace of the 'Great Garden' and were dated to the seventeenth century (Figure 91). [656]

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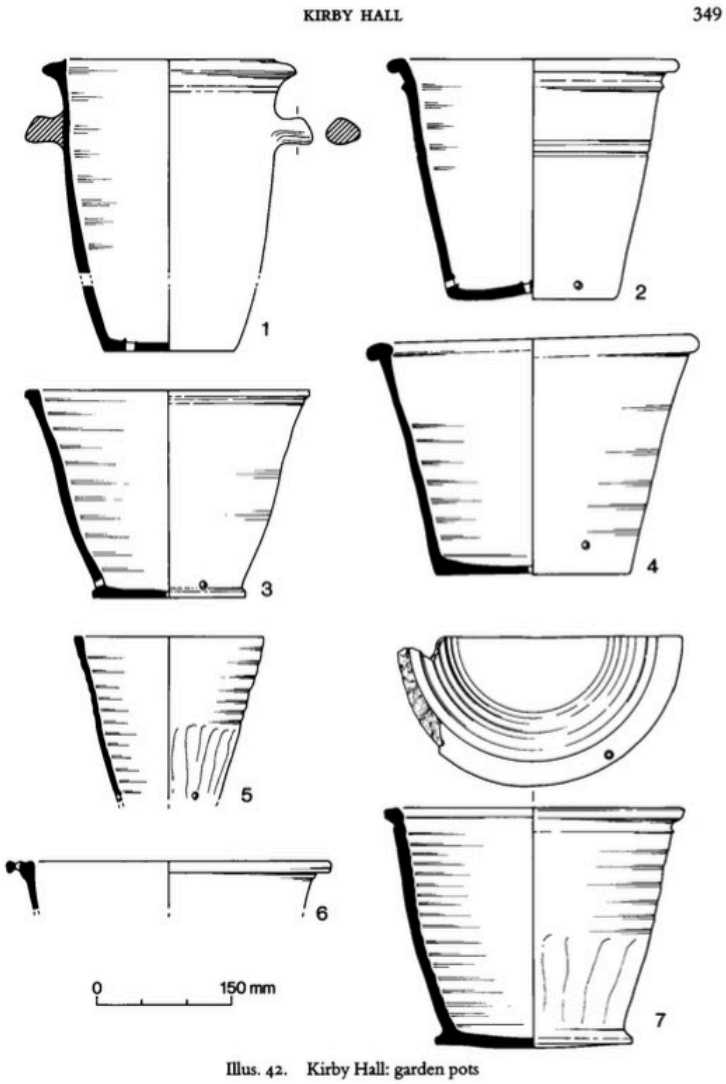
[653] Christopher Currie, ' A zoomorphic horticultural urn from Gosport, Hampshire', *Post-Medieval Archaeology*, vol. 39, no. 2 (2005), pp. 325-27.

[654] Christopher Currie, 'The Archaeology of the Flowerpot in England and Wales, circa 1650-1950', *Garden History*, vol. 21, no. 2 (1993), pp. 227-34.

[655] Martin Biddle, *Nonsuch Palace The Material Culture of a Noble Restoration Household* (Oxford, 2005), p. 198.

[656] Brian Dix, Iain Soden and Tora Hylton, ' Kirby Hall and its gardens: excavations in 1987–1994', *Archaeological Journal*, vol. 152, no. 1 (1995), 291-380.



Illus. 42. Kirby Hall: garden pots

Figure 91. Excavated garden wares from Kirby Hall.

The Kirby pots are similar to those recorded in the huge excavation of the Privy Garden at Hampton Court Palace, some of which date from the 1690s. [657] Both sets also resemble those from contexts excavated at Colonial Williamsburg in the United States. Apart from the rather eccentric crenelated urn from the moat of the

[657] Dix and Parry, *The Privy Garden, Hampton Court Palace,* p. 110.

Jewel Tower at Westminster the only other major collection of decorated pots comes from the excavations at Basing House in Hampshire that had begun around 1875. Because of the early date of the excavations the artefacts recovered were classified as unstratified although a date range was ascribed to them after 1531, when work on the house was begun, and before 1645 when it was demolished after the Civil War siege. The horticultural wares are unusual and indeed debate continues as to whether all the pieces identified were for planting. Certainly three urn-shaped flower pots were made for the resident family specifically for planting as two of them bear the Paulet crest of a falcon and accompanying motto, *Ames Loyaulte*. A further four 'cylindrical pots' bear little resemblance to any known forms. Like some of the Hanwell pots they have no base but drainage holes are present and the existence of broad flanges on the bases of two of the pots and traces of mortar suggest they may been permanently fixed to the top of a wall. [658] Part of an urn of presumed seventeenth-century date was recovered by Currie from Ham House, Surrey. The catalogue entry reads:

> Horticultural urn in a pinkish-beige, slightly sandy fabric with rare haematite inclusions to 6mm. Zoomorphic ornamentation in relief, showing a goat's head with a leafy background. External surface treated with pinky-orange slip with traces of white paint overlaid. Deeply incised vertical combing internally. Rim diameter 190mm. 14% of rim surviving. Unknown context, stored in Beer Cellar. [659]

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[658] Stephen Moorhouse, 'Finds from Basing House, Hampshire (c. 1540-1645): Part One', *Post-Medieval Archaeology*, vol. 4, no. 1 (1970), pp. 31-91.

[659] Christopher Currie, 'Horticultural Wares from Ham House, Surrey', *Post-Medieval Archaeology,* vol. 29, no. 1 (1995), pp. 107-11.

Figure 92. Ham House, replica garden urn. Photo by Gary Marshall.

Replicas of this urn were subsequently modelled by Whichford Pottery in Oxfordshire to provide a series of contemporary planters for use in the garden (Figure 92). Part of a similar vessel was recovered at Gosport and was painted white in imitation of stone. Although there was no dating evidence from the archaeological context Currie ascribed it to the seventeenth or early eighteenth century. One particularly interesting local find comes from a latrine pit in the grounds of Corpus Christi College, Oxford whose fill was dated to between 1720 and 1740. It is described as

> […] a complete profile of a remarkably elaborate red earthenware 'urn' shaped like a large chalice with a hollow pedestal base and with applied classical-style cherub masks and foliage (? acanthus) around the upper body. This highly unusual vessel is probably best interpreted as a flowerpot holder.

> Profiles of several other large conical flowerpots in a similar red fabric also came from the fills. [660]

The most comprehensive account of early flowerpots comes from colonial Williamsburg and whilst dealing primarily with material from the eighteenth century there are some useful parallels. Apart from the example above there is little published evidence of excavated examples of painted pots from England but Hume reported on a later example from colonial Williamsburg with fragments that were 'urn-shaped and bearing on the side a shield of arms cast in relief […] The pots had initially been painted grey, perhaps as an undercoat, and thereafter a vivid pink, the arms picked out in deep yellow and the supporters in black.' [661]

Figure 93. Reconstructed garden pot excavated in Haarlem.
By permission, Archeologisch Museum, Haarlem.

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[660] Robin Bashford, Anne Dodd and Daniel Poore, 'Medieval and Post-Medieval Remains from Excavations on the Site of the New Auditorium, Corpus Christi College, Oxford', *Oxoniensia,* vol. 79 (2014), p. 191.

[661] Noel Hume, *Archaeology and the Colonial Gardener,* p. 46.

A particularly unusual find was a large piece of a tin-glazed hanging flower pot from a contractor's trench on the site of the Elizabethan garden at Beddington, Surrey. [662] On the continent an important collection of large decorated terra-cotta garden urns was excavated from a cess-pit in Haarlem in Holland and published in 1993. [663] Although they were discarded as wasters they were finely made and with figurative, floral and heraldic decorations making the Hanwell pots seem, by comparison, rather restrained (Figure 93).

As well as excavated examples there are several contemporary references and illustrations of pots in use. John Evelyn in his unpublished *Elysium Brittannicum*, compiled over nearly forty years during the second half of the seventeenth century, provides a detailed account of contemporary garden practice. Throughout the work he offers advice as to the most appropriate pots for raising seeds, planting bulbs and managing grafts. It is in Chapter XI, *Of statues {Payntings}. Columns, Dyals, Perspectives, Pots, {Urns} Jarrs, Vas's and other Ornaments* that he gives his most comprehensive account of garden pots (Figure 94).

[Conventions used by Ingram in transcribing mss:

~~text lined through~~	Text lined through by Evelyn
{text in wavy brackets}	Interlineations by Evelyn
[text in square brackets]	Editorial comments
(text in parenthesis)	Evelyn's use of parenthesis
text in italic	Text underlined by Evelyn]

[662] Phillips and Burnett, 'Francis Carew's Garden at Beddington, Surrey', *Garden History,* p. 177.

[663] Tony Lindijer and Sabina van Vlijmen, *Om de Tuinpot Geleid, 17e eeuwse tuitten uit Haarlem*, (Haarlem, 1993).

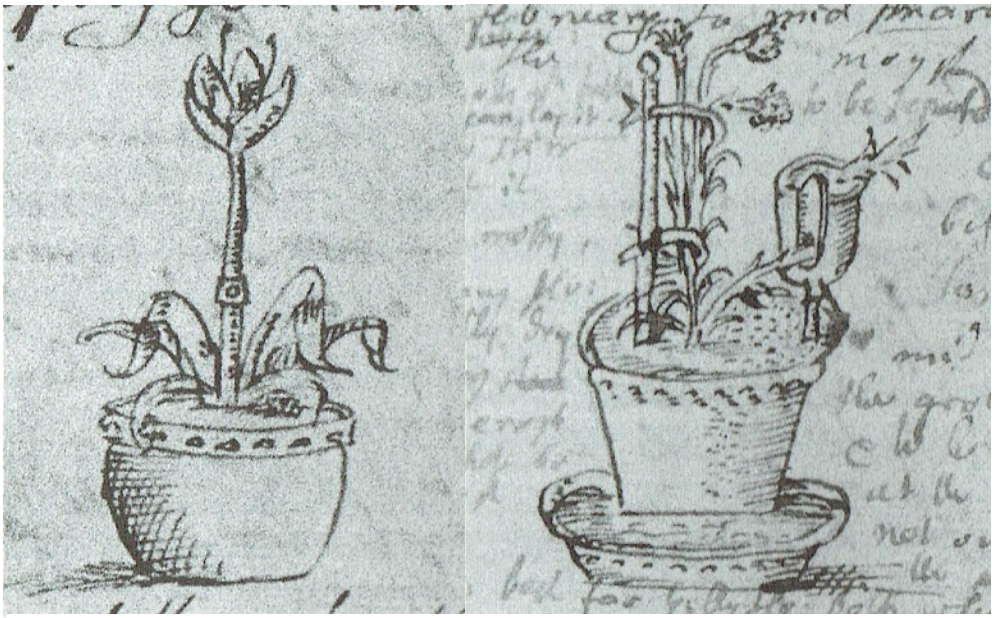

Figure 94. Flower pots illustrated in John Evelyn's *Elysium Britannicum*.

