Piero de'Crescenzi's *Liber ruralium commodorum*: Unearthing the Origins of the Pleasure Garden

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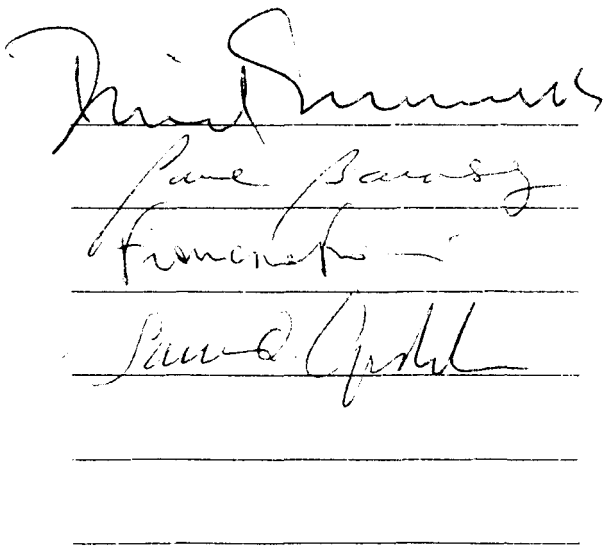

ABSTRACT

Piero de' Crescenzi's *Liber ruralium commodorum*, which was completed around 1306 and consists of twelve books, was the first major treatise on agriculture written in the middle ages. Although it is often mentioned in histories of medieval and Renaissance gardens, because it contains descriptions of pleasure gardens, there has never been a consideration of the pleasure garden descriptions in the context of the treatise as a whole. The main purpose of this dissertation is to recontextualize the role of the pleasure garden in an agricultural estate, by considering the relationship of Crescenzi's descriptions of pleasure gardens to the remaining agricultural books of the treatise. The dissertation begins with a consideration of Crescenzi's social, political, and intellectual backgrounds and how these influenced his decision to write a treatise on agriculture. Having placed Crescenzi in the context of the thirteenth-century encyclopaedic tradition, the treatise is then summarized, making special reference to the sources Crescenzi employed, which include Roman agricultural writers, and treatises on medicine and the natural sciences, among others. This summary, which reveals the breadth of Crescenzi's undertaking and begins to demonstrate how the pleasure garden relates to Crescenzi's endeavor, is followed by an exploration of the prevailing definition of art and of

agriculture, which includes a consideration of the status of agriculture in the medieval hierarchy of the arts. Having established the contexts of the author, the treatise, and the definition of agriculture, the pleasure garden descriptions are analyzed, showing how they relate not only to the rest of the treatise, but also to existing literary tropes and traditions. This analysis makes it possible, finally, to consider the aesthetic properties of pleasure gardens, which are simultaneously elevated from and rooted in agricultural theory and practice.

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INTRODUCTION

Two of Leonardo da Vinci's notebooks contain lists of books. One of them he labeled a "record of books I keep locked up in the chest;"[1] the other , it has been surmised, may have been a list of books he wanted to purchase.[2] These lists dated to 1503-4 and 1497 respectively, provide significant insight into Leonardo's varied interests. Both include the name "Piero Cressentio," surrounded by the likes of Pliny and St. Augustine. This Piero Cressentio, who is also referred to as Piero de' Crescenzi and Petrus de Crescentiis, was the author of the *Liber ruralium commodorum*. Begun in the thirteenth century and completed in the early fourteenth, his was the first full-scale treatise devoted to agriculture since Palladius' fourth century *Rerum rusticarum*. Leonardo's interest in an agricultural treatise is not surprising given his obsession with the natural world, but also with the role of human beings in transforming and shaping the world by means of art and technology. Even so, it is intriguing to speculate upon why Leonardo was interested

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[1] Madrid MS. II. 2b, transcribed in Jean Paul Richter ed., *The Literary works of Leonardo da Vinci* 2 (Los Angeles: University of California Press, 1977), p. 355. Many thanks to Karen Goodchild for alerting me to the presence of Crescenzi in Leonardo's book list.

[2] Codex Atlanticus, folio 210 recto, reprinted in G. D'Adda, *Leonardo da Vinci e la sua Libreria* (Milan, 1873); also reprinted in Richter and E. Macurdy, *The Notebooks of Leonardo da Vinci* (New York: George Braziller, 1954), pp. 1163-65.

in Crescenzi's work. Perhaps it was to get ideas for constructing the pergolas and other garden structures that are scattered throughout Leonardo's sketchbooks.[3] (figs. 1-3) Or perhaps it was to learn more about the physiology of plants and their growth patterns before representing them. (fig. 4) Or perhaps it was to gather information on how to dig wells and irrigate fields. At present, it is impossible to know whether or not Crescenzi's book was particularly important to Leonardo or wherein his specific interest in it lay, since his commentary does not extend beyond its presence on the book list. A closer look at Crescenzi's treatise and the wide range of subjects it covered, however, can begin to explain why this book would have appealed to Leonardo and why it would have been the first book on agriculture to appear in print in 1471, a mere ten years after the invention of the printing press.

The *Liber ruralium commodorum* was completed between 1305 and 1309 by the retired Bolognese lawyer Piero de'Crescenzi. Although Crescenzi declares that he has "tested" and "tried" ancient wisdom against his own experience, most of his work is based on existing texts, from Roman agricultural treatises to contemporary expositions on veterinary medicine, in keeping with the thirteenth-century encyclopedic tradition.

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[3] See for example, William A. Emboden, *Leonardo da Vinci on Plants and Gardens*, (Portland, OR: Dioscorides Press, 1987), *passim*; for the passages on gardens in the Notebooks, see Macurdy pp. 299; 1034-1035; 1036-1037; 1041.

As if in response to Vincent of Beauvais' comment that there should be a book devoted to all aspects of agriculture,[4] Crescenzi's treatise is a veritable encyclopedia of topics related to agriculture. The treatise includes a dedication and a preface and is divided into twelve books. In the first book Crescenzi describes the best location for a farm in terms of climate, winds, and the availability of water. Books two and three deal with the properties of plants, pruning and grafting, sowing fields, soil types, and the use of fertilizer. Books four and five are concerned with viticulture and arboriculture, respectively. Book six is an alphabetical listing of 133 different types of herbs, vegetables and other simples, prefaced by a chapter on the virtues and origins of herbs. Book seven concerns the uses of meadows and groves and how they may be created through human intervention. Book eight describes the different types of pleasure gardens and how they are constructed. Books nine and ten both deal with the animal world, the former with domesticated animals and the latter with techniques for hunting wild ones. And the last two books provide no new information, but recapitulate the first ten: book eleven summarizes the previous books in order to make them accessible to memory, and the twelfth book is an agricultural

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[4] Serge Lusignan, "Les arts mecanique dans le *Speculum Doctrinale* de Vincent Beauvais," in *Les Arts Mecaniques au Moyen-Age,* (Montreal: J. Vrin, 1982), p. 43.

calendar that arranges some of the information contained in the treatise in short entries for each month. Listing all of the topics Crescenzi covers reveals the breadth of his treatise, but discovering the wide variety of scholarly contexts in which his work is discussed points to its depth.

The *Liber ruralium commodorum* is mentioned, however briefly, in studies dealing with the history of agriculture and land use,[5] the history of medicine,[6] the history of science,[7] the history of illuminated manuscripts,[8] and finally, the history of gardens and landscape architecture.[9] Although Crescenzi's treatise appears in a wide range of contexts, the scholarly literature that does exist is neither vast nor particularly exhaustive and it is limited to short articles and essays, or brief references in books on other topics. There are, however, two major exceptions. A collection of essays on Crescenzi's life and times was

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[5] Georges Duby, *Rural Economy and Country Life in the Medieval West*, transl. Cynthia Postan (Columbia, SC: University of South Carolina Press, 1968), pp. 88-9; Maria Teresa Bobbioni, "Il sistema del maggese in Pietro De Crescenzi, *Rivista di Storia dell'Agricoltura* 20 (Dec. 1980): 125-128; Lois Olson, "Piero de Crescenzi: The Founder of Modern Agronomy," *Agricultural History* 18 (Jan. 1944): 35-40.

[6] William C. Crossgrove, "Medicine in the *Twelve Books on Rural Practices* of Petrus de Crescentiis, in *Manuscript Sources of Medieval Medicine: A Book of Essays*, ed. M. R. Schleissner (New York: Garland Publishing, 1995), pp. 81-103.

[7] George Sarton, *Introduction to the History of Science Volume 3 Part 1* (Baltimore: Williams & Wilkins Co., 1947), pp. 811-816.

[8] R. Calkins, "Piero de Crescenzi and the Medieval Garden," in *Medieval Gardens* (Washington, DC: Dumbarton Oaks Research Library and Collections, 1986), pp. 157-169.

[9] John Harvey, *Mediaeval Gardens* (London: B.T. Batsford Ltd., 1981), *passim*.

published in 1933 by the Societá Agraria di Bologna. It contains such helpful texts as transcriptions of documents about Crescenzi from the archives of Bologna, but many of the essays are either too general or too laudatory to be useful.[10] There has also been a very recent edition of the treatise annotated and edited by Will Richter and prepared for print by his daughter Reinhilt Richter-Bergmeier.[11] In preparation for this three-volume edition, Richter undertook a complete philological analysis of the existing fourteenth-century manuscripts, providing us with the most accurate version of the original text.[12] In addition to the useful annotations, which illuminate the wide variety of sources Crescenzi was utilizing, there is an informative preface and an exhaustive bibliography.

This most recent Latin edition of the *Liber ruralium commodorum* leads into a consideration of its publication history. While the question has been raised whether the treatise was originally written in Latin or in the vernacular,[13] Richter concluded that Latin was the original

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[10] P. T. Alfonsi, etal., *Pier de' Crescenzi (1233-1321). Studi* e *Documenti* (Bologna: Licinio Capelli, 1933).

[11] Petrus de Crescentiis, *Ruralia commoda. Das Wissen des vollkommenen Landwirts um 1300*, 3 vols., transl. W. Richter (Heidelberg: Universitätsverlag C. Winter, 1995-87).

[12] See Will Richter, "Die Überlieferung der Ruralia commoda des Petrus Crescentiis im 14. Jahrhundert." Mittellateinisches Jahrbuch 16 (1981): 223-257.

[13] See for example, "Osservazioni sopra lo scritto di Pietro de'Crescenzi," *Trattato della Agricoltura di Piero de Crescenzi Volume I* (Milan: Societá Tipografica de' Classici Italiani, 1805), pp. xxxvi-xlviii.

language in which the work was composed.[14] Evidence of the treatise's widespread popularity can be gleaned from the many manuscripts and printed editions. There are over 100 extant manuscripts in Latin, Italian, French, and German, many of which were produced in the fourteenth century.[15] The fourteenth and fifteenth centuries also saw the production of numerous illuminated editions, the earliest of which was made in Italy and features simple images to illustrate each book.[16] The later French illuminated editions, which are better known, are adorned with the fine style of illumination associated with the court of Charles V of France, although they survive only in fifteenth century copies.[17] The early dissemination of the text was effected by scriptoria at the University of Bologna, but probably also at the hands of private scribes, such as lawyers and judges. The Dominican order, whose important role in the conception of the treatise will be discussed below, was also responsible for ensuring the distribution of the text, especially into France.[18]

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[14] See Richter, 1981: 223.

[15] Ibid : 223-27, *passim*; for an incomplete list of the manuscripts and their locations, see Ludovico Frati, "Bibliografia dei Manoscritti," in *Pier de'Crescenzi Studi e Documenti*, pp. 259-306.

[16] See Reinhilt Richter-Bergmeier, "Zur Organisation und Ausstattung der Handschrift Vat. lat. 1529 (Petrus de Crescentiis, *Ruralia commoda*)," in *Literatur: Geschichte und Verstehen. Festschrift für Ulrich Mölk*, ed. H. Hudde and Udo Schöning (Heidelberg: Universitätsverlag C. Winter, 1997), pp. 36-60.

[17] For a discussion of these illustrations of Crescenzi's text, see R. Calkins, p. 160.

[18] Richter-Bergmeier, p. 39.

The dissemination of the *Liber ruralium commodorum* benefited most, however, from the invention of printing in the second half of the fifteenth century. Attesting to its significance, Crescenzi's treatise appeared as early as 1471 in a printed edition brought out by John Schüßler at Augsburg, even before the printing of Columella's more widely cited work on agriculture.[19] The number of fifteenth and sixteenth century printed editions is vast, and there is a preponderance of editions in vernacular languages. The last Latin edition to appear before the eighteenth century was printed in 1538 in Basel and reprinted in 1548.[20] The printed editions often had woodcuts, some of which were repeated from one edition to another.[21] The translations themselves are often quite free, such as a sixteenth-century German edition, to which an entire section on the tobacco plant and its medicinal properties was added.[22]

Crescenzi's popularity declined rapidly in the seventeenth century, which may have had something to do with the rise of anti-Aristotelianism in the forging of a new approach to science.[23] With the exception of an annotated

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[19] Richter, 1981: 224.

[20] Ibid; for a list of the printed editions, see Albano Sorbelli, "Bibliografia delle edizioni," in *Pier de'Crescenzi. Studi* e *Documenti*, pp. 307-368.

[21] For a discussion of the woodcuts accompanying the printed editions, see Max Bach, "Des Petrus de Crescentius Buch über die Landwirtschaft und seine Illustrationen," *Zeitschrift für Bücherfreunde* 5 (1901-2): 224-228.

[22] *New Feldt und ackerbaw…* (Strassburg: L. Zetzner, 1602).

[23] For a discussion of the anti-scholastic bent of the seventeenth-century scientific revolution, see E. Grant, *The Foundations of Modern*

Latin edition published in the eighteenth century along with the works of Columella and Cato,[24] an early nineteenth century translation into Italian,[25] and twentieth century translations into Russian and Czech,[26] there has been no major edition of this work until the recent publication of Will Richter's carefully researched volumes.

One of the major problems in dealing with this treatise arises from the difficulty scholars have in evaluating the actual nature of its contents. For historians of science and medicine, the significance of Crescenzi's treatise has probably been the easiest to accept. Although George Sarton, for example, discusses the fact that Crescenzi based much of his work on existing sources, he views it as "a revision of the Roman ones [agricultural treatises] adapted to the new vision and needs of his time."[27] He credits the book with being an important contribution to the study of natural history. This is because the treatise fits into the thirteenth-century tradition of writings on science and medicine, in which the use of authorities was prevalent. For agricultural historians seeking details about contemporary agriculture and garden historians who want to know what a

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Science in the Middle Ages (Cambridge: Cambridge University Press, 1996), pp. 168-171; see also George Ovitt, *The Restoration of Perfection. Labor and Technology in Medieval Culture*, (New Brunswick, NJ: Rutgers University Press, 1987), pp. 38-47.

[24] *Scriptores rei rusticae* (Leipzig: C. Fritsch, 1794-97).

[25] *Trattato della agricoltura di Piero de'Crescenzi* (Milan: Dalla Società de Classici Italiani, 1805).

[26] See Calkins, p. 160, n. 13.

[27] Sarton, p. 813.

medieval garden looked like and how it was designed, Crescenzi's reliance on authorities makes the *Liber ruralium commodorum* a difficult source.

Although the text of the *Liber ruralium commodorum* is filled with important information about gardens and their relationship to agriculture, images from the later editions of the treatise figure more prominently in histories of medieval gardens than the content of the text. The illuminations and woodcuts depict different aspects of rural life and were often made to adorn the title pages of the individual books. In many of the French versions, a man is shown advising a nobleman as they observe peasants engaging in the activities described in a specific book.[28] (fig. 5) In an attempt to use the treatise as they would more recent sources, which are often accompanied by plans, historians of the medieval garden have used the section on pleasure gardens in book eight in conjunction with fourteenth- and fifteenth-century illuminations in order to discern what a medieval garden might have looked like.[29] This despite the fact that only one of the illuminated editions, which was produced in Italy in the mid-fourteenth century and is rarely

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[28] For a general discussion of Crescenzi's book in relationship to both illuminations and woodcuts, see Calkins, passim.

[29] See for example, M. Stokstad, *Gardens of the Middle Ages* (Lawrence, KA, 1983), 19-35; and the earlier, Frank Crisp, *Medieval Gardens* (London: John Lane The Bodley Head Ltd, 1924), p. 14-19.

illustrated, is even vaguely contemporary with Crescenzi himself.[30] (fig. 6)

Historians in search of an unmediated description of a medieval garden have tended either to accept Crescenzi's text uncritically, as Sylvia Landsberg does in her recent slim volume on the medieval garden, whose purpose is more popular than scholarly,[31] or to minimize its significance, because the author relied so heavily on existing Roman and medieval sources, as John Harvey does in one of the few books devoted specifically to medieval gardens.[32] It is true that the section on the small pleasure garden is copied almost directly from Albertus Magnus' *De vegetabilibus*, which makes it difficult to accept as an accurate description, but Crescenzi also describes two other garden types, those for people of moderate means and those for Kings and Princes, neither of which follows a literary precedent. Those who reject the scholarly value of the text on the basis of its compilatory nature disregard the fact that originality as such was not valued in the middle ages and that experience was mediated through existing tropes and literary conventions.[33]

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[30] Richter-Bergmeier reprints the illuminated letters and illustrations of Manuscript Vat. lat. 1529 in their entirety, pp. 44-53.

[31] Sylvia Landsberg, *The Medieval Garden* (London: Thames and Hudson, 1995), pp. 21-24.

[32] See for example, Harvey, p. 17; for an earlier version of the same argument, see Hermann Fischer, *Mittelalterliche Pflanzenkunde* (München: Verlag der Münchener Drucke, 1929), p. 181.

[33] One might argue, that this is always the case to some degree, but for the most thorough discussion of the medieval use of tropes and

When scholars do use the pleasure garden book, they do so without addressing its larger context in an agricultural treatise. Historically, such works on agriculture have been marginalized,[34] partly because historians of landscape architecture for the most part deal with the gardens of the elite without considering the agricultural and wild landscapes that surround them.[35] Moreover, most scholars have concerned themselves only with the descriptions of gardens without considering the other sections of the book,[36] which provide practical information pertaining to the connection between agriculture and gardens, but also help us to flesh out the pleasure garden descriptions themselves. What is important about Crescenzi's treatise is the manner in which it encourages us to look beyond the walls of the pleasure

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conventions, see E. Curtius, *European Literature and the Latin Middle Ages*, transl. W. R. Trask (Princeton: Princeton University Press, 1983) *passim*.

[34] See Bernhard Rupprecht, "Villa. Zur Geschichte eines Ideals." in *Wandlungen des Paradiesischen und Utopischen: Studien zum Bild eines Ideals*, in *Probleme der Kunstwissenschaft 2* (Berlin: DeGruyter, 1966).

[35] A parallel situation can be seen in the intersection between useful and pleasurable literary works. The historian of German literature Gerhard Eis, for example, devoted his career to understanding the importance of "Fachliteratur," practical literature devoted to subjects like medicine and agriculture. *Mittelalterliche Fachliteratur.* Sammlung Metzler. Realienbuecher für den Germanisten. Abteilung Literaturgeschichte. (Stuttgart: Metzler, 1962).