> Finaly, amongst *Statues, Perspectives*, & other Ornaments, ~~suiting~~ exceedingly usefull; ~~in Gardens~~ {~~our Elysium~~} *Pots, Vasas*, & the Urns, Jarrs or } Great *Amphoras* may be ranged: for they likewise stood in Gardens; And the Excussores & Figuilae, who carved repair'd, & formed these Vessels, were formerly reckned amongst the *Statuaries*. The first of these may be employed for the {Sowing}, Setting in & preserving of the choycest Flowers; especially the *Carnation, Auriculas, Amaramths, Anemones* etc; & for some shrubbs, & plants of the rarest ~~sort~~ {kinds}: & therefore to be made of various sizes, depths, & diameters; frequently and commodiously enough ~~made~~ moulded ~~by our the potter~~ of common potters Earth; but always pierced at the bottom, for the passage of superfluous showers; which would other wise, overwash ~~& sta~~ {rott} & sterve the rootes they contained:
>
> [Marginal note: but the best course to preserve your choyce Flo: potts is to place an ordinary flower pot filled with earth & wherein your flo: grow within the greater one, so as it be even at the orifice] [664]

Evelyn goes on to describe in detail rather elaborate arrangements for opening doors in pots to replenish the soil and pots manufactured for multiple plantings after the fashion of some present day pots for herbs or strawberries. He then returns to questions of the form and materials to be used for planters.

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[664] Evelyn, *Elysium Britannicum,* p. 220220

> We speake nothing here of the particular former of these potts; men are to please their phantsies ~~but the mos~~ though we should affect the most antique: & scubas we have described in Iconisme ~~And these brit Vessells may be~~
>
> [Inserted on a separate piece of paper] Yet for a moderat proportion ~~let th~~ & generall Luke, they ought to be as broad at the Orifice as they are in height, two inches less at bottome (I speake for ordering ~~of~~ Carnation potts, etc) so as inverting ~~it~~ the whole masse of earth may come out intire upon occasion, and let there be holes at the bottom sufficient widenesse that the water may have convenient passage for which reason pibbles are better to strew & keeps the mould from clodding, thus tyle shards or oyster shells with which Gardners usually cover them. but in filling these potts with mould, be sure to let it exceede the brimms thereof by an inch, in regard of it sinking etc:]
>
> But these materials are so fragile, that to have them cast in *Lead*, with their *frutiges, relievos, {Escutchions, Cyphers}* & other ornaments, were infinitely preferable to those of Earth; and after those such as are ~~made~~ {carved out} of hewen stone; But these for being commonely {bigger &} of lesse moderne shape, may be reckned amongst the *Vasas*; which were frequently ~~hew~~ cutt out of Porphyrie {Oriental Alabaster} ~~it selfe~~, & other rich {& lasting} materialls, with exquisite workmaneship , ~~and~~ for the adornement as well of Gardens, as the ~~most~~ famous of their Houses: For of these we have oftentimes beheld ~~pro Lavors~~ *Vasas, Urnes, Lavors, & Amphoras* of Prodigious capacity, & admirable arte, placed, as the rest, on *Pedistalls*, & Antique supporters about the~~ir~~ Roman Gardens, & in their ~~Porticos~~, {Atrias} & Cimely~~{i}~~ums: And what a noble & grand effect, those goodly *Amphoras*, or *Jarrs*, (Though but of simple ~~Earth~~ {clay}), cause, in that {spacious} area before the Villa of Pr: *Ludovisio*,
> ~~Every~~ {The} Traviler may observe: we have some in our ~~famous~~ {richer} Oyle shopps, much resembling them {in shape} & not much inferiour.
>
> [Marginal note: blacke lead dos very well being layd in oyle upon them, or but rubbed: cf]
>
> And all these {fictilia} ~~airie vessells~~ may be painted & layd in oyle, of stone, ~~Colour~~, lead, bronz'~~d~~, or any other colour; some bestow the cost to gild them; but we, for our parts, do not affect it, unlesse it be universall, & all over the pott, which were an excessive charge: [665]

After a consideration of pots placed indoors for floral arrangements Evelyn concludes:

> Lastly, The proper places for these ornaments of Potts, {~~Vasas~~ etc:} ~~is~~ {are} at the sides of Alles & Gardens; Springling some about the *parterr* { & Trayle worke} as the designe invites: ~~Also~~ But for the larger *Vasas*; upon

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[665] Evelyn, *Elysium Britannicum,* p. 222.

> *Pedistalls*, of stone, ~~& the~~ betweene the ~~ranks~~ {files} of the *Statues*, Upon Balustrades, & the Ascent of stepps, & {generally on all elevated places} wherever we find them Gracefull: [666]

One author who managed to cover some of the same ground in print was John Worlidge who in his *Systema horti-culturæ,* published in 1677, said all he had to say about garden pots in these terms:

> Other ancient Ornaments of a garden are Flower-pots, which painted white and placed on Pedestals, either on the ground in a straight line on the edges of your Walks, or at the corners of your squares, are exceeding pleasant. They are usually made of Potters Clay and burnt, which when full of Earth and frozen in the Winter are apt to break unless you place another ordinary pot in Earth in the inside of it wherein to plant your Flowers, you design to propagate in them. But to prevent the casualty of breaking, some are made of Lead which are much to be preferred. [667]

There are several points of interest that relate quite closely to the Hanwell pots in these accounts. Evelyn suggests the placing of plainer pots within the choicest pots to preserve them and is backed up by Worlidge in this respect. This practice also supports a flexible planting regime as noted by the famous diarist, Samuel Pepys, who, in discussion with Hugh May at Whitehall on 22 July 1666, remarked on how appropriate it was that one had 'a little mixture of statues or pots, which may be handsome and so filled with another pot of such and such a flower or green, as the season of the year will bear'. [668] Both remarks give a context for the fact that the Hanwell urns have no bottoms. There have been no instances of a basic pot remaining

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[666] Ibid., p. 223.

[667] John Worlidge, *Systema horti-culturae, or, The art of gardening: In three books : the I. treateth of the excellency, scituation [sic] of gardens ... : the II. treateth of all sorts of trees ... the III. treateth of the kitchin garden* (London, 1677), p. 66.

[668] Samuel Pepys, *Diary*, 22 July 1666.

inside the more elaborate urns at Hanwell and it is possible that, as noted above, planting here took place in sacks or baskets. Despite both Evelyn's recommendation and current gardening practices it is perhaps surprising that in the more conventional flower pots there have been no traces of deposits of pebbles, crushed tile or shell lining the base of any of the vessels.

Evelyn clearly was very conscious of the fragile nature of 'earth' pots manufactured from fired clay and would have much preferred to see them cast in lead or hewn from stone; however, there was obviously a cost issue here although it is difficult to quantify. Evelyn goes on to praise the effect of painted terra-cotta '*Amphoras*, or *Jarrs'* at the 'the Villa of Pr: *Ludovisio'*. This was probably the Villa Ludovisi next to the Pincian Gate in Rome, now absorbed into the American embassy. Whilst emphasising the variety of finishes available Evelyn is less than enthusiastic about gilding on the grounds of cost.

Contemporary illustrations include a large number of still life paintings, mainly Dutch in origin, where the flower-filled urns are generally of plain terra-cotta. The Spanish painter Tomas Hiepes (1610-74) painted similar compositions where there are instances of elaborate two colour finishes which may have an element of the fantastical about them or, if realised in actuality, may have been for indoor use (Figure 95). More restrained finishes mimicking lead or stone are on show in the painting of the gardens at Pierrepont House, Nottingham from 1705, although here the swags on the pots are portrayed as being picked out in gold or blue (Figure 96). Celia Fiennes describing the gardens at Durdans in Surrey noted that there were flower pots painted

Figure 95. Decorative urns in paintings by Tomas Hiepes, (c) Sothebys.

Figure 96. Pierrepont House, Nottingham *c*. 1705. By permission Yale Centre for British Art.

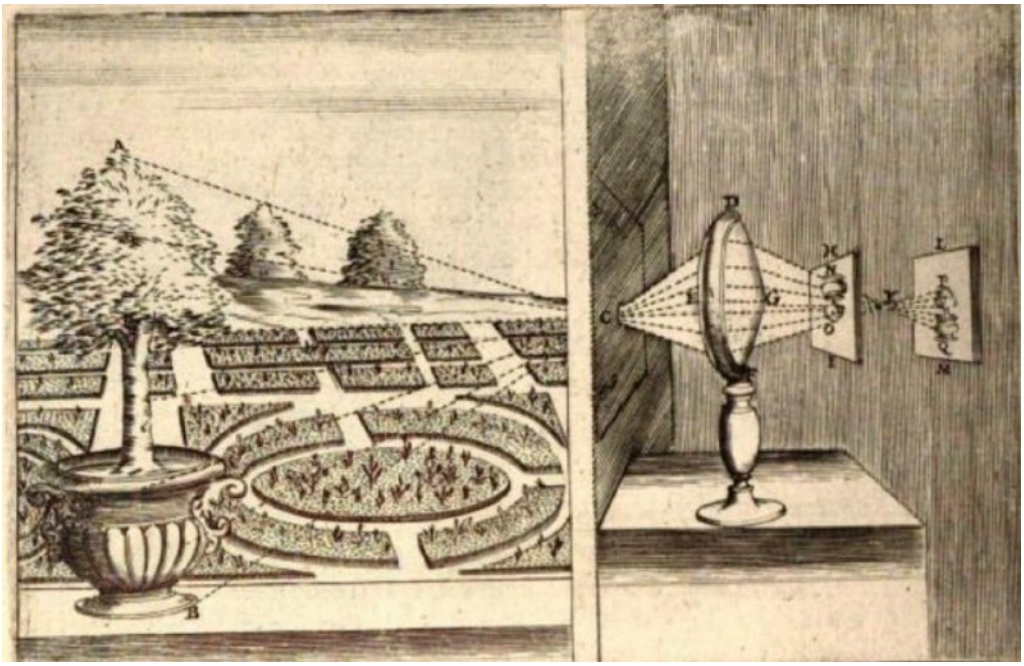

Figure 97. Tree in pot used for illustrating use of lens to project image from Bettini's, *Recreationum Mathematicarum* [669]

blue and red on raked gravel. [670] The well-known picture of the presentation of the first pineapple grown in England to Charles II shows a range of terra-cotta pots indicating that plain pots were acceptable in the highest circles. On a sheet of paper, inserted into his manuscript, Evelyn illustrates a variety of forms of garden urn. [671] Few of these seem suited for planting and some draw heavily on classical forms, however, a pair of rather squat handled urns are shown, both planted with flowers, possibly lilies. Similar pots holding small trees are depicted in *Aerarium philosophiae mathematicae* by Bettini to illustrate certain optical principles (Figure 97). [672] Evelyn discusses the most appropriate settings for the display of garden pots and urns and includes 'Upon Balustrades' which perhaps comes closest to the Hanwell location

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[669] Bettini, *Recreationum Mathematicarum, Apiarium Sextum in quo Dioptrica Arcana*, p. 36

[670] Ceilia Fiennes quoted in Jim Keeling, *The Terracotta Gardener* (London, 1990), p. 24

[671]Evelyn, *Elysium Britannicum*. p. 221.