[36] This situation has been exacerbated by the fact that until recently there have been no twentieth-century translated or annotated versions of the text. The only complete translation into a standardized modern language was published in 1805 in Italy. See *opcit* note 24. Translations into English have been limited to the first three chapters of the pleasure garden book, translated in full by Calkins and in fragments by Georgina Masson, *Italian Gardens* (New York: Abrams, 1961), Marie-Luise Gothein, *The History of the Garden,* and Crisp.

garden into the broader social, economic, intellectual, and cultural landscape in which it was produced.[37]

Other scholars, such as Dieter Hennebo, have argued convincingly that Crescenzi's taxonomy of the medieval garden would seem to contradict the notion that the medieval garden was necessarily small, enclosed, and inward looking,[38] as it has often been described, especially in contrast to the supposedly outward-looking character of the Renaissance garden.[39] This has had the effect of making it seem as if an extreme break occurred between the medieval and Renaissance conceptions of gardens. While there were many important changes, such as that medieval gardens tended to create artifice out of natural materials and Renaissance gardens to craft apparently natural elements by artificial means,[40] the function of these gardens as places of rest, relaxation, and social statement remained the same.[41]

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[37] For a recent book attempting to take into account non-elite garden spaces, see J.D. Hunt and J. Wolschke-Buhlmann, eds., *The Vernacular Garden*. (Washington, DC: Dumbarton Oaks, 1993), in particular, J.B. Jackson, "The Past and Present of the Vernacular Garden," pp. 11-17.

[38] See for example, Dieter Hennebo, *Gärten des Mittlealters*, republished and edited by N. Ott and D. Nehring (München: Artemis Verlag, 1987 [1962]), p. 46; and Clemens Alexander Wimmer, *Geschichte der Gartentheorie* (Darmstadt: Wissenschaftliche Buchgesellschaft, 1989), pp. 24-29.

[39] For a typical version of this argument, see Terry Comito, *The Idea of the Garden in the Renaissance* (New Brunswick, NJ: Rutgers University Press, 1978), pp. 27-50.

[40] Eugenio Battisti, "Natura Artificiosa to Natura Artificialis," in *The Italian Garden*, ed. David Coffin (Washington DC: Dumbarton Oaks, 1971), pp. 3-36.

[41] For a convincing argument against the purely formal analysis of gardens, see Edward Wright, "Some Medici Gardens of the Florentine Renaissance: An Essay in Post-Aesthetic Interpretation," in *The Italian Garden: Art, Design, and Culture,* ed. John Dixon Hunt, (Cambridge: Cambridge University Press, 1996), pp. 34-59.

Although historians of the Renaissance garden generally refer to Crescenzi in passing or in a footnote as an important practical text that bridges the gap between the Roman agricultural tradition and Renaissance treatises on gardening and horticulture,[42] there is one scholar who has taken the influence of Crescenzi's treatise on Renaissance gardens seriously. Bernhard Rupprecht argues that the fifteenth- and sixteenth-century conception of *villegiatura* in Venice arose out of a synthesis between Petrarch's idea of *otium* expressed in his *Vita Solitaria* and the agricultural practices described by Crescenzi. Although Crescenzi's *Liber ruralium commodorum* is more practical than theoretical or ethical, Rupprecht stresses its importance because it presumes an urban audience not initiated into the practice of agriculture.[43] Rupprecht, who takes an iconological approach to the subject, comes closest to addressing the value of the treatise, although he does so from a Renaissance and not a medieval perspective.

In an effort to re-evaluate the significance of Crescenzi's treatise and what it can teach us about the history of the pleasure garden in the middle ages and Renaissance, this dissertation will be based upon Richter's

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[42] See for example, Claudia Lazzaro, *The Italian Renaissance Garden* (Yale University Press: New Haven, 1993), p. 12.
[43] See Rupprecht, pp. 225-226.

annotated and authoritative Latin version of the text. The appendix includes a translation of the entirety of the pleasure garden book that is based on Richter's authoritative edition.[44] Previous translations, as mentioned above, only considered the descriptions of pleasure gardens without including the chapters on the techniques required to fashion such gardens. These translations, moreover, were not based on the original text, but on sixteenth-century editions, which did not preserve the original Latin. My translation seeks to respect Crescenzi's original wording in an effort to better understand the vocabulary he used and how it can help us to better understand how the pleasure garden functioned as a vital part of the agricultural estate.

Chapter one begins by exploring Crescenzi's biography in order to evaluate how the social, intellectual, and political contexts in which he lived informed the form and content of the *Liber ruralium commodorum*. Although most everyone writing about the treatise briefly mentions that Crescenzi was a Bolognese lawyer, no one has considered how Crescenzi's life and times had a tangible effect on his work. Using the information he provides in the preface together with information gleaned from his last will and testament, I will show how the treatise was written in response to a specific

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[44] I would like to thank Frau Dr. Reinhilt Richter-Bergmeier for making a copy of Book Eight available to me before the final publication of the manuscript.

historical moment. Such an analysis makes it possible to consider issues of audience, which dictate much of the style and content of the work.

Chapter two provides a summary of the entire treatise whose purpose is to demonstrate how far Crescenzi's research and knowledge extended, but also to begin to consider the connection between the pleasure garden and the larger agricultural context. Chapter two will not include a summary of the pleasure garden book, which will be addressed in a later chapter. Although the main purpose of this chapter is to summarize the treatise, it will also seek to disclose where and how Crescenzi used existing sources and where he did not. In doing so, we can begin to understand the wide variety of disciplines he incorporated into his work. Although the ultimate goal of this dissertation is to understand what the *Liber ruralium commodorum* can teach us about gardening as a fine art, this cannot be achieved without considering such disciplines as agriculture, medicine, and the natural sciences. This is especially important since in the period during which Crescenzi was writing there were not such hard-edged distinctions between these fields of knowledge as there are today.

In Chapter three we will leave the history of the treatise proper to consider the definition of agriculture as an art. The purpose of this chapter is to discover the definition of agriculture Crescenzi had inherited from his

Roman predecessors and how the innovations he incorporates, such as a book devoted to pleasure gardens, were influenced by the changing definition and role of art in the middle ages. Significant for this chapter is the hierarchical distinction made between the liberal and mechanical arts and how the art of agriculture occupies a position somewhere in between.

Having considered the larger contexts in the previous three chapters, chapter four will be devoted exclusively to the pleasure garden. It opens with a summary of Book Eight in which the connections to the rest of the treatise will be highlighted. The summary will be followed by a consideration of the literary tropes and traditions that underlie the pleasure garden Crescenzi describes. The final section of chapter four is concerned with the aesthetic dimension of the pleasure garden and how it serves to justify not only itself, but the treatise and estate as a whole by means of an engaged aesthetics of pleasure.

The conclusion will address the interrelatedness of meaning, function, and form in the garden as it is expressed in Crescenzi's treatise. This interpretation seeks to de-emphasize the formal aspects of garden design, focusing attention on how the garden spaces Crescenzi describes were used as makers and markers of social status, as well as venues for rest and relaxation; such a reorientation will enable me to establish important connections between the

medieval and Renaissance gardening traditions, as well as establishing a link between the fine arts and the art of gardening, on the one hand, and the art of gardening and the practice of agriculture, on the other.

CHAPTER 1: BACKGROUND

Piero de' Crescenzi, who adopted the Latinate version of his name, Petrus de Crescentiis, for his scholarly pursuits, was born in Bologna around 1235 into a land-owning patrician family.[45] The basic facts of his life are fairly easy to reconstruct from the archival evidence of his whereabouts and activities found in the Archivio di Stato in Bologna and the prologue to his treatise, where he includes some biographical information. His last will and testament survives as well in the archives of the Dominican priory at Bologna.[46] Crescenzi attended the University of Bologna, where he studied logic, medicine, the natural sciences, and finally law. Although we do not know precisely when he completed his legal degree, there is documentary evidence of Crescenzi employing his legal title in 1268.[47] In the wake of the violent internal and external politics of Bologna, Crescenzi left the place of his birth around 1269. He spent the next thirty years of his life working as an itinerant lawyer in cities throughout Italy, acting as a councilor and vicar to Podestas in cities

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[45] Some scholars cite an earlier birth date. See, for example, the "Vita die Pietro Crescenzio," in *Trattato della Agricoltura di Piero de Crescenzi*, p. xii. Crescenzi had two brothers Giamcomino and Bartolomeo; the latter became a Dominican friar.

[46] These documents are transcribed and printed in the original Latin, in *Pier de' Crescenzi. Studi e Documenti.*

[47] Lino Sighinolfi, "Pier de' Crescenzi nell storia della cultura nazionale," in *Pier de' Crescenzi. Studi e Documenti*, p. 102.

all over northern Italy.[48] Although the information on Crescenzi's movements during these thirty years is scant, there is evidence that places him in Imola in 1283, in Brescia in 1292, and Piacenza in 1298, all cities in northern Italy, which appear to have been his main sphere of influence.[49] This evidence is supported by his reference to these cities in his treatise.[50] It is often said that Crescenzi was exiled from Bologna, but this language is somewhat misleading, since he appears to have left voluntarily and did return to the city on occasion. He returned to look after his family (he was married twice and fathered nine children, all of whom remained in Bologna) and to tend to his estate outside the city walls.[51]

In 1299, following the peace transacted between Matteo Visconti and Alberto della Scala, Crescenzi returned to Bologna permanently and retreated to his estate where he completed his agricultural treatise between 1304 and 1309.[52]

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[48] Richter, 1995, p. IX; The Podesta was basically an executive officer for hire, someone with a legal education who would be brought into a city from the outside and employed to arbitrate important decisions for a limited period of six months to a year. See Daniel Waley, *The Italian City Republics* (New York: Longman, 1978), pp. 32-3, for a description of the office of the podesta. In addition to serving as an assistant to Podestas, Crescenzi fulfilled the role of the assistant mayor responsible for legal matters.

[49] G. Fantuzzi, *Notizie degli scrittori Bolognesi I* (Bologna: A. Forni, 1783 [1965]), p. 224.

[50] Richter, 1995, pp. XI-XII.

[51] For a reconstruction of Crescenzi's whereabouts during this period see, Fantuzzi, *passim*; his first wife Gerardina di Accarsio de' Castagnoli died in 1287 and he remarried Antonia, the daughter of Tiberto de'Nascentori shortly thereafter in 1290.

[52] Richter, 1995, p. X; antequem and postquem dates for the completion of the treatise are given by the fact that Crescenzi dedicates the

It has been speculated, however, that Crescenzi may actually have begun collecting the information for his treatise before going into exile. Since there is no archival evidence of Crescenzi's involvement in the public life of Bologna, scholars have argued that he may have spent the years between the university and his peregrinations living the isolated life of a scholar, reading and compiling information on agriculture and the natural sciences.[53] He died in 1320.

From this brief biographical sketch of a life that lasted 85 years, it becomes clear that Crescenzi witnessed and participated in a transitional period of Italian political, intellectual, and cultural history, the effects of which are evident throughout his treatise. As an inhabitant of Bologna, he participated in the vicious internal battles between Guelph and Ghibelline factions; as a student of the first full-fledged university in western Europe, he witnessed the forging of new definitions and characterizations of knowledge and the arts; and finally, as a peregrinating jurist who traveled extensively throughout the northern parts of Italy, he observed customs and habits of agricultural practice. Accounting for the various contexts in which Crescenzi existed, we arrive at a provisional understanding of the life of the author of the *Liber ruralium commodorum*,

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treatise to the Amerigo da Piacenza as general master, a position he did not hold until 1304, and that the treatise is also dedicated to Charles II, who died in 1309.

[53] Ibid, p. XI.

of his allegiance to the city of Bologna, social standing, the political affiliations, intellectual development, association with the University of Bologna, and, finally, his religious and intellectual relationship with the Dominican Order.

In the dedications and prologues that preface his treatise, Crescenzi directly and indirectly refers to his social, political, intellectual, and religious positions and beliefs. These statements will serve as a frame for the discussion that follows, since they enable us to make concrete connections between Crescenzi's treatise, his life, and the period in which he lived. I will conclude with a discussion of the sources he used in compiling his treatise.

I. BIOGRAPHY

THE CITY OF BOLOGNA

Like many citizens of Italian cities in the Middle Ages and the Renaissance, Crescenzi displays great admiration and respect for the city of his birth and its environs. He praises the climate of the "illustrious city of Bologna," whose name he punningly connects to being good for all ("id est bona per omnia").[54] Although Crescenzi does not fully explicate his civic patriotism, his labeling of Bologna as

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[54] Prologus, 3: "..sibi proprio nomine Bononia, id est bona per omnia in omnibus mundi climatibus dicebatur.."

"good for all" is analogous to such contemporary city panegyrics as Villani's celebration of Florence.[55]

Bologna is located on an open plain in the northeast foothills of the Apennines in a fertile agricultural basin. Bolstered by the richness of the surrounding land, the economic development of the city was ensured by its incorporation into a system of canals and a network of roads, which supported trade in silk, hemp, and wool, Bologna's primary industries.[56] Bologna's economic prosperity during the thirteenth century, which came about because of its prime location, resulted in a major beautification plan for the city, wherein architects were hired to supervise the construction of public buildings intended to reinforce commune patriotism.[57] Supporting such building projects was the abundance of stone and wood available in the region.[58]

The center of the city is laid out in the form of a Roman grid, while the streets that radiate from the center and connect it to the suburbs date to the medieval period.[59] As a Roman colonial outpost mentioned by Livy and Suetonius, Bologna was known as Bononia, although there is some evidence

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[55] These expressions of civic pride played an important role in self-definition, but also in fomenting rivalries between cities. For a discussion of Italian civic patriotism, see Waley, pp. 74-83.

[56] For a description of Bologna, see Alfred Hessel, *Geschichte der Stadt Bologna von 1116-1280* (Berlin: E. Ebering, 1910), pp. 1-3; and Naomi Miller, *Renaissance Bologna. A Study in Architectural Form and Content* (New York: Peter Lang, 1989), pp. 8-10.

[57] Waley, p. 91.

[58] Miller, p. 9.

[59] Ibid, pp. 10-12

of a pre-Roman settlement in the same location.[60] Between the fifth and twelfth centuries, Bologna experienced the invasions and destruction typical of that period of Italian history, but by the time Crescenzi was born, the city of Bologna had enjoyed commune status and relative peace and prosperity for over 100 years.[61] During the thirteenth century, Bologna, like many other cities in central Italy, became embroiled in the strife caused by the conflict between the Guelphs, whose allegiance stood with the papacy, and the Ghibellines, who sided with the Emperor.[62] After the death of Frederick II in 1250, the Guelph rule of Bologna became well established and remained so, for the most part, until 1327.[63] Despite the political and military conflicts Bologna experienced, there was continued economic prosperity, which was accompanied by an interest in maintaining a connection to the suburbs outside the city walls, whose large vineyards were legally protected.[64]

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[60] Miller, pp. 8-7.

[61] The first reference to Bologna as a commune appeared in 1123. See, Waley, p. 27.

[62] Although the terms Guelph and Ghibelline have been overapplied to the political situation in Italy during the thirteenth and fourteenth centuries and in many ways oversimplify an extremely complicated series of internal and external political struggles, it is expeditious to employ them here, since Crescenzi in many ways embodies a typical Ghibelline position. See, Waley, pp. 118-119. For a more nuanced discussion, see Brian Pullan, *A History of Early Renaissance Italy from the Mid-thirteenth to the Mid-fifteenth Century* (New York: St. Martin's Press, 1972), pp. 26-48.

[63] Edith E. Coulson James, *Bologna. Its History, Antiquities and Art* (London: Henry Frowde, 1909), p. 31-40.

[64] Waley, p. 66.

SOCIAL STANDING

Although it is difficult to make generalizations about social classes during this period of Italian history, and no clear distinctions between aristocrats and non-aristocrats existed in Bologna, land-ownership would have been one of the ways in which the "aristocratic" class would have been distinguished from the remaining city dwellers.[65] Crescenzi could be labeled an aristocrat, therefore, because he had inherited his father's estate, which was located just outside of the ancient walls of Bologna near the Monastery of San Stefano.[66] The precise location or disposition of the estate, the Villa Olmo, is unclear, but the various bequeathals to Crescenzi's sons in his last will and testament enumerate what it contained. It is evident that the useful portion of his estate consisted mostly of vineyards and collections of nut trees. These different areas seem to have been divided by ditches, or moats. Crescenzi also mentions, however, such features known from his treatise as orchards or gardens located near the house, dovecotes, courtyards, balconies, moats, and assorted small buildings.[67] A series of documents

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[65] For a discussion of the nebulous class divisions and distinctions in the Bolognese Commune, see Hessel, p. 277.

[66] "Vita dei Pietro Crescenzio" in *Trattato della agricoltura* 1, pp. xi-xii. The land had originally been owned by Giambonino's father, Cresenzo, the namesake and progenitor of the Crescenzi family, whose name appears as early as 1102 in the records of the San Stefano monastery.

[67] Crescenzi's last will and testament is printed in its entirety and in the original Latin in P. T. Alfonsi, etal., pp. 84-6. In it he bequeaths "the vines, and arable fields, and plowed fields which he has in the Villa Olmo, divided among them [his wife and children] by

drawn up between 1304 and 1316, in which Crescenzi declares his worldly possessions and enumerates his family members, provides evidence that Crescenzi increased the size of his estate by continuing to purchase land around his existing property.

POLITICAL AFFILIATIONS

In the prologue Crescenzi outlines the many reasons he decided to "turn his mind and soul to rural cultivation."[68] He quotes Cicero saying "that there is nothing better, more fruitful, sweeter or more befitting the dignity of a free man than agriculture." He praises agriculture, "knowing that in cultivation of the land tranquillity is more easily found, leisure is promoted, and even attacks of neighbors are

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their very own father for the sake of peace in just this way indeed: a third part of the field of nuts with the house situated upon it and half of the pasture which is next to it, and the vineyard which is next to it right up to the little ditch which is in the middle of the vines and fourteen turnings of the land which is there and what is more a third part of the brayne of blackthorn which is in the middle [of the vines] as an endowment for his, Crescenzi's, wife...Likewise, the center of the estate and more with the dovecote which is above the gate to the estate itself and with the balcony and with the other buildings placed in this part and with the small vineyard and cabins which are fenced off from the other parts by means of a ditch that has been dug with vines and with a riverbank that is joined here that of the Brother Manzolo and a third part of the brayne of blackthorn from the upper part and a third part of the field of nuts located near the fifth road…" Many thanks to Professor Tom Noble for assisting me with this difficult translation.

[68] Prologus, 4: "..quod cultus ruris exquisita doctrina, per quam facilius et abundantius utilitas percipitur et delectatio procuratur quam si neglegenter et sine certa industria singula consueto more colantur, viris bonis, qui de suarum possessionum redditibus sine cuiusquam laesione iuste vivere volunt, merito appetenda est, ad cultum ruris mentem animumque converti."

avoided."[69] Agriculture, he continues, is both an "excellent branch of learning" through which "utility and delight" are more easily and abundantly "collected and maintained" and a practice attracting good men who desire to live justly from their own possessions without being attacked. In some cases he even finds biblical justification for agriculture. He lauds those peaceful and humble men who pursue agriculture, contrasting with those who seek easy fortune and are ultimately blinded by pride and other vices. Fortunes gained by means other than agriculture are easily lost, while the peaceful and humble men who practice agriculture will eventually inherit the earth from the impious,[70] an evocation of the meek who inherit the earth in Matthew 5:5.

On the one hand, Crescenzi's praise of agriculture is a reflection of the attitude expressed by his Roman predecessors, such as Cato, who reviles trade and praises farming, claiming that the farming class produces the bravest men and the sturdiest soldiers. Farmers, unlike tradesmen, are better respected and regarded with less hostility, their

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[69] Ibid: "..nihil est agricultura melius, nihil uberius, nihil dulcis, nihil homine libero dignius, ut ait Tullius, et cognoscens, quod in cultu ruris status facile invenitur tranquillus, excitatur otiositas et proximorum laesio eviatur.."