[672] Bettini, *Aerarium philosophiae mathematicae*.

around the perimeter of the octagonal island. The Pierrepont painting shows the pots spaced, judging by the scale of the human figures, quite widely, at something like 2m centres. Here the rather severe regularity of the arrangement may reflect a desired ideal rather than the actual conditions where pots are moved around and occasionally broken and replaced. As far as one can judge the spacing of the pots along the top of the terrace walls in the 1662 painting of the gardens at Llanerch, Denbighshire (Figure 38) are broadly similar whilst typically the pots shown in the 1639 portrait of the Capel family in the National Gallery are positioned on the piers of an open-work balustrade (Figure 98). By comparison with all these settings the Hanwell pots were quite closely spaced. Finally an extraordinarily elaborate array of colourful pots are portrayed on a large piece of embroidery dated from between 1710 and 1720 from Stoke Edith, Herefordshire in the V and A Museum, London (Figure 99).

Figure 98. Detail from The Capel Family by Cornelius Johnson, c. 1640. National Gallery.

Figure 99. Pots depicted on embroidery from Stoke Edith 1710-20, V & A.

It is not obvious if this is a depiction of an actual garden or an imagined landscape but it clearly shows the great potential for variation in any given assemblage of pots, a situation demonstrated daily in any number of modern gardens.

Currently we have no information about planting at Hanwell but list of plants growing in the gardens at Beaufort House Chelsea, prepared for Mary, 1st Duchess of Beaufort in July 1691, gives an idea of the scale and range of planting attendant on a great house:

> In the fore Court are 22 potts of Spruce ffirrs. In the West Walk next the Kitchin Garden is
> 01 potts of Lavender Cotton
> 15 potts of Campanulus Pyramidalis latescens
> I6 Potts of Scarlett Lychness
> 10 potts of ffraxinellas
> 10 potts of White Lillys
> 20 potts of Flos Cardinalis
> 26 potts of Ceders

02 potts of Heleborus verus Alb
02 potts of ordinary Honeysuckles
01 pott of Virginia Honeysuckles
12 potts of severall sorts of [left blank] 02 potts of Laurestina
01 Persian Jasmine
06 potts of Nasturtium arborescens
04 potts of Strip't Phillerea
04 potts of Juniper
10 potts of Abrotanum
02 potts of yellow Stoechas
I2 potts of double Stock-gillyflowers 06 potts of Southernwood
01 of Myrtle
03 potts of Marum Syraicum
03 potts of double Sweet Williams 04 potts of Gentianellas
03 potts of Stript Thyme
01 of Jucos
100 Auriculas
100 potts of Julyflowers

Ruth Duthie who transcribed the list remarks that, 'It is clear that much use was made of pots of plants in the gardens of this period. Not only tubs and pots of large plants requiring winter protection but also pots of evergreens and ones containing flowering plants which could be removed and be replaced with fresh plants to keep a pleasing show.' [673] Curiously there are no citrus fruits in this list unlike the situation at Ham House, Richmond where an inventory of 1682 lists '8 large orange trees and lemon trees, 22 smaller orange and lemon trees in tubs, 32 orange and lemon trees in potts, 11 great tubs with myrtles and several pots with greens'. [674]

Many of the questions relating to the Hanwell pots and their contents wait on the results of future scientific analysis; however, some preliminary suggestions can be made regarding their significance. The decorated pots are clearly all from the same

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[673] Ruth Duthie, 'The Planting Plans of Some Seventeenth-Century Flower Gardens', *Garden History*, vol. 18, no. 2 (1990), p. 98.

[674] https://www.nationaltrust.org.uk/features/potted-history-of-houseplants-in-our-houses-and-collections, accessed 9 October 2020.

manufacturer and can safely be dated as a group to 1664. The few conventionally shaped flower pots have a finer fabric and are probably from a different source although it is possible that they were brought together as part of a single decorative scheme, possibly following closely on the construction of the 'House of Diversion'. The variety of forms suggests a corresponding variety in planting although until further specialist reports are received we cannot be specific about this nor about whether the planting scheme was purely decorative or had an element of collection about it or focussed on a particular category of plant: ornamental shrubs or medicinal herbs for example. It was hoped that the distribution of the four types of pots would give some indication as to their layout when displayed; however, there was no discernible pattern and whilst the distribution was reasonably even there was certainly a greater concentration along the south east side suggesting some additional pots were gathered at this location. Evidence for pots placed elsewhere in the garden is slender although one might have expected to see them set out on the great eastern terrace. No horticultural wares were recorded from the excavations undertaken by John Moore Heritage Services in the immediate vicinity of the Castle nor were any sherds recovered from the lake side excavation (HANH) or the sunken garden (HANI). It is likely therefore that the pots and planting around the 'House of Diversion' made a striking and purposeful contribution to the scene that was not repeated in other parts of the garden.

Important though the pots are, their discovery within the moat surrounding the 'House of Diversion' is just one element in a collection of other artefacts that provide clues to activities around, and the chronology of, this part of the garden. Apart from construction debris, the main finds of significance were glass drinking vessels, glass

wine bottles and clay pipes. These alone, independent of any references from Plot, establish the site as a social one where drinking and smoking were regular occurrences. In addition a small number of finds in lead and copper alloy hint at the functioning of the water works that were described by Plot.

GLASS. As well as numerous fragments, five significant examples of fine quality vessel glass were recovered, although they had all clearly been broken elsewhere and the pieces dispersed within the silts of the surrounding moat. One important example consists of the foot, stem and part of the bowl of a small glass, probably for drinking sack (Figure 100). The stem is of the simple baluster form and bears a seal that whilst indistinct is almost certainly that of a raven's head signifying its manufacture by George Ravenscroft (1632-83).

Figure 100. Hanwell, HANK19/009/G4, foot and stem of wine glass with crizzeling.

Its most significant feature is the fact that the glass is crizzled. [675] Ravenscroft probably learnt aspects of his trade abroad. He built his first glass house at the Savoy in London in 1673 and opened a second works with his brother Francis at Henley-on-Thames in 1674. In 1676 permission for the use of the seal was granted by the Glass Sellers Company. [676] On 3 June of that year the Company issued a certificate to the King and followed this up with announcements in the *London Gazette*, repeated several more times in 1677, to:

> certify and attest that the defect of the flint glasses (which were formerly observed to crizzel and decay) hath been redressed severall months agoe and all the glasses since made have all proved durable and lasting as any glass whatsoever. [677]

It is possible that this is an example of 'experimental' glass that found its way into Sir Anthony's hands prior to his death in 1675, especially given the connection with Robert Plot who was being consulted about the chemical basis of the process. [678] Other glass specimens were of finer quality and finish, in particular a heavy solid baluster or knop pattern stem (Figure 101) and a foot, stem, and part of the bowl with milled thread-work to the base of the bowl and a hollow knop that may be Venetian work from about 1670 (Figure 102). [679] Also found were the partial base and bowl of a pedestal bowl, generally used for serving sweetmeats, and a small flask in good

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[675] See above, p. 200 for an explanation.

[676] Charles Truman, *English Glassware to 1900* (London, 1984), pp. 9-10.

[677] Robert Charleston, *English Glass and the Glass Used in England c. 400-1940* (London, 1984), p. 159.

[678] Plot, *Natural History*, p. 258.

[679] See very similar example excavated from Nonsuch Palace: Robert Charleston, 'Fine Vessel Glass', in Martin Biddle, *Nonsuch Palace, The Material Culture of a Noble Restoration Household* (Oxford, 2005). pp. 246-7.

Figure 101. Hanwell, HANK19/009/G12, stem of wine glass.

Figure 102. Hanwell, HANK19/009/G7, foot stem and bowl of wine glass.

quality green glass of a type described by Paul Courteney as an apothecary's bottle.[680] Large quantities of glass from broken wine bottles were excavated as well as two intact examples (Figure 103). Analysis of the fragments suggests that a minimum of twenty-three separate bottles were discarded into the moat. The 'onion' shape of the bottles accords well with production from the second half of the seventeenth century although assigning more specific dates is problematic and the forms, as generally recognised, seem to belong more to the 1680s than 1670s.[681]

Figure 103. Hanwell, HANK19/009, Wine bottles and garden urns under excavation.

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[680] Paul Courteney, 'Vessel Glass', in Kirsty Rodwell and Robert Bell, *Acton Court. The Evolution of an early Tudor courtier's house* (London, 2004), p. 344.

[681] See for example Fay Banks, *Wine Drinking in Oxford 1640-1850* (Oxford, 1997).

Figure 104. Hanwell, HANK19/013, selection of clay pipes.

CLAY PIPES AND DOMESTIC POTTERY . Around 2.8kg of clay pipe were excavated including 89 pipe bowls. They were all reasonably consistent in size and form and corresponded closely with Oxford type B dated to the period 1650 to 1690 (Figure 104). [682] A single example bore the initials E and G, although makers' marks on the foot or spur of the pipe were unusual prior to the eighteenth century. [683] It has not proved possible to identify who this maker was from published sources. Comparatively little pottery of a domestic nature was excavated. The single most striking find, whose fragments were recovered over the course of two seasons, 2018 and 2019, was a complete tin-glazed earthenware plate with cobalt blue under-painting, generally known as Delftware (Figure 105). The composition consists of an

[682] Adrian Oswald, 'Clay Pipes' in Tom Hassell et. al. 'Excavations in St. Ebbes, Oxford, 1967 -1976' *Oxoniensia*, Vol. XLIX (1984), p. 253.

[683] Adrian Oswald, *Clay Pipes for ther Archaeologist* (Oxford, 1975).

arrangement of fruit, probably pears and grapes, set on what may be a shelf or a table top with a drape bearing a snake-like motif. The plain rim and simple free-style of painting, with a slightly abstract feel, argues for an early date, perhaps around the middle of the seventeenth century. The question as to whether it is of English or Dutch provenance is not easily resolved as Dutch potters and materials were present in English manufactories throughout the seventeenth century. [684] The closest parallel, bearing strikingly similar iconography, has been identified as Dutch and dates from well into the following century and it may represent an elaboration on a well established pattern that has perhaps evolved over decades (Figure 106). [685] Further fragments of a large tin glazed earthenware container banded in blue and pink, probably the base of an apothecary's jar, were recovered together with small quantities of salt-glazed stoneware.

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[684] Anthony Ray, *English Delftware* (Oxford, 2000), p. 4.

[685] Mellors and Kirk, 'A Dutch polychrome Delftware dish, c1770'. Sale Catalogue (Nottingham, 2021).

Figure 105. Hanwell, HANK19/009, tin glazed earthenware plate.