[70] Prologus 2: "Hunc tamen impii viri non quaerunt, sed inventum superbia seu alio detestabili vitio caecati lacerant. Quare licet eorum fortuna prospera saepe videatur ad tempus, perit tandem nec dimidiat dies suos. Viri autem pacific et humiles, licet quandoque laesi fuerint, tamen vivunt apud Deum et homines gratiam invenientes tandem impiorum hereditant terram."

livelihood better assured.[71] This attitude is also found in Vergil's *Georgics*. Crescenzi emphasizes the peaceful nature of agriculture to which he is retiring, and contrasts it to the attacks he had previously experienced. The contrast between the peaceful rural life and the combative public life is a theme that runs throughout the *Georgics*, which is driven home by the idea that one day the farmer will find rusted armor and javelins while tilling his fields.[72]

On the other hand, Crescenzi's praise of agriculture and criticism of trade are intimately related to his status as an aristocratic landowner and his affiliation with the Ghibelline Lambertazzi clan.[73] The Lambertazzi adopted an aristocratic, pro-imperial stance and did much to foment strife in the Bolognese Commune throughout the thirteenth century in their battles against the Guelph Gemerei clan.[74] In the preface, where Crescenzi laments the schism and praises Bologna's climate, he injects a feeling of patriotism and pride in his native city, evoking a nostalgia that later

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[71] *De Re Rustica*, 2-4: ".et virum bonum quam laudabant, ita laudabant, bonum agricolam bonumque colonum. Amplissime laudari existimibatur qui ita laudabatur...At ex agricolis et viri fortissimi et milites strenuissimi gignuntur, maximque pius quaestus stabilissmusque consequitur minimeque invidiosus, minimique male cogitantes sunt qui in eo studio occupati sunt." Marcus Porcius Cato, *On Agriculture*, transl. W. D. Hooper (Cambridge, MA, 1934).

[72] I, 495-7. Vergil, *Georgics*, transl. H.R. Fairclough (Cambidge, MA: Harvard University Press, 1920).

[73] Marion Schiavone, "Un Manoscritto del 1305: Il Trattato di Agricoltura." *L'Esopo: Rivista Trimestrale di Bibliofilia* 18 (June 1983): 9-18.

[74] Hessel, p. 227-8; and p. 336.

comes to typify the Ghibelline position.[75] Although some historians dispute this claim, the Ghibellines were generally associated with the land-owning aristocracy, who made their money primarily off the land, while the Guelphs were more oriented toward Republicanism and were often from the class of merchants and traders.

One obvious reference to Crescenzi's Ghibelline leanings is his dedication to Charles II of Anjou, who, as King of Jerusalem and Sicily, would also have been the nominal ruler of the Holy Roman Empire.[76] Crescenzi offers the treatise to him, for "the consolation and delight of his soul and the perpetual use of his subjects."[77] The royal dedication is followed by a prologue that begins by praising the prudence of the human soul, which seeks the "peace and tranquillity" associated with the "utility, sweetness, and delight" of the earth, which ought to be conserved by "worthy men" for the benevolent delight of God, the unharmed life of men, and an abundant harvest.[78] This Christian justification for writing a treatise on agriculture, is also a thinly veiled indictment of the political climate of Bologna.

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[75] Waley, p. 119.

[76] Although Charles of Anjou was in some ways a puppet for the powerful Papacy, which had lost its previous connection to the Holy Roman Empire, it is significant that Crescenzi chose to dedicate the treatise to him. Pullan;, p. 29-30.

[77] Epistula missa ad Karolum regem secundum, 2: "..afferentem consolationem et delectationem animo Vestro et perpetuam utilitatem subiectis Vestris.."

[78] Prologus 1: "Cum ex virtute prudentiae, quae inter bonume et malum caute discernit, humanus informetur animus ad utilis et delectabilis cognitionem eorumque sequelam et in terrenis rebus pacificus et

THE UNIVERSITY OF BOLOGNA

Developing alongside the Commune of Bologna in the course of the twelfth and thirteenth centuries, the University of Bologna is well known as the oldest university in Europe.[79] Crescenzi refers to his affiliation with the University of Bologna twice in his prefatory remarks. He does so obliquely, when he says, that as a young man he studied "logic, medicine and the natural sciences" before immersing himself in the "noble legal sciences."[80] These are courses of study he would have completed at the university. He mentions the university directly, however, when he subjects his treatise to the judgment of the university's "experts in the natural sciences".[81]

While such northern universities as those at Paris and Oxford were generally more concerned with theology and metaphysics, the University of Bologna became the most important institution for the study of civil and canon law. This legal emphasis has been attributed to the persistence of

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tranquillus status valde utilis, dulcis et delectabilis reperiatur, merito hic totis viribus quaerendus est et inventus tamquam thesaurus conservandus. Per eum namque facile benigna Dei delctio provocatur, vita hominis illaesa tute servatur et rerum abundans copia utiliter procuratur."

[79] For a discussion of the parallels to be drawn between the Commune and the university, see J.K. Hyde, "Commune, University, and Society in Early Medieval Bologna," in *Universities in Politics*, ed. J.W. Baldwin and R.A. Goldthwaite (Baltimore: Johns Hopkins University Press, 1972), pp. 17-46.

[80] Prologus 3: "tempus adoloscentiae in logica, medicina et scientia naturali totum consumpsi et demum nobili legum scientiae insuadavi."

[81] Ibid: "...ac etiam per peritos in scientia naturali universitatis scolarium civitatis Bononiae."

the Roman legal system throughout Italy, but also to the existing study of literature and grammar, subjects which were a part of the so-called *ars dictaminis*, or art of dictating, important for the drafting of legal documents.[82]

In addition to following a paradigm of learning that stressed the practical application of Aristotelian principles to the study of law and medicine, Bologna followed a scheme of institutionalization that distinguished it from its northern counterparts. In the Parisian model, the masters and their affiliation with the church dictated the growth of the university. At Bologna, however, the university was created by the mandate of the students, not the masters or teachers. This situation meant that the official institutionalization of the university took place at the behest of its students, many of whom were older and also of noble standing. It was the students who were in charge of hiring and firing their teachers, it was to them that privileges were granted.[83]

It is curious that Crescenzi studied both medicine and law, which were the subject of serious debate throughout the thirteenth century. Serious conflicts at the university existed between students of law and of medicine. By the mid-thirteenth century, the University of Bologna had established

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[82] Hastings Rashdall, *The Universities of Europe in the Middle Ages* (Oxford: The Clarendon Press, 1936), pp. 92-3.
[83] Ibid, pp. 149-50.

itself as the foremost educational institution for the study of law, at the same time as a new school of medicine was being established at the university, which became one of the most important medical institutions in Europe.[84] The new medical faculty came under heavy fire from the students and professors of law, whose profession was considered more elevated; it was not until 1316 that the conflict between the legal and medical faculties was resolved, law and medicine having been placed on equal footing.[85] The disciplines of metaphysics and the natural sciences associated with an Aristotelian program of education had been more prevalent in northern education institutions, which exhibited a great interest in larger philosophical and theological issues than their more practically oriented Italian counterparts, but at this time the University of Bologna also began to offer courses in the natural sciences.[86]

Although Crescenzi studied logic, ostensibly one of the canonical liberal arts, in any consideration of the early history of the university, it is important to distinguish the type of learning and teaching pursued there from both the Classical conception of the seven liberal arts and from what, for lack of a better term, is called Renaissance "Humanism," in which learning was pursued for its own sake. While the

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[84] Ibid, pp. 234-5.
[85] Pearl Kibre, *Scholarly Privileges in the Middle Ages* (Cambridge, MA: Medieval Academy of America, 1962), p. 35.
[86] Rashdall, pp. 91-2; 248; 444.

seven liberal arts laid the theoretical foundation for the medieval university, in practice they played a fairly minimal role. The idea that there was a codified set of arts that an educated citizen had to master originated with the Greeks and was clearly expressed in Plato's *Republic*. Such later Roman writers as Cicero used the term *artes liberales* to describe a system of education, but it was not until Varro compiled his *Novem Disciplinis* (now lost) in the first century BC that the scope of what disciplines constituted a liberal education was clearly formulated. The list of nine disciplines Varro named - grammar, logic, rhetoric, geometry, arithmetic, astronomy, music, medicine, and architecture - was modified in the early fifth century by Martianus of Capella.[87]

In his allegorical celebration of the arts, *The Marriage of Philology and Mercury*, Martianus excluded medicine and architecture from Philology's dowry, because they were "concerned with mortal subjects" and other "mundane matters."[88] The remaining seven disciplines constituted what came to be known as the seven liberal arts. (The fate of medicine and architecture and the other so-called mechanical arts will be discussed in a later chapter.) As time passed, the seven liberal arts came to be divided into two groups:

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[87] John North, "The Quadrivium," in *Universities in the Middle Ages*, ed. Hilde de Ridder-Symoens (Cambridge: Cambridge University Press, 1992), p. 338.

[88] Book IX, Martianus of Capella, *The Marriage of Philology and Mercury*, transl. W.H. Stahl etal., in *Martianus Capella and the Seven Liberal Arts* 2 (New York: Columbia University Press, 1977), p. XX.

the trivium, which encompassed grammar, logic, and rhetoric, and the quadrivium, including geometry, arithmetic, astronomy, and music. A thorough knowledge of the trivium and quadrivium was considered essential for the study of Christian theology, although such a rigorous and all-encompassing education was not necessarily put into practice. The quadrivium in particular, whose theoretical status was actually higher than that of the trivium, was only superficially studied by most theologians.[89]

While the ideal of the seven liberal arts to which students aspired still persisted, the emerging universities themselves were much too practically oriented to achieve this encyclopedic principle. As for the trivium, logic came to take precedence over rhetoric and grammar.[90] A knowledge of Latin was essential for legal study, insofar as legal documents were written in Latin. Not studied for their own sake, however, rhetoric, grammar, and logic merely became the means to prepare for a legal education.[91] The arts associated with the quadrivium were far less prevalent at the University of Bologna, since astronomy, music, geometry, and arithmetic could do little to aid a legal education.

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[89] North, p. 337.

[90] See Alan Cobban, *The Medieval Universities* (London: Methuen & Co, 1975), p. 19-20; and Louis John Paetow, "The Arts Course at Medieval Universities with Special Reference to Grammar and Rhetoric." *University of Illinois The University Studies* 3 (January 1910): 16; Rashdall, pp. 92-3.

[91] Rashdall, p. 234.

THE DOMINICANS

The juxtaposition of the natural sciences with medicine and law in Crescenzi's education is probably a reflection of Crescenzi's contact with the Dominicans and his study of the Dominican scholar Albertus Magnus, whose works are cited throughout the treatise. According to Albertus education should adhere to the following progression: logic, mathematics, natural science, moral philosophy, metaphysics, a program that was followed in the education of the Dominican friars themselves.[92] A somewhat different progression had been described by Boethius, who asserted that in order to study law, philosophy, and medicine a student should master the liberal arts.[93] The Dominicans were closely associated with the University of Bologna, because of the emphasis on rhetorical persuasion and education that lies at the root of their belief in the ability to argue a Christian position on the basis of reason. It was also in Bologna that St. Dominic established one of his houses of learning under the leadership of Reginald of Orléans in 1218. Here the friars became both teachers and students and their lectures attracted many members of the university community.[94] St.

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[92] See R. F. Bennett, *The Early Dominicans* (Cambridge: Cambridge University Press, 1937), p. 55.

[93] See J. Weisheipl, "Classification of the Sciences in Medieval Thought," *Mediaeval Studies* 27 (1965): 85.

[94] Walter Nigg, *Warriors of God: The Great Religious Orders and their Founders*, trans. Mary Ilford (New York: Knopf, 1959), pp. 260-4; Simon Tugwell, Introduction, *Early Dominicans. Selected Writings* (New York: Palist Press, 1982), p. 25; Bennett, p. 53.

Dominic himself spent a number of months in 1219 in the city of Bologna.[95] The Dominicans were also known to have recruited new members from the university communities where they had established themselves.[96]

In a letter to the abbot of the Dominican monastery at Bologna, Amerigo da Piacenza, Crescenzi presents his treatise to the "honor of God on high," the "delight of the fairest King Charles [II of Anjou]," and the "utility of others."[97] Noting that he was prevented from completing the treatise for a long time by a variety of occupations, Crescenzi adds that he was exhorted to complete the work by a Dominican request, after being relieved of his judicial and civic duties.[98] At the age of 70, having been granted the "calmness of soul" required to complete his work, Crescenzi says he retreated to his "rural habitation" where, rather than being infected by "useless leisure," he vowed to finish his book, able to add many things which he had seen and tested through experiment.[99]

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[95] William A. Hinnebusch, *The History of the Dominican Order Volume I: Origins and Growth* (Staten Island, NY: Alba House, 1966), pp. 65-67.

[96] Ibid., 312-17.

[97] Epistula missa fratri Aymerico, 2: "Cum praesentem librum Ruralium commodorum ad Dei omnipotentis honorem et serenissmi regis Karoli delectationem meique ac ceterorum utilitatem.."

[98] Ibid: "..multis et variis occupationibus impeditus diu perficere distuli. Verum a Vestra nobili sanctitate, ut complerem, rogatus, quod pro dominico mandato libenter recepi, iudiciorum et civilium occupationum strepitu relicto..."

[99] Ibid: "..quibus non poteram animum, ut operi expediebat, quietum habere, ad ruris habtionem septuagenarius me transtuli, et ne otiis inutilibus aliquo tempore inficiar iustisque satisfaciam votis, caelestis regis auxilio librum perficere curavi; ac etiam ei, quod primo scripseram, addidi multa utilia, quae postea vidi et per experimentiam approbavi."

Crescenzi then summons the "great prudence" of Amerigo da Piacenza in correcting his work, in order to eliminate what is "rusty," but not to remove what is useful.[100] He admits his own inevitable limitations in compiling everything known about agriculture, because of the wide variety of subjects he has pursued. Because all of these tasks are subject to the perpetual motion of the heavens, Crescenzi then pays obeisance to the omniscience of God, who alone is able to know all things past, present, and future.[101] He excuses any remaining blemishes, stating that works that do not deal with faith and "in which many things flourish" should not be rejected for their faults,

> ..just as a rose garden should not be destroyed because of some thorns, if it brings forth sweet-smelling roses, [or] an apple tree in which many joys are found should not be cut down because of a few worm-infested apples.[102]

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[100] Epistula missa fratri Aymerico, 3: "Vestrae igitur dominationi eundem grandi affectu offero corrigendum per Vestram prudentiam, quae summa est, et Vestrorum gratrum humiliter supplicans quod ipsius elimetur rubigo et, quod est utile, non spernatur."

[101] Ibid: "Nam aperte cognosco, quod nec per me nec forsan per alium possent integre sciri omnia, de quibus in toto libro tractatur, propter infinitam agendorum varietatem, quae semper sub perpetuo motu caelesti virtute consistit; sed ab omnibus omnia praeterita sciri possunt cum auxilio eius, qui sine defectu praeterita, praesentia et futura cognoscit." (Ibid.)

[102] Ibid: "Non enim opus, quod de fide non tractat, reprobari vel sperni dbet paucis maculis, in quo plura nitent, sicut nec eradicatur rosarium quibusdam spinis, si multas redolentes exhibeat rosas, nec absciditur arbor paucis vermiculosis pomis, in qua multa invenientur iocunda." For a discussion of the metaphorical equating of texts and fields, and writing and ploughing in the middle ages, see Curtius, pp. 311-315 in the chapter on "The Book as Symbol."

Crescenzi's own close connection to the Dominican order is evident from his relationship to Father Amerigo da Piacenza to whom he dedicates his treatise. In his last will and testament, moreover, Crescenzi bequeaths his library to the Dominican monastery.[103]

II. SOURCES

In the prologue, Crescenzi states that he prepared himself for writing his treatise by observing agricultural practices and reading ancient and new books on agriculture.[104] While it is difficult to ascertain what practices Crescenzi witnessed and the degree to which these had an actual effect on his book, it is possible to establish with some certainty what books he was using either first or second hand. The compilatory nature of Crescenzi's endeavor has caused many scholars to question the utility of his treatise as a document of actual farming and gardening practices. Approaching the *Liber ruralium commodorum* as a work in the thirteenth-century encyclopedic tradition in which originality as such was not valued, however, deepens an understanding not only of the literary and intellectual culture to which it belonged, but also brings to the fore the

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[103] Alfonsi etal., pp. 84-6; see also, Alfonso d'Amato, *I Domenicani e l'Universitá di Bologna* (Bologna: Edizioni Studio Domenicano, 1988), p. 149-52.

[104] Prologus 3: "multosque libros antiquorum et novorum prudentum perlegi et diversas ac varias operationes colentium rura vidi."

novelties and innovations imbedded in a treatise that relies so heavily on written sources.

Crescenzi cites authors ranging from Aristotle and Pliny the Elder to Isidore of Seville and Albertus Magnus. The most significant contributions to his treatise come from two major groups: the Roman agricultural tradition and the medically oriented herbals and treatises on health. His method of compiling the works of these authorities, ancient and contemporary, demonstrates Crescenzi's allegiance to the encyclopedic tradition. His incorporation of lexical aids, such as alphabetization and a table of contents betray an encyclopedic sensibility. By paying lip service, moreover, to his own experience and observation, Crescenzi aligns himself with the emerging scientific method exemplified by the work of Albertus Magnus, whose endeavors were rooted in an encyclopedic tradition that gave birth to an idea of science based on observation and experimentation.

THE ENCYCLOPEDIC TRADITION

The word "encyclopedia" comes from the Greek, "ενκυκλιοσπαιδεια" which literally means circular, or well-rounded education; the term was used by Quintilian, Galen, and Pliny to describe their own enterprises.[105] The thirteenth-century encyclopedists generally belonged to the

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[105] Pliny, Preface, 14, *Natural History in Ten Volumes*, transl. H. Rackham (Cambridge, MA: Harvard University Press, 1938).

Franciscan and Dominican orders. Such works as Vincent of Beauvais' *Speculum majus* of 1244, Thomas of Cantimpré's *Liber de natura rerum* of ca. 1220-1240, and Bartholomäus Anglicus' *De proprietatibus rerum* of ca. 1250 compiled the writings of ancient authorities and incorporated the great number of translations made in the twelfth century of the works of other Arab philosophers in the Aristotelian tradition.[106] The encyclopedists were motivated to do so after the rediscovery of Aristotle by such scholastics as Albertus Magnus, who made important contributions to the history of science and the development of the scientific method.[107] It has been suggested, moreover, that they were influenced by Augustine's remark in the *Christian Doctrine* that it would be marvelous to assemble in one volume the nature of all things.[108] The origins of such an exhaustive compilation of knowledge are already evident in Plato's idea of the academy, although the Elder Pliny's first-century 37 volume *Natural History* is considered the first encyclopedia.[109] The encyclopedic tradition was continued in the early middle ages, most prominently by Isidore of Seville. The *Etymologiae*, completed

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[106] L. Thorndike, *A History of Magic and Experimental Science* 2 (New York: Macmillan, 1923-58), p. 305.

[107] See Thorndike, p. 531.

[108] Ibid., p. 375; see also Curtius, p. 56.