Figure 106. A Dutch polychrome Delftware dish, c1770
by courtesy Mellors and Kirk,Auctioneers.

COINS. Coins in general were few and far between in the garden but a particularly significant example was recovered from the moat. This was a seventeenth-century copper alloy tradesman's token. On the obverse it was marked RICHARD. SHORT. IN. WARDENTON with the arms of the Grocers Company and on the reverse IN. YE. COVNTY. OF. OXON. MERCER with, in the centre, HIS HALF PENY (Figure 107). Coincidentally Alfred Beesley had an example in his collection.[686]

Figure 107. Hanwell, HANK20/009, Seventeenth-century token by Richard Short of Wardington (Reverse).

[686] Beesley, *History of Banbury,* p. 479.

The British Museum also has a specimen that they date from between 1648 and 1672.[687] An authority for the Portable Antiquity Scheme explained the context:

> To deal with a lack of small denominations in the regal coinage civic institutions and individual business people issued copper-alloy tokens between 1648 and 1672 (1679 in Ireland); the end date resulting from the reintroduction of farthings in copper alloy by Charles II.[688]

Short was born in 1638; his wife, whose name was unrecorded gave birth to a daughter Anne in 1674.[689] It seems likely, therefore, that the token dates from the late 1660s/early 1670s. His headstone in Warmington churchyard reads, 'Here lyeth the body of Richard Short who departed this life April 1st 1715.'

METALWORK. Although not specifically referred to by Plot one might have expected to see a variety of other devices or curiosities displayed within the 'House of Diversion'. Presumably some of the 'instruments' removed by John Cope after Anthony's death may have been shelved here.[690] There is limited evidence for this although a turned copper alloy finial discovered in 2019 almost certainly came from a lantern clock after the pattern of one by George Harris, the maker of the Hanwell church clock, sold by Bonhams in 2006.[691]

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[687] British Museum, on-line catalogue, https://www.britishmuseum.org/collection/object/C_1994-0516-200, accessed 6 July 2021.

[688] Portable Antiquities Scheme, https://finds.org.uk/counties/findsrecordingguides/tokens/#17th-century_trade_tokens, accessed 6 July 2021.

[689] *Wardington, St. Mary Magdalene, Oxon. Parish Registers,* ed. Colin Harris (Oxford, 1988), p. 103.

[690] See above, p. 246.

[691] Bonhams sale catalogue for 13 June 2006, https://www.bonhams.com/auctions/24663/lot/49/?category=list , accessed 6 July 2021.

Figure 108. Hanwell, HANK20/ 009, lead braid.

A curiously twisted fragment of lead was initially thought to have been a folded section of window came but closer examination revealed it to be a section of cast lead made to mimic a fine twisted cord or perhaps braided hair and so is almost certainly an element from a fine figurative lead sculpture. Surviving examples of lead sculpture of the period are quite rare, largely because of the ease with which the metal can be melted down and reused, and a convincing parallel has yet to be found (Figure 108).

STONEWORK. Elements of stonework and other building materials associated with the presence of a fountain and other water works are covered below [692]

Although there are several more years of analysis and research to be done the assemblage of finds from the moat surrounding the site of the 'House of Diversion'

[692] See below pp. 327-44

begins to tell of a very specific pattern of activities within a defined time frame. The fine quality drinking vessels, numerous wine bottles and frequent clay pipes together with comparatively little in the way of other forms of domestic debris: pots for cooking and animal bone for example, all suggest gatherings that are primarily social and unsurprisingly, probably male focussed. Whilst clearly the garden pots were deposited as part of the process of demolition there is no recognisable separate phase of occupation although the domestic debris tended to be sealed by the destruction rubble and much of the glass had sunken into the underlying silts. Quantities of finds recovered argue for a fairly short period of occupation and presumably quite intermittent as visitors came and went. As the dating of the demolition is defined by the concept of *terminus post queen* it cannot have taken place prior to 1664, the date on one of the pots. Indeed it is hard to imagine a context prior to Sir Anthony's death in 1675 where such destruction could have been countenanced. Evidence from the glass demonstrates activity on site in the 1670s although from a stylistic point of view both the wine bottles and clay pipes hint at the possibility of occupation continuing into the 1680s.

Reconstructing the 'House of Diversion'

In order to appreciate the way in which Sir Anthony's scientific interests were expressed we need to consider the layout of the gardens and in particular what may have been the centre point, the 'House of Diversion' (Figure 56). A key question must be how confident we are that the site excavated is in fact the location of the 'House of Diversion' as described by Plot. To recap Plot's description:

> There are some other *Water-works* at the same Sir *Anthony Cope's, in* a House of *Diversion* built in a small *Island* on one of the *Fish-ponds*, Eastward of his House, where a *Ball* is tost by a *Column* of *Water* and artificial *Showers* descend at pleasure; within which they can yet so place a *Candle,* that though one would think it must needs be overwhelmed with *Water,* it shall not be extinguish'd &c [693]

We are certainly on an island in the right location relative to the house and, as it is described as 'built', we must assume a structure with walls and a roof inside which are the waterworks. Putting fountains and other water-powered special effects indoors is not particularly unusual, as has been noted at Enstone and Wilton, although in these instances the structures were elaborately decorated grottoes. [694] Perhaps a relatively plain setting for the Hanwell waterworks underlines a more studied approach to the engineering involved and the science that that implies.

The evidence as to the precise conformation of the building is all rather circumstantial and based entirely on the destruction debris recovered from the moat. The presence of a high proportion of tapered ridge tiles suggests a pyramidical roof

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[693] Plot, *Natural History*, p. 74.

[694] See above, pp. 120-7 for Enstone and pp. 140-4 for Wilton.

arising from a square or, more likely, octagonal, floor plan. The survival of large quantities of wall plaster that had been pressed against timber laths indicates a timber framed building with evidence of a 'pebble-dashed' or roughcast effect on some panels, possibly on the exterior, as well as combed decoration, sometimes known as pargetting or pinking. This is a technique to create a waterproof finish that, according to Ronald Brunskill, 'was most popular in the second half of the 17C.'. [695] John Steane and James Ayres note examples from south Oxfordshire at Markham and Denchworth and an example of roughcast, possibly medieval in date, from Abingdon. [696] Although not a common technique in the region there are examples of pargetting in Banbury: numbers 85-87, High Street dated 1650 and 12, Market Place, also of the seventeenth century (Figure 109).

Figure 109. Banbury, 85-87, High Street, pargetting of 1650.

[695] Ronald W. Brunskill, *Illustrated Handbook of Vernacular Architecture* (London, 1978), p. 66.

[696] John Steane and James Ayres, *Traditional Buildings in the Oxford Region c. 1300-1840*, (Oxford, 2013), p. 18.

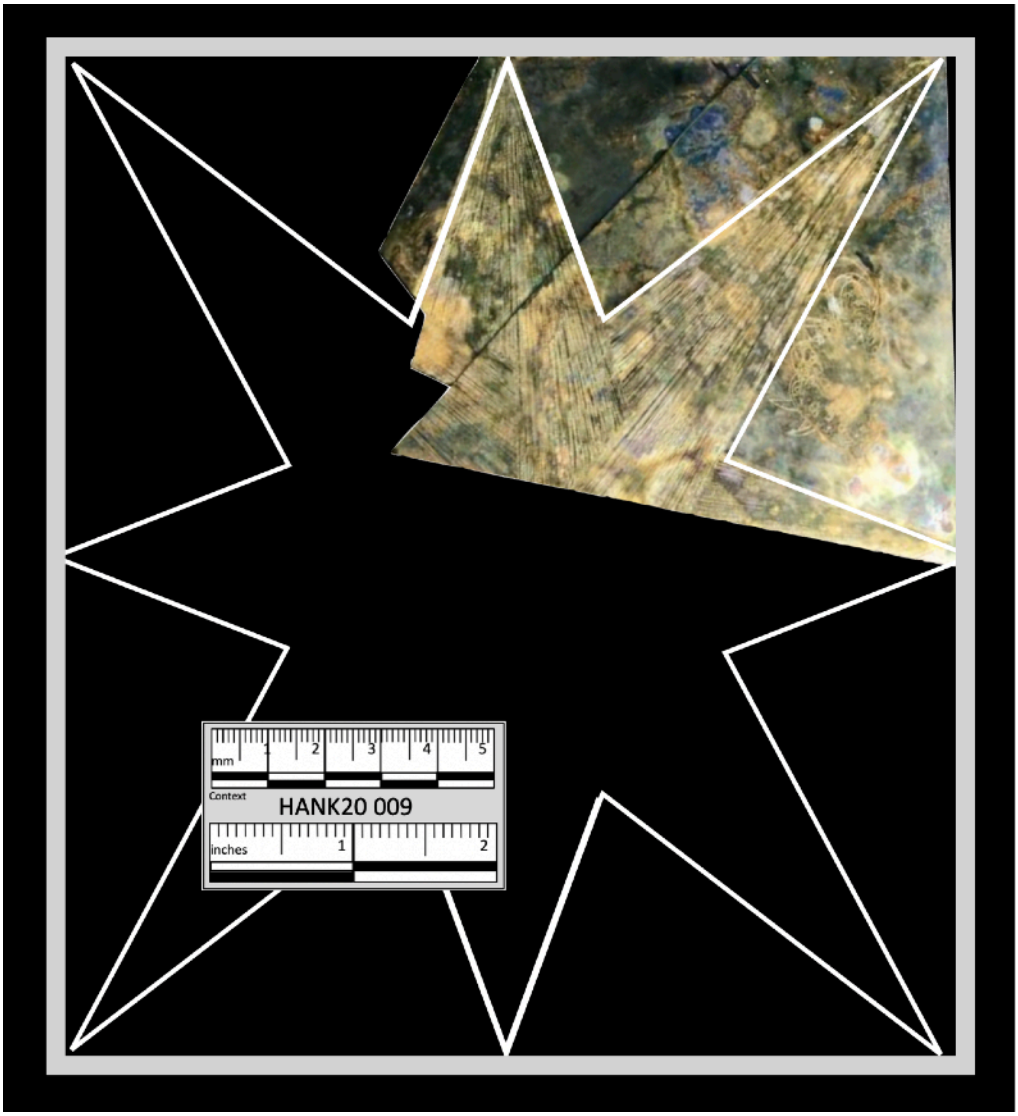

Figure 110. Hanwell, HANK19/009, fragment of engraved window glass with restored outline.

There is ample evidence for glazing with fine sheets of cylinder glass set within lead cames. The shaping of the surviving fragments of glass point towards a simple design of upright rectangular panels with at least one of them being marked with a large engraved star (Figure 110). This seems to be a unique find and hints at decorative elements that match quite well with an interest in natural phenomena, indeed, may even have constituted an invitation to contemplate the heavens through the windows of the 'House of Diversion'. Any flooring was removed as part of the programme of levelling the island and filling in the moat but a number of thin, carefully finished

stone slabs were recovered. A further series of slabs with rather roughly chased grooves may have been inserted into the floor to drain occasional splashes from the waterworks.

It is assumed that the fountain, capable of suspending a ball in the air and creating descending showers, was placed centrally within the building. Evidence for this includes fragments of a large diameter, up to 2m, fluted stone bowl pierced at various points for incoming pipework (Figure 111 and 112). In addition a small copper alloy quill, a thin bore pipe used to create fine jets of water, was found as well as a lead cone that may have been an element designed to create an umbrella shaped spray. A number of curved faced blocks could have formed the base for a fountain in the candelabrum style as seen at Castelli, Gaillon and, in this country, Wilton in Wiltshire.

Fountains in the sense of streams of water discharging into a basin under gravity had been part of the European scene since Roman times and featured in a number if monastic sites as for example in the twelfth century plan of the plumbing at Canterbury. [697] An example of this type of fountain is illustrated in the 1499 edition of Colonna's *Hypnerotomachia Poliphili* but working with high pressure pipelines that would throw plumes of water high into the air, taxed the abilities of early engineers.

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[697] *Eadwine Psalter* (Cambridge, Trinity College MS R.17.1) pictured at https://www.canterbury-cathedral.org/wp-content/uploads/2014/02/IMG_5979.jpg

Figure 111. Hanwell, HANK18/009, fragment of fountain bowl under excavation.

Figure 112. Hanwell, HANK20/009, fragments rim of fountain bowl.

Christopher Thacker suggests that the 'spouting dragon headed fountain described in Stephen Hawes' *Passetyme of Pleasure* of 1509 is the first reference in English to a source of water operating under pressure, an achievement of Renaissance technology, unknown to the Middle Ages.' [698] However, recent work on the fountain in the market place at Huy in Belgium demonstrated water being brought and raised under pressure via lead pipes from over a kilometre away in 1406 (Figure 113). [699] An important example of a candelabrum fountain was at the Chateau de Gaillon, Normandy, commissioned in 1506 from the Genoese sculptors Agostino Solari, Antonio della Porta and Pace Gazini, and, according to Esther Godfrey was 'one of the earliest and most important fountains of the sixteenth century, observed by generations of English noblemen' (Figure 114). [700]

In Italy work on a key Medici garden, Giardino di Castelli, Tuscany, was begun in 1537 under Cosimo I (1519-74) who commissioned Niccolò di Raffaello (1500-50), known as Tribolo, to undertake the design. Luke Morgan considers that this marked, in garden design, the 'establishment of the Renaissance repertoire'. [701] The enormous fountain based on a statue of Hercules strangling Antaeus by the sculptor Bartolomeo Ammannati (1511-92) dominates the garden (Figure 115).

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[698] Christopher Thacker, *The Genius of Gardening – The History of Gardens in Britain and Ireland (*London, 1994), p. 40.

[699] C. Peters, ' Huy: Archaeological study prior to the Restoration of the market fountain called *li bassini'*, *Chronicle of Walloon Archeology*, vol. 18 (2011), p. 156-9.

[700] Elizabeth Godfrey, 'Sources for the New Fountain', in Keay and Watkins, *The Elizabethan Garden at Kenilworth Castl*e, p. 110.

[701] Luke Morgan, *A Cultural History of Gardens in the Renaissance* (London, 2013), p. 22.

Figure 113. Huys, Belgium, the Fountain. Photo © Jean-Pol Grandmont.

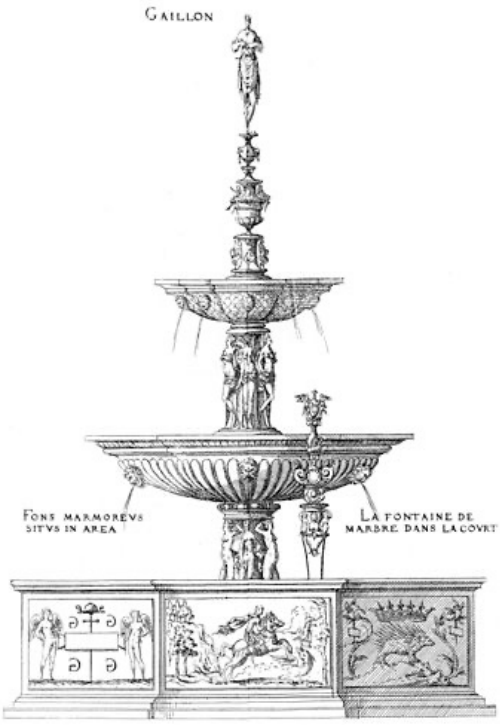

Figure 114. Gaillon, the fountain, engraving from 1576. [702]

[702] From Jacques I Androuet du Cerceau, *Le premier volume des plus excellents Bastiments de France* (Paris, 1576).

Figure 115. Giardino di Castelli, Florence, the fountain of Hercules by Ammannati.

Water was supplied initially via an aqueduct which Vasari records had to be completed prior to work on the garden starting. [703] Another garden essentially built around fountains was at the Villa d'Este in Tivoli just outside Rome. Created on a series of terraces rising up a steep slope towards the villa at the crest of the hill each upward step is accompanied by the sound and sight of water and each terrace has some new marvel to entertain and inspire including a water organ and the famed walk of a hundred fountains. Kirsty McLeod sums up the garden's impact and *raison d'être* in these terms, 'Water, used extravagantly and scientifically, was the medium of the garden, the means by which its complex mix of iconography, allegory, family history,

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[703] Giorgio Vasari, *The Lives of the Painters, Sculptors and Architects,* vol. 3 (London, 1963), p. 169.

learning and personal glorification could be expressed.' [704] The key feature demonstrated by these Italian gardens is the sophisticated ways in which comparatively limited quantities of water were gathered, husbanded and exploited through channels, conduits and pipework, a tradition born out of technical expertise but also little water, a lack that was not part of the English experience.

Similar styles of fountain were introduced into England from the latter part of the century, although a notably early example in bronze is preserved in the Victoria and Albert Museum (Figure 116). This came from the courtyard of the now destroyed Cowdray House in West Sussex and dates from around 1536, attributed to the Florentine sculptor Benedetto da Rovezzano. [705] The recently re-imagined example of around 1575 at Kenilworth (Figure 117) and the great fountain at Hampton Court from the late 1580s are further examples of the feature whilst a key surviving instance exists at Wilton, an example from the Elizabethan garden provisionally dated to 1577. Fountains featured at John, 1st Baron Lumley's house and gardens at Nonsuch in Surrey from the 1570s with a possible precursor to the Hanwell 'waterworks' illustrated in an inventory of the time as a table fountain (Figure 118) [706].

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[704] Kirsty McLeod, *The Best Gardens in Italy, a Traveller's Companion* (London, 2011), p. 199.

[705] https://collections.vam.ac.uk/item/O126034/fountain-fountain-da-rovezzano-benedetto/. Accessed 3 August 2022,

[706] Mark Evans ,*Art Collecting and Lineage in the Elizabethan Age: The Lumley Inventory* (London, 2010) , unpaginated.

Figure. 116. Bronze fountain from Cowdray House in the V & A.

Figure 117. Kenilworth Castle, the reimagined fountain based on a design from around 1575.

Figure 118. Nonesuch Palace, table fountain as illustrated in the Lumley inventory

A most remarkable survival from early in the seventeenth century is the Venus Fountain in the centre of the Fountain Garden defined by the rebuilt wall of the medieval inner bailey at Bolsover Castle, Derbyshire, the chivalric fantasia of William Cavendish, 1st Duke of Newcastle (1593-1676). Dating from the early 1630s the Historic England listing describes the fountain in these terms: 'It has a deep octagonal well with a crenellated parapet and niches in the inner walls and a central pedestal with four cylindrical projections supports a life-size statue of Venus emerging from her bath' (Figure 119). [707] Other embellishments included lion masks, busts of Roman

[707] Historic England Listing, https://historicengland.org.uk/listing/the-list/list-entry/1000674, accessed 14 November 2020.

emperors (a set of recently commissioned replacements now exist), and four replica *puer mingens* or 'pissing boys', not an uncommon motif for the period. James Campbell and Amy Boyington wrote of the figures, 'The *puer mingens* motif for this fountain appears to symbolise the lustful intentions and erotic desire of the satyrs towards Venus'. [708] Lucy Worsley picks up on the idea already embodied in our consideration of the development of water gardens in assessing what she calls its 'artisan mannerist style' in 'both its classical and native influences' and concludes, 'It becomes clear that he [William Cavendish] was a well-informed patron, making a deliberate choice to turn away from the art of the continent to produce a more personal, local version: a blend of classicism and sexual pleasure'. [709]

Figure 119. Bolsover Castle, the Venus Fountain.

[708] James Campbell and Amy Boyington, 'The problems of meaning and use of the *puer mingens* motif in fountain design 1400–1700', *Studies in the History of Gardens & Designed Landscape,* vol. 40, no. 2 (2019), p. 7.

[709] Lucy Worsley, 'The "artisan mannerist"style in British sculpture: a bawdy fountain at Bolsover Castle', *Renaissance Studies,* vol. 19, no. 1 (2005), pp. 83-109.

Figure 120. Hanwell, HANK20/009, limestone finial

As far as recreating the internal arrangements for the fountain within the ‘House of Diversion is concerned several factors need to be taken into consideration. The indoor table fountain with a central obelisk from Nonesuch may provide a context for the oolitic limestone finial recovered from the moat in 2020 (Figure 120) On the other hand the number of curved dressed stone blocks suggests a circular base with a diameter of around 2.5m. Several finely shaped fragments of ironstone moulding were also excavated none of which would fit with any conventional architectural element of such domestic features as door or window surrounds. The fact that the fountain also had to provide descending showers points to the fact that

there may have been some kind of superstructure, a simplified version, perhaps, of the kind of canopies over the

Figure 121. Trinity College, Cambridge, fountain 1601.

Carfax Conduit from Oxford or the early seventeenth-century fountain at Trinity College, Cambridge (Figure 121). Equally, fanciful mouldings, in what has been termed the 'mannerist' style, featured in gardens from the late sixteenth and early seventeenth centuries, the extravagant arches above the garden walls at Montacute house being a case in point. [710]

Given the setting and the likely presence of a central fountain on a circular base an octagon is probably the most aesthetically satisfying arrangement for the ground plan of the building. In this context thoughts immediately turn to the octagonal Tower of the Winds in Athens designed by the architect Andronicus of Cyrrhus between 100 and 50 BCE and its Oxford incarnation on top of the Radcliffe

[710] Historic England Listing, https://historicengland.org.uk/listing/the-list/list-entry/1207425, accessed 12 March 2021.

Observatory building, completed by James Wyatt in 1794. However, a more useful parallel is the octagonal banqueting house illustrated as being part of Sir Francis Bacon's Pondyards at Gorhambury (Figure 24). Whilst the precise provenance of this drawing remains questionable, and it almost certainly belongs to another garden from the eighteenth century, the image of a tall well lit, pyramidically roofed summerhouse is a compelling one. Although is not possible to discern details of the materials used, the height of the door way with a light above indicates a structure that its essentially two storeys high with what in effect is floor to ceiling glazing. The fact that the island only appears to be approachable by boat is intriguing given that no trace of a bridge has been found at Hanwell.