[109] R. Collison, *Encyclopedias: Their History throughout the Ages* (New York: Hafner Publishing Co, 1964) p. 21.; Although Pliny's work was widely cited in the Middle Ages and might have been considered a staple in the libraries of learned men, it is unclear to what degree a knowledge of Pliny's writing was limited to such excerpts or compilations as the *Medicina Plinii* by Serenus and Marcellus from the third century.

in the seventh century, presented information on the sum of human knowledge by using a method that relied on the origins of words or etymologies, as the title suggests. Isidore drew from a wide variety of sources with great accuracy. His excerpts are considered by some scholars as reliable as primary sources. What is particularly significant about Isidore's work is that he drew both from Christian and Pagan authors, a practice which had at that time not been accepted.[110] In the intervening period between Isidore's seminal work and the thirteenth-century encyclopedists, such scholars as Hrabanus Maurus in the ninth century would compose encyclopedias that were arranged according to the celestial hierarchy of being, beginning with God and the angels and proceeding downward to such earthbound phenomena as plants and animals.[111]

The act of compiling authoritative texts, however, involved far more than mere recapitulation; the process gave rise to a new means of organizing books and laying out the pagination of texts.[112] The act of *compilatio* was therefore accompanied by the principle of *ordinatio*, which resulted in the development of tables of contents, or rubrics, at the

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[110] See, Max Mantitius, *Geschichte der lateinischen Literatur. Vol. I Von Justinian bis zur Mitte des 10. Jahrhunderts* (Munich: C.H. Beck, 1911), pp. 60-66.; see Curtius, p. 43 and Appendix XIV, "Etymology as a Category of Thought" , pp. 495-500.

[111] Collison, pp. 36-7.

[112] See R. B. Parkes, "The Influence of the Concepts of Ordinatio and Compilation in the Development of the Book," in *Medieval Learning and Literature. Essays presented to Richard William Hunt,* J.J. G. Alexander and M.T. Gibson eds. (Oxford: Clarendon Press, 1976) p. 115.

beginnings of books.[113] The change that took place has been related to the transition from monastic reading to scholastic reading. While the former was meditative and took place in a culture in which memory was valued as an end in itself, the latter was concerned with seeing texts as a whole in order to better understand the individual glossed passages. As a result, value was placed on the ease of access to a given passage.[114] For this reason chapter headings were assigned and tables of contents devised.[115] This not only became standard practice in the writing of new books; scholars frequently went back to existing authorities and divided their works into logical sections and provided tables of contents.[116]

In addition to using the concept of *ordinatio*, the encyclopedists began to use alphabetization as an organizing tool. Historically, alphabetical organization had been used exclusively in books on plants, such as those by Pliny and Dioscorides, although short alphabetical lists are also found

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[113] Ibid., pp. 117-119.

[114] R. and M. Rouse, "Statim invenire. Schools, Preachers and New Attitudes toward the Page." In: *Renaissance and Renewal in the Twelfth Century*, R.L. Benson and G. Constable, eds. (Cambridge, MA: Harvard University Press) pp. 202-3; and Parkes, p. 115; A description of the shift from the book as a physical object to the text as an abstract notion is found in Ivan Illich, *In the Vineyard of the Text: A Commentary to Hugh's Didascalicon* (Chicago: University of Chicago Press, 1993) 115-124.

[115] In terms of organization, the *Natural History* is innovative because Pliny prefaces his work with the contents of each of the books and the authorities consulted.

[116] Parkes, pp. 124-5.

in Varro, Plautus and even the *Aeneid*.[117] These lexical devices, however, presented philosophical problems for medieval thinkers insofar as they believed in a rational order that needed to be reflected in their books. A writer like Albertus, for example, apologized for using an alphabetical order in his commentary on Aristotle's *De animalibus*.[118] None of the thirteenth-century encyclopedias rely exclusively on an alphabetical order, but they employ alphabetization within the context of a rationally ordered work.[119]

Crescenzi follows in the encyclopedic tradition, for although he is not assembling all things known in general, he recreates the rural world in book form. He cites a total of 32 authorities, ranging from Aristotle and Pliny to Isidore of Seville and Albertus Magnus; some are cited only once, while others are mentioned nearly 100 times. Although Crescenzi does not refer directly to the compilers of the thirteenth-century encyclopedias,[120] he does cite the same

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[117] L. W. Daly, *Contributions to a History of Alphabetization in Antiquity and the Middle Ages* (Brussels: Latomus, 1967) pp. 35-7.

[118] "hunc modum no proprium philosophie esse." quoted in Rouse, p. 211. Alphabetization as an organizing principle for encyclopedias did not become fully accepted until the eighteenth century, which is the same time that the term itself is found in the titles of encyclopedic works. See Collison, p. 3.

[119] Richard and Mary Rouse have identified this as the "Thirteenth Century Fusion", p. 219. In the introduction to Book 17 of Bartholomäus Anglicus' encyclopedia, *De proprietatibus plantarum* the author writes: "in textu, vel in glossa, et hoc prout poterimus, faciemus per ordinem alphabeti." *De rerum prorietatibus* (1601), reprint (Frankfurt: Minerva GMBH, 1964), p. 771.

[120] Richter (1995, p. LXXII) suggests that Crescenzi refers to Bartholomäus' work by title but not by author in VI, 6.

sources: Pliny, Isidore of Seville, and Albertus Magnus, among others. Through careful analysis, Richter has been able to distinguish between the sources Crescenzi would have consulted directly and those he would have known secondhand from citations or compendia. A knowledge of the literary culture and other related books has also made it possible for Richter to speculate on the sources Crescenzi used even in cases where he does not state them specifically. The matter-of-factness with which Crescenzi draws from such a wide variety of authors is typical of thirteenth-centuries writers for whom the concept of originality as such did not exist.[121] In some cases he refers to the source directly, using the phrases "ut ait...", "secundum...," "dicit...," or "scribit..." In other cases he will derive his information almost verbatim from an author without bothering to give his name. There are also numerous places where he simply uses a passive phrase, such as "dicitur", to indicate that his information is considered part of the general knowledge of a subject. Tables of contents, chapter headings, and alphabetization are markers of a new way of thinking about books and texts that are also found in Crescenzi.

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[121] For a discussion of the medieval idea of authorship, see M. Carruthers, *The Book of Memory: A Study of Memory in Medieval Culture* (Cambridge: Cambridge University Press, 1990) pp. 189-220.

ROMAN AGRICULTURAL TRADITION

Crescenzi was writing in the context of the encyclopedic tradition, but his work did not have the same universal aim as those of his contemporaries. As the writer of an agricultural treatise, Crescenzi drew most heavily from the Roman agricultural tradition, which included such Roman writers as Cato, Varro, Columella, Gargilius Martialis, and Palladius. According to Richter, Crescenzi had actually read all but two of these - Columella and Gargilius Martialis[122] - and relied most heavily on Palladius.[123] What distinguishes Roman agriculturists from such Greek writers as Aristotle and Theophrastus, whose knowledge was rooted in science and philosophy, is that the former claim to have based their works on practical experience. Unlike the Greek writers, the Roman agriculturists infused their texts with maxims and proverbs passed on from author to author, emphasizing the importance of lore and received wisdom in agricultural practice.[124]

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[122] Gargilius Martialis was a writer of the third century of whose works only fragments survive, and his main source appears to have been Pliny. Unlike the agricultural authors I will discuss below, Gargilius showed an interest in the more scientific observations associated with the writings of Greek doctors and herbalists. Moreover, he tended to challenge some of the received opinions perpetuated by the other authors mentioned. See K.D. White, pp. 29-30.

[123] Richter, 1995, pp. XXVI.

[124] K.D. White, *Roman Farming* (Ithaca, NY: Cornell University Press, 1970), pp. 14-18.

MEDICAL AND HERBAL TRADITION

In addition to the agricultural writers, Crescenzi was able to draw on the herbalist tradition. This tradition, which was rooted in medicine, was not botany in the modern sense of the term, but usually consisted of lists of plants and herbs that could be used for medicinal purposes also known as *pharmacopoeia*. The herbs and plants were identified as simples or *simplices*, because they were the individual components of which compound drugs were composed.[125] The herbalist tradition is far older than the agricultural one and dates back to the fifth and fourth centuries BC, to the writings in the Hippocratic Collection whose purpose was practical and made no scientific or theoretical claim.[126] One of the most famous of the Greek herbalists, however, was Theophrastus the pupil of Plato and Aristotle who saturated his work with scientific observations. In his *Enquiry into*

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[125] K. M. Reeds, "Renaissance Humanism and Botany," *Annals of Science* 33 (1976): 521, footnote 8.

[126] C. Singer, "The Herbal in Antiquity and its Transmission to Later Ages," *Journal of Hellenic Studies* 47 (1927): 1. The problem of theory vs. practice in the study of medicine and its definition as an art or a science warrants further investigation. Medicine held a special place in the definition of the arts going back to Plato who distinguished it from cookery. Medicine combines the applied and speculative arts because it is based on empirical judgments but also requires a theoretical understanding of the human body. (See, P. Kibre, "Arts and Medicine in the Universities of the Later Middle Ages," in *The Universities in the Late Middle Ages*, J. Paquest and L. Isewijn, eds. (Leuven: Leuven University Press, 1978) pp. 213-214.) Within the context of this definition, however, emphasis was placed on the theoretical aspects of medicine and it was not until the 15th century under the influence of humanist medicine that a study of plants and herbs became an official part of a medical curriculum, which up until that time had been concerned mainly with theoretical issues. See Reeds: 522.

Plants, written in the fourth century, he compiled the existent knowledge of plants into one work; he not only described the uses of plants, but he also attempted to create a morphology of the plant world that betrays the influence of Aristotle.[127] Although Theophrastus' work was not rediscovered by the West until the early fifteenth century, he greatly influenced Dioscorides, Galen, and Pliny, whom medieval doctors, scientists, and encyclopedists consulted for information on plants and their healing powers, along with the writings of such Arab doctors as Avicenna.[128]

Establishing with certainty which works of ancient and medieval medicine Crescenzi consulted is difficult, since so many of them were excerpted in compilations, compendia, or encyclopedias. In some instances, as we have observed, Crescenzi may mention a name without having consulted the original source, while there are other instances where he may be unwittingly quoting directly from an author because the compilation he consulted did not give the name of the original source.[129] The medical or herbalist texts Crescenzi cites are Dioscorides, Galen, Pliny, Avicenna, Isaac Iudaeus,

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[127] See the Introduction to Theophrastus *Enquiry into Plants*, transl. Sir Arthur Hort, (Cambridge, MA: Harvard University Press, 1916); and Singer: 2.

[128] Theophrastus' works were not discovered by Western humanists until the early fifteenth century among a group of Greek manuscripts from Constantinople. Reeds: 522.

[129] See for example Richter's discussion of Crescenzi's use of Platearius, pp. LX-LXV.

and Platearius.[130] Of these Richter asserts that Crescenzi definitely had direct access only to Avicenna's *Liber Canonis*, the eleventh-century Arabic work which set the tone for the study and practice of medicine throughout the later Middle Ages and Renaissance.[131] He was probably familiar with the other authorities through pharmacological compendia, encyclopedias, or fragmentary texts.[132] The deep influence of Avicenna is evident, for example, in the medical doctrine of the four humors, a dominant theme used to classify the properties of climates, soils, and plants. Crescenzi's use of Avicenna's principles in the first book is a particularly interesting example of how his work is essentially a hybrid of the agricultural and medical traditions. On the one hand he follows the Roman precedent, beginning as he does with the selection of the site, on the other hand, he uses medical knowledge to justify the same recommendations made by the agricultural authorities. By combining the agricultural and medical traditions, Crescenzi composes a work that touches upon all aspects of the rural life in an unprecedented manner.

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[130] Aristotle is also quoted five times, but these citations do no stem from the Latin translation of *De plantis* falsely attributed to Aristotle in the middle ages and used by Albertus Magnus among others, but are observations by Aristotle passed down to Crescenzi via Palladius. Richter, 1995, pp. XXXIX-XLI.

[131] See Nancy G. Siraisi, *Avicenna in Renaissance Italy. The Canon and Medical Teaching in Italian Universities after 1500*, (Princeton, NJ: Princeton University Press, 1987), p. 12.

[132] Thorndike has characterized this tradition and its dissemination in the middle ages as one dominated by fragments and pseudo-literary compendia. See, Vol. I, pp. 595-6.

CHAPTER 2: DESCRIPTION OF THE TREATISE

While the comprehensive nature of Crescenzi's treatise is obvious from the table of contents, a closer look into the text shows how wide Crescenzi's definition of agriculture extended. Although it would go beyond the scope of this study to summarize properly the treatise in its entirety, in this chapter I will emphasize those parts of the treatise that are relevant to the idea of the pleasure garden, which Crescenzi describes in Book Eight. Gaining insight into the treatise as a whole will allow me to contextualize properly Crescenzi's discussion of the pleasure garden. Not only does the eighth book directly address the books that surround it, but these books themselves refer back to the eighth book. These references are sometimes made directly, at other times the connections can be seen in the way many of the aesthetic issues raised in the pleasure garden book find their way into Crescenzi's more seemingly practical discussions of climate, soils, plant types, and the like. Pointing out these connections makes it possible to understand not only how the pleasure garden functions within the estate, but also how, ultimately, the purpose of the pleasure garden and the purpose of the estate are interdependent; the treatise describes a physical and economic structure in which the pleasure garden can exist, while the pleasure garden provides

a mental and aesthetic framework that can be applied to the estate as whole. I will also consider what sources Crescenzi used in each of the books in order to broaden the context of the treatise itself beyond gardens and agriculture.

BOOK ONE: LOCATING, OUTFITTING AND RUNNING AN ESTATE

The complete title of Book One is: "On choosing the place of habitation, the estate, and the house, and on those things which must be done by people living on a farm." In this book Crescenzi gives general advice on how to choose, irrigate, outfit, and run a rural estate taking into account issues of health, the division of the estate, and the duties of the owner, whom Crescenzi frequently refers to as the *paterfamilias*, a term for the head of the household borrowed from ancient Roman writings on agriculture.[133] Crescenzi's main sources for this book are Avicenna, Palladius, and Cato.

CHOOSING A LOCATION

Crescenzi structures his discussion of how to choose a good location for an estate around four of the five *elementa generatorum*, or elements of generation as defined by Avicenna: the climate (or atmosphere), the winds, water, and the situation. The fifth of these, the soil, is discussed in

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[133] The term *paterfamilias* was used to denote the head of the household, for the legal and cultural significance of the term, see the entry "Pater Familias," in *Paulys Realencyclopädie* 18, 4 (Stuttgart: Alfred Druckmiller Verlag, 1964).

Book Two, which focuses on plant generation. The connection Crescenzi makes between the quality of the atmosphere, winds, water, situation and the health of the inhabitants of that region demonstrates his adherence to the principle that airs, water, and places can have either a positive or an adverse effect on people's health, also known as the environmental theory of places,[134] which originated in the writings of Hippocrates, but continued to influence such writers on medicine and health as Avicenna, Crescenzi's source for this manner of thinking, whom he cites by name 54 times.[135] Avicenna was an Arab philosopher who wrote on a wide variety of philosophical subjects during the tenth and eleventh centuries and was greatly influenced by the works of Aristotle. The translation of his works, along with those of Averroes, in the twelfth century led to a revival of Aristotelian philosophy in the west and contributed to the development of experimental science.[136]

The *Liber Canonis*, a treatise on medicine in five books, is the work for which Avicenna was most famous and is also the book Crescenzi used in compiling his treatise. It was translated into the Latin by Gerard of Cremona in the twelfth

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[134] For a discussion of Hippocrates' environmental theory, see Clarence J. Glackens, *Traces on the Rhodian Shore* (Berkeley: University of California Press, 1967) pp. 80-83.

[135] For a discussion of the influence of Avicenna, see Richter, 1995, pp. XXXIII-XXXIV; see also Crossgrove, p. 83.

[136] See A.C. Crombie, "Avicenna's Influence on the Medieval Scientific Tradition," in *Avicenna: Scientist and Philosopher. A Millenary Symposium* (London: Luzac & Company, 1952) pp. 84-5.

century. Although many of Avicenna's views were challenged with the advent of "humanist medicine" in the fourteenth century, his work nevertheless continued to be used as a textbook at the universities of Padua and Bologna well into the sixteenth century.[137] In the first book of the *Liber Canonis,* Avicenna follows Aristotelian teaching by outlining the theory of the four humors and how they must be kept in balance in order to ensure health. He also writes at length about the influence of climate and geography on the balance of the humors and includes discussions of air, water, and soil. Book Two is Avicenna's *materia medica*, which includes an alphabetical listing of plants, their physical properties, and the drugs that can be made from them; this section is greatly influenced by Galen and Dioscorides.[138] Book Three describes diseases of specific organs and their symptoms. Book Four deals with general diseases of the body and how they should be treated; and Book Five is a collection of recipes for concocting compound drugs.[139]

Avicenna's description of the four humors permeates the *Liber ruralium commodorum*, not just in the first book, but also in the listing of grains, herbs, and trees. In Book One,

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[137] See Siraisi, 1987, p. 9. Padua and Bologna were the most important center of medical learning in the thirteenth and fourteenth centuries. See also M-T. d'Alverny, "Avicennisme en Italie," in *Avicenne en Occident*, ed. D. Jacquart (Paris: Editions Gallimard, 1993) p. 125.

[138] Crombie, p. 91.

[139] For a partial translation of Avicenna's *Canon*, see O. Cameron Gruner, *A Treatise on the Canon of Medicine of Avicenna. Incorporating a Translation of the First Book* (London: Luzac & Co.), 1930.

Crescenzi follows Avicenna's conclusions about the effect of climate and winds on health. He makes recommendations about where to locate a farm in different regions and climates, since the properties of climates, or their *complexiones*, have a direct effect on the humors. The goal is always to achieve a balance between the *complexiones*; if a farm is located on a mountain, its orientation will differ from one located at the base of a mountain.[140] And, as he states in the preface, the efficient management of a farm is dependent upon the health of its inhabitants.[141] The interaction between the *complexiones* and *humores* is vital to understanding Crescenzi's treatise, since they reappear throughout, in reference not only to the salubriousness of a location, but also to the medicinal properties of the plants themselves.

Complexio, which is sometimes translated as temperament, was the common term used since the twelfth century to describe the balance of the qualities of hot, wet, cold, and dry that arises out of the mixture of elements in bodies, plants, soils, winds, and waters.[142] It was used by medical practitioners as a system of explanation to link disease and

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[140] I, 4, 1-13.

[141] I, Preface: "Quoniam cultus ruris propter continuos eius labores praecipue fortitudinem habitantium quaerit, idcirco conveniens mihi visum est in hoc primo libro doctrinam tradere de his, quae ad cognitionem salutis locorum habitabilium spectant et de quibusdam habitationi necessariis; nam corpora hominum quibuscumque commodis pecuniariis debent praeferri."

[142] Nancy Siraisi, *Medieval and Early Renaissance Medicine: An Introduction to Knowledge and Practice* (Chicago: University of Chicago Press, 1990), pp. 101-104.

therapy, in other words, having diagnosed a medical problem according to the theory of *complexio*, a doctor would then be able to decide what methods could be used to balance the overabundance or absence of hot, wet, cold, or dry elements. The origin of this theory is derived from the four elements, earth, water, air, and fire, whose properties are described according to weight, temperature, and humidity. Thus earth is heavy, cold, and dry; water is heavy, cold and moist; air is light, hot and moist; and fire is light, hot and dry.[143] A person's *complexio* was thought to be discernible by touch or observation and varied according to age, sex, and geographical region.[144]

The doctrine of the four humors refers to the specific bodily fluids associated with certain temperaments. These fluids were considered the vehicle of *complexio*, in other words, they were the means by which a complexional balance could be maintained. The four humoral fluids were blood, phlegm, bile (or choler), and