Also of interest is the small octagonal banqueting house within an octagonal moat at Hunstanton Hall, Norfolk dated to around 1640 (Figure 43). The earlier Tudor period saw many octagonal banqueting houses for example at Hales Place, Kent and Long Melford Hall, Suffolk whilst timber versions were erected at Hampton Court and at Windsor. [711] Other architectural forms which may establish a context for the construction of the 'House of Diversion' include small lodges such as the Dutch Cottage, Rayleigh, Essex that is dated 1621. The building is octagonal, timber-framed and plastered, over a brick plinth. [712] Polygonal dovecotes of the period also suggest contemporary forms such as the brick example dated 1641 at Hellens, Much Markle, Herefordshire (Figure 122). [713] The seventeenth-century examples at Wichenford and

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[711] Henderson, *Tudor House and Garden*, pp. 155-64.

[712] Historic England Listing, https://historicengland.org.uk/listing/the-list/list-entry/1112678, accessed 12 March 2021.

[713] Peter and Jean Hansell, *Doves and Dovecotes* (Bath, 1998), p. 131.

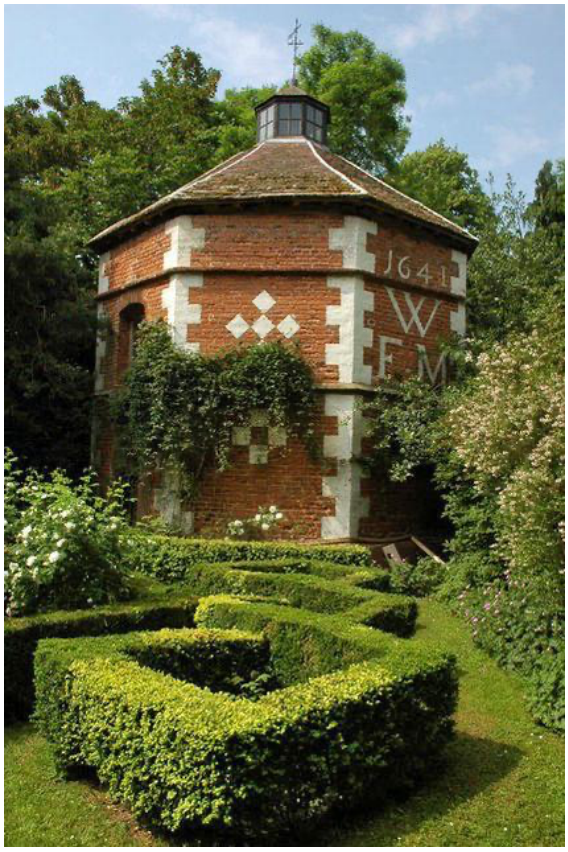

Figure 122. Hellens, Much Markle, octagonal brick dovecote.

Figure 123. Hawford, Worcestershire, square timber frame dovecote.

Hawford, Worcestershire, whilst square in plan, are turriform, timber-framed with rendered wattle-and-daub infill and on a coursed sandstone rubble plinth under a tiled roof (Figure 123). [714] The overall dimensions of the 'House of Diversion' remain a similarly speculative matter although given that the diameter of the central fountain would have been around 2.5m (8 feet) and allowing room for circulation whilst avoiding occasional splashing then a minimum diameter of 6m (20 feet) seems about right. If the fountain was to perform such tricks as tossing a ball on a column of water, given the possibility of a fairly elaborate superstructure in at least three tiers, then we should perhaps consider a minimum height of 4m (12 feet) for the display to show at its best. Allowing for clearance above this we must envisage a structure equivalent to a building of two storeys, albeit probably open to the roof on the inside. There is also the question of how much space there may have been between the central structure and the perimeter wall to the island. Despite being largely robbed out, the line of the wall was clear and the recovery of several well-shaped coping stones enabled the setting for pots to be recreated. The presence of the planted pots shows that access space around the perimeter would be needed both to attend to the plants but also perhaps allow a walk way outside the building for further promenading. No evidence was found for a bridge to the island. This might have been confidently expected along the side facing the Castle with access being down the walkways and stairs of the east terrace. There were no traces either of springing in the perimeter wall for a stone arch or of timber posts in the moat or on the island for a timber bridge. It is possible that access was by boat only but the most likely explanation is simply that the bridge was at a higher level and all traces were removed during demolition.

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[714] Historic England Listing, https://historicengland.org.uk/listing/the-list/list-entry/1301822, accessed 12 March 2021.

All of this has enabled an initial attempt at reconstruction to be undertaken to create an image of a tall octagonal timber framed tower with a rendered exterior and a pyramidical tile roof set centrally on its octagonal island and surrounded by the perimeter wall garnished with planted terra-cotta pots and urns (Figure 124). Inside there is an elaborate canopied table fountain (Figure 125). No doubt future work on the finds will enable us to refine these images but they form a valuable starting point for further discussion of the materiality of Sir Anthony's 'House of Diversion'.

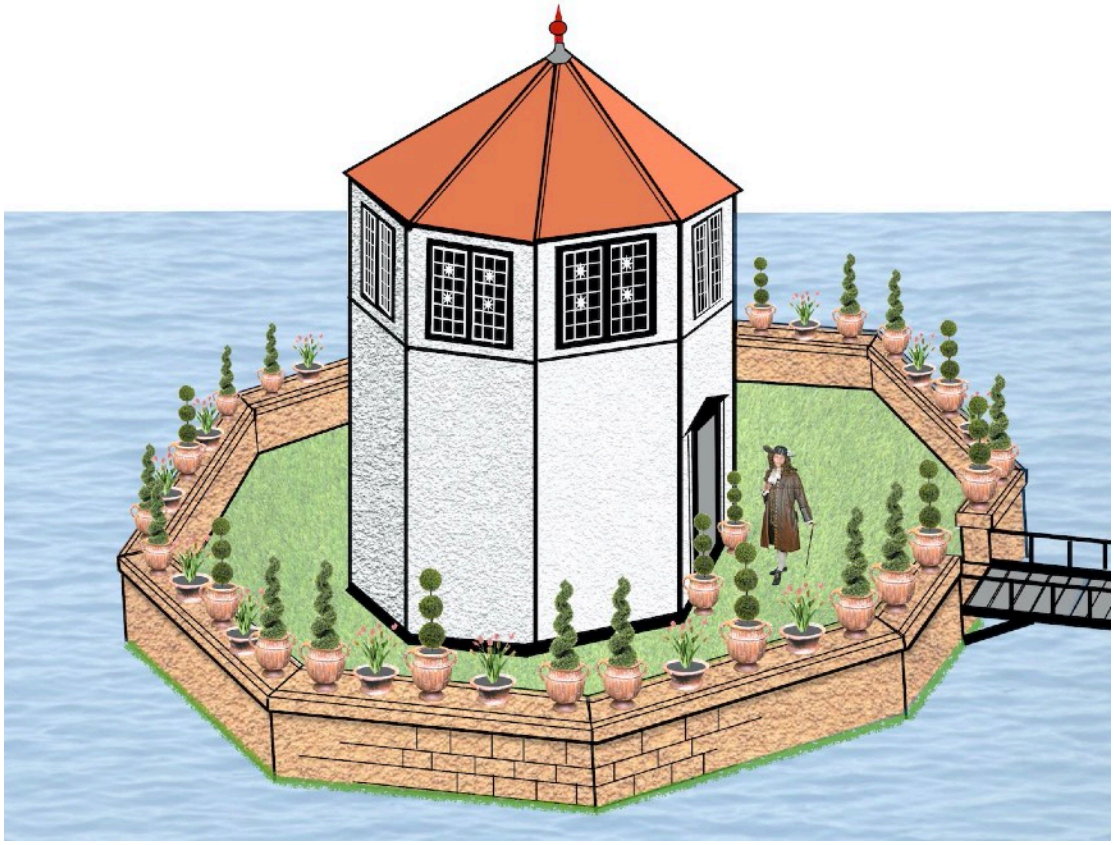

Figure 124. Hanwell, reconstruction of the ‘House of Diversion’.

Figure 125. Hanwell, reconstruction of central fountain, drawing by Louise Regan

CHAPTER 7, CONCLUSIONS

At the outset a number of key questions were posed that we are now in a position to answer, at least in part. Essentially these answers consist of the account of the materiality of the seventeenth-century garden with information about its dating, stylistic influences and development together with ideas about the occupation and use of the site. Beyond that we have the related history of the family and their friends and acquaintances and an appraisal of the extent to which Plot's comment about the household at Hanwell being the real 'New Atlantis' is justified. The starting point was Plot's extraordinary assertions about Sir Anthony Cope and his household that provoked this investigation into him, his family and his estate. We have seen how the development of the park at Hanwell was characterised as something that arose out of an established tradition of garden making that began with medieval designed landscapes, both secular and monastic. Post-Reformation an existing body of expertise was drawn on that continued working with water to create landscapes that were both productive and decorative and that, in the hands of certain engineers and virtuosi, became a showcase for matters technological and thinking scientific. Whilst there was a nodding acquaintance with continental practice, especially in the engineering of the more elaborate waterworks during the early years of the seventeenth century, much of what was undertaken was firmly grounded in local practices.

The Gardens at Hanwell: Construction and Phasing

As already noted, in common with many historic gardens, dating evidence is often hard to come by. At Hanwell we have the documented history of the medieval manor and the arrival of the Copes in 1498 leading to the construction of the castle, the requirement that it should be finished in 1513 and the bequest to undertake work on a fishpond in 1525. There is no archaeological evidence to positively identify and date any work on the gardens at this early stage. The over-whelming likelihood is that the grand house was accompanied by an equally grand garden and park throughout the sixteenth century. By analogy with other properties we could speculate that the terracing below the castle to the east, the adjacent square pool and the well constructed park boundary wall were from this period.

We have noted the financial circumstances of Sir Anthony Cope, the 1st baronet and his brother Sir Walter and covered in detail Sir Walter's work on his elaborate water garden in Kensington early in the seventeenth century. The level of spending, the need to impress royal visitors and this family interest in water gardens all indicate the possibility that elements of garden making involving large scale civil engineering works to create the extensive system of ponds at Hanwell came about early in the century before the brothers died in 1614. The amount of debt incurred and borne by subsequent generations of the family make it unlikely that major works could have been carried out after this date. It is striking that when we come to works commissioned by Sir Anthony, the 4th. baronet, they are characterised by what appears to be reused and presumably fairly cheap materials and shoddy construction.

Sir Anthony's investment in science both in terms of purchasing instruments and apparatus and intellectual endeavour is well attested to by Plot and we can securely date some of his additions to the garden. Evidence from clay pipes and pottery puts the cascade below the existing lake (Pond b) into the 1660s/1670s whilst the 1664 dated pot is a strong indication of when developments on the site of the 'House of Diversion' were underway. A period of garden improvement in the years immediately after the Restoration makes perfect sense. An endpoint for this structure in the 1670s / 1680s is also well supported by artifactual evidence. Afterwards we we have conversion to agricultural pursuits in the eighteenth and nineteenth centuries and a return to being a garden from the twentieth century onwards.

The gardens at Hanwell: Influences and Design.

Working from the timeline outlined above we can move on to the question of influences on the design of the gardens and it must be said from the outset that there is nothing stylistically distinctive about the layout at Hanwell that marks it as being of a specific time or particular style. The great chain of ponds whilst impressive could belong to almost any period from the middle ages onwards. The water parterre with its octagon within a square would happily fit into the second half of the sixteenth century and is comparable with similar features at Bindon, Raglan and Chipping Campden. What the archaeology tells us is that the parterre was engineered within an existing square pool and so many well belong to the suggested building programme of the early seventeenth century. All that can be said with confidence is that the works drew on the long established traditional skills of managing water within the landscape in ways that were productive and attractive.

The matter of 'Baconian' influence is an interesting one. It is perhaps worth remarking that his well known essay *On Gardens* was published in 1625 and if taken as a blueprint could have been applied to any number of pre-existing gardens. His work was expressing a preference for elements of garden style that were already well established. It was summative rather than predictive or visionary. Nor are there any references from the period commending Bacon's ideas and committing to create a garden in line with his recommendations. Even Bushell's formal gardens at Enstone could have drawn their inspiration from elsewhere. If one were looking for a near contemporary source that summed up something of the ethos of the view of the park at Hanwell from the castle it would be

in Henry Wotton's *Elements of Architecture* were he suggests, 'a general view of the whole *Plott* below' reveals 'a delightful confusion'. [715] This confusion would be heightened at Hanwell as the regularity of the east terrace and water parterre broke out into the irregularly shaped pools and wandering walks of the lower part of the valley. the over-all controlling factor at Hanwell seems to be topography rather than aesthetics

Of course there are other ways in which garden makers can influence the tastes of others, through their deeds perhaps more than their writings. Bacon's own garden, the distinctive and complex Pondyards at Gorhambury lacks precise dating with Henderson suggesting that,

> By I608, however, he was in a position to consider greater and more luxurious improvements to the property, in particular the creation of an elaborate water garden in the pondyards in the north-east corner of the estate. By I608 he would have wanted his house and gardens to reflect his ambition, if not yet his power. [716]

Undoubtably the closest parallel for the Pondyards was Sir Walter Cope's water maze at Cope Castle that was being developed at much the same time if not a little earlier. This raises the possibility that, given that the two gentlemen were acquainted, there could have been some transference of ideas and expertise between the two projects perhaps via an unknown third party. Unfortunately we have no evidence for this. Bacon and Cope's development of these extraordinarily elaborate complexes of islands, moats, canals and ponds laid out in strict geometric order whilst echoing

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[715] Wotton, *Elements of Architecture*, p. 109

[716] Henderson, 'Sir Francis Bacon's Water Gardens at Gorhambury', *Garden History*, vol. 20, no. 2 (1992), p. 116.

earlier works appear to be almost a final flowering of the form that began with the medieval moated garden. The only other comparable site, renowned for its geometric complexity is at Tackley where the motivation appears to have been sporting rather than scientific.

Of course there is another sense in which a garden could be described as Baconian, as outlined earlier, it is a term that could be applied to somewhere that was organised along some particular scientific principle or designed specifically to promote or support scientific thinking and investigation, the gardens at Wadham being a case in point. We will explore this aspect of the gardens at Hanwell in the next section.

The 'Scientific' Garden at Hanwell.

Apart from the gardens at Wadham College it is difficult to identify in this country any other outdoor spaces seriously dedicated to science. Perhaps the closest parallel is the garden of Henry Winstanley (1644-1703) with its remarkable 'House of Wonders' at Littlebury in Essex. Winstanley was, as described by Taylor, 'printmaker, horologist, architect, engineer, inventor and businessman'. [717] His premises were operated as a commercial venture, Winstanley charging a shilling for admission at a turnstile. The attractions featured a variety of devices constructed, 'allegedly to amuse his new wife whom he married in 1683'. [718] The garden, probably laid out around 1677, included a moated mount with summerhouse and a windmill that according to Taylor was, 'an exhibit […] used to fill garden ponds, to drive hydraulic curiosities and to show that Winstanley was familiar with the then "modern" technology.' [719] However, Taylor also records that the attraction, together with his London based 'Water Theatre' was not opened until 1693 and apart from a tentative connection with Christopher Wren there is no evidence of a link back to Hanwell. Winstanley's garden was part of a money-making venture and sits well within the framework suggested by Pamela Long. She sets the scene for the early modern transformation of view points regarding technology that Winstanley and Sir Anthony may have been swept up in and considers the relevant factors to be:

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[717] Christopher Taylor, 'The house and garden of Henry Winstanley, Littlebury, Essex ', *Landscape History*, vol. 35, no. 2 (2014), p. 39.

[718] Ibid., p. 41.

[719] Ibid., p. 47.

> the development of commercial capitalism, the expansion of artisanal trades in general, the increasing cultural importance of objects and the development of conspicuous consumption on the part of elites. Construction and fabrication became connected not just to craft know-how and the making of things but to knowledge about the world itself. [720]

All of these could have been factors in the development of Sir Anthony's 'garden of science' but without testimony from those who used the garden it is impossible to cite specific instances of particular thoughts being sparked by individual locations.

Thinking back to the multiple ways in which gardens have the potential to advance scientific endeavour the varied terrain at Hanwell within such a large park would have meant that there were many opportunities for both solitary and social exploration of a range of stimulating environments. For the sake of completeness in examining the Hanwell environment a consideration of the Castle building itself is useful. There were clear advantages to be had from arranging accommodation around a central courtyard, benefits shared by late medieval colleges and hospitals. As well as conferring feelings of security and solidarity, there is also what Johnson calls the expression of 'the notion of community'. [721] The courtyard plan has many practical advantages relating to the control of resources and the management of risk. Casual incursions are prevented, visitors are monitored and controlled and strangers easily identified within the community of the courtyard. Beyond that the courtyard is above all a social space within which casual interactions can take place. The more formal business of walking and talking in a small group matches well with the terraced walkways at Hanwell where there is ample room to exchange learned discourse or

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[720] Long, *Openness, Secrecy, Authorship,* p. 246.

[721] Johnson, 'Meanings of Polite Architecture', *Historical Archaeology*, p. 49.

witty banter with the distant prospect of the Castle encouraging a different sense of perspective on whatever issues were being debated. Walking literally in the footsteps of kings may have contributed to general feelings of approbation. The sunken garden could have offered opportunities for more intimate conversations whilst the descending terraces and stairways east of the Castle no doubt provided an element of stimulation and excitement as the view of the lower part of the valley opened out on the approach to the 'House of Diversion'. The strong west to east linear design of the garden is maintained by the positioning of the water parterre at the foot of the east terrace and demonstrates a powerful sense of order. Not only is there an alignment but also, whether consciously or by topographical circumstance, the areas occupied by the Castle, possible bowling green, terraced walks and water parterre are broadly similar. The height of the eastern terrace overlooking the water parterre obviated the need for that distinctive presence in early modern gardens: the mount. The topography alone provided the view. There is evidence that the Castle had an enclosed gallery, sub-divided by Sir Anthony in 1605 prior to visit of Robert Cecil, the Earl of Salisbury, that would have commanded a view of the valley. [722] The geometric surrounds to the 'House of Diversion' and its contents express both order and wonder. We know something of the contents of the 'House of Diversion' with its balanced balls and descending showers that would doubtless have provoked reaction and discussion. We do not know if Sir Anthony kept any of his collectibles here and the finds from the surrounding moat speak primarily of the social activities of eating, drinking and smoking rather than of any experimental undertakings. Somewhere in the park the mill and its great engine indicate calculation and industry as well as offering

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[722] Anthony Cope, letter to earl of Salisbury, (August 1605), http://www.british-history.ac.uk/cal-cecil-papers/vol17/pp374-409, accessed 11 January 2021.

opportunities for practical engagement or 'tinkering'. Longer walks would have made it possible to explore the lower, wilder reaches of the valley and new perspectives obtained from the deer park to the south with its views of the Cherwell valley and the distant town of Banbury. This is, of course, essentially an exercise in the imagination but it chimes well with other accounts of the benefits of gardens to intellectual undertakings. Remmert sums up the many roles a garden could play in expressing his views on the thinking of Evelyn:

> Evelyn came to see the garden as a heterotopia, that is, as a space that exists as a physical reality and is part of the world. But at the same time, it was a place to retreat from that world where one could critically and systematically study the same, and was thus simultaneously positioned outside of it. The pleasure garden and the microcosm of learning, the kitchen garden and the laboratory, the real and the imaginary garden could no longer be separated. [723]

Plot's multiple references to aspects of the grounds at Hanwell and the additional features revealed by archaeology all support the conclusion that this was indeed an environment rich in challenge and stimulation.

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[723] Remmert, 'The Art of Garden and Landscape Design', *Gardens, Knowledge and the Sciences in the Early Modern Period*, p. 20.

Hanwell as the 'New Atlantis'.

The Cope family, having set themselves up at Hanwell early in the sixteenth century, became associated through the agency primarily of Sir Walter Cope not only with the Court but specifically with the Cecils and indulged themselves in the design and development of water gardens on a large scale, an interest shared with Sir Francis Bacon. The evidence suggests that the garden so created in the early decades of the seventeenth century became a kind of playground for the 4th Baronet, Sir Anthony Cope who, inspired by his time at Oxford and supported by like-minded individuals, turned his garden into something resembling a science based theme park (Figure 38). However after the death of Sir Anthony and the consequent disputes within the family the gardens fell into disuse. The archaeology has been able to discover and document some of physical remnants of this story from traces of the medieval landscape through to the creation of the terraced and walled water garden of the early seventeenth century and the later setting up of the 'House of Diversion' celebrated by Plot. Evidence regarding the construction and use of this feature informs our understanding of contemporary garden structures. The excavation and recording of the unique collection of terracotta garden urns from the 1660s have the potential of making a major contribution in the future towards knowledge about this aspect of gardening practice for the period. In charting the course of the growth of a scientific mind-set at Oxford around the middle of the seventeenth century links have been made with the households at Tangley and Hanwell in an attempt to explain and justify Plot's references to a 'learned society' and 'the real *New Atlantis*' and to set the works at Hanwell in a broader context of the contributions gardens made to the development of scientific thinking.

In terms of his own scientific interests we know that Plot examined and indeed collected specimens of the small-leaved elm within the park and searched, unsuccessfully, for freshwater oysters. He was clearly impressed by Sir Anthony's mill. We do not know if any of these encounters inspired any particular new insights for him, rather, it is safe to say that the experiences contributed to his developing understanding of a variety of natural histories. We can also reasonably conclude that the garden was an arena within which Plot was able to establish and expand his acquaintance with Sir Anthony and develop the kind of dialogues that led him to identify his host as 'the most eminent *Artist* and *Naturalist* while he lived, if not of *England*, most certainly of this *County'*. [724] Given the appellation of the 'New Atlantis' one can deduce that other learned and ingenious individuals exploited the gardens for scientific gain but they remain unidentified. Plot is not only the source of the title but may have been the main beneficiary and participant of this unusual garden.

In response to the key questions one can report that whilst it is likely that a medieval park and garden was supplanted by something more elaborate that was developed through the sixteenth century into a venue commensurate with the family's ambitions and social status we can only speculate as to the details. It is likely that a major programme of works was instituted at the start of the seventeenth century to extend and enhance the water gardens. This created the setting which Sir Anthony Cope, the 4th. baronet was able to introduce in the 1660s the elements that made his garden so admired by Plot. Apart from undoubtably being in the background of Sir

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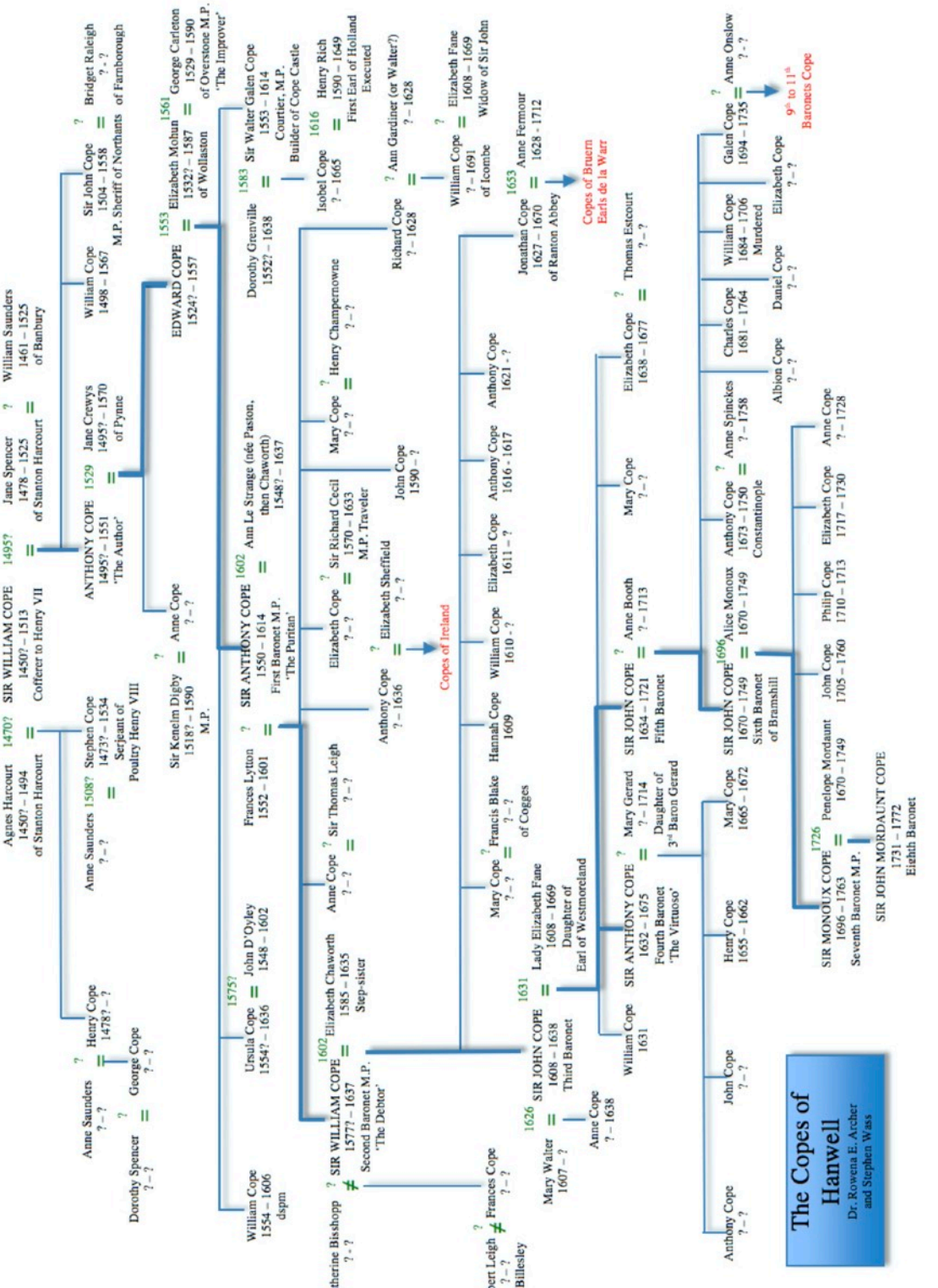
[724] Plot, *Natural History*, p. 73.

Anthony's enthusiasm for matters scientific there is no evidence of any particular connection to in terms of garden design to Francis Bacon. It was that enthusiasm that Plott was celebrating with his reference to *The New Atlantis*, a celebration that referenced some new elements in the garden and what Plot had learned about Sir Anthony's former companions.

At the start of this study it was characterised as a single story but in actuality Hanwell is a place where many stories intersect: the rising fortunes and the ultimate decline of a gentry family, the almost ruinous spending by the litigious Copes and their attempts to achieve status, the comings and goings of the spy, the musician, the weather-wise shepherd and the clock-maker and the triumphs and tragedies of Sir Anthony Cope, a man in love with science and secrecy who built a garden worthy of the title 'The New Atlantis'.

APPENDIX 1,

The Cope family Tree



APPENDIX 2,

Hanwell Park – Area Designations (See map p. 256)

HANA	The Island
HANB	The Cascade
HANC	Terrace N of Cascade reassigned to HAND
HAND	The Second Sluice
HANE	The Moated Platform Edge
HANF	The East Terrace Section
HANG	The ‘Temple of Flora’
HANH	The Lakeside Wall
HANI (E)	The Sunken Garden (East)
HANI (W)	The Sunken Garden (West)
HANJ	The Lower Sluice
HANK	The ‘House of Diversion’
HANL	The South Terrace Wall
HANM	Dam 4 Bypass
HANN	The Mount

APPENDIX 3,

Miscellanea Genealogica et Heraldica (1874) New Series, vol. 1, pp. 240-41

John Cope and Elizabeth Fane were maried upon shrouf tewsday in ye year 1631 at Westminster by ye Bishop of Lincolne, it being Valentine's day ye 14 of Feb.

My sonne Anthony was born at Abthorpe ye 16 day of Nouemb. being friday in ye year 1632 between 3 & 4 a clock in ye morning, he was Christened on ye 6 day of Decemb. by my mother ye Countes of Westmoreland, my brother the Earle of Westmoreland, & Sir William Cope, but Sir Gui Palmes was deputy for him.

My second sonne William was borne at Hanwell ye 3d day of Decem. being tewsday 1633 betweene 9 & 10 a clock in ye morning, he was Christened on ye 17th day, by my Grand: ye old Lady Cope, my Lord Say & my Lord Gerard. he dyed on ye 13th of Sept. 1634.

My sonne John was borne at Hanwell, ye 19th of Nouemb. being Wednesday, 1634 betweene 9 & 10 a clock at night, he was christened on ye 31 day by my mother ye Countes of Westmoreland, my brother Lee and my cossin Knightly.

My daughter Mary was borne at Brewerne ye 28th of Noue. being Monday in ye year 1636 betweene 2 & 3 a clock in ye morning she was christened on ye 9th of Decem. by my sister Rachell Fane, my sister Lee, & Sir Robert Jenkinson She dyed upon ye 10 Oct. 1639.

My daughter Elizabeth was borne at Brewerne ye 3rd of June being Sunday in ye year 1638, betweene 2 & 3 a clock in ye morning she was baptised on ye 10th day by my sister Lee, my sister Mary Cope & my cousin William Cope.

My dear husband Sr John Cope changed this life for a better upon Saterday morning ye 13th of October 1638.

William Cope & Elizabeth Cope were maryed ye 3rd day of January 1643 in ye chappell at Brewerne by Mr Robert Harris of Hanwell.

My sonne Henery was borne at Brewerne ye 23 Octob. being Wedensday in ye yeare 1644, betweene 3 & 4 a clock in ye afternoone, he was baptised on ye 12th of November by my Lady Wilmott, the Earle of Bath & Sir Thomas Pope (my son Ant' was deputy for my Lord of Bathe).

My sonne William was borne at Brewerne ye 12th of Febr. being thursday in ye year 1645 betweene 7 & 8 in ye morning, he dyed ye Wednesday following &was buried in ye chapel at Brewerne upon thursday.

My daughter Elizabeth was borne at Tangly ye 18th of Nouemb. being satterday in ye yeare 1647 betweene 6 & 7 in ye morning, she was baptised on ye 30th of November by Sir Edmond Bray, ye Lady Lacy & ye Lady Jenkinson

My sonne Richard was born at Tangly ye 30th Decem. being satterday in ye yeare 1648 betweene 4 & 5 in ye morning. he dyed ye friday seuenight after & was buried in ye chapel at Brewerne upon satterday ye 18th of January.

My daughter Rachell was borne at Tangly ye 18th of June being thursday in ye yeare 1650 betweene 5 & 6 in ye morning, she was baptised on ye 5th of Jully by the Countesse of Bath, ye Lady Darcy & ye Earle of Westmoreland.

My sonne William was borne at Brewerne ye 4th of Sept. being Thursday in ye year 1651 about 12 a clock at night, he was baptised on ye 28 of Sept. ye witnesses were Mis Childe, my son Anthony Cope & Sr William Walter.

APPENDIX 4,

Locations noted by Lady Elizabeth Cope.

Place	Month	Year
Abthorpe	November	1632
Hanwell	December	1633
Hanwell	November	1634
Brewerne*	November	1636
Brewerne	June	1638
Brewerne	January	1643
Brewerne	October	1644
Brewerne	February	1645
Tangly**	November	1647
Tangly	December	1648
Tangly	June	1650
Brewerne	September	1651

Modern spellings: * Bruern, ** Tangley)

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NOTE: At the outset of this study ample use was made of printed sources and manuscripts thanks to the good offices of the Bodleian Library. Unfortunately during the Covid 19 Pandemic access was severely restricted and sources that were initially examined in hard copy were increasingly referred to on-line. Where originally consulted in a library or archive the references are given in standard form. Sources that were only accessed on-line are also referenced appropriately but there were cases where work began in the library before shifting to an on-line version in which cases the bibliographic details, page numbering for example, may have changed. In these instances I have generally stuck with the original referencing to hard copies. Some key documents were purchased as high resolution scans and these are treated as if the original paper was to hand.

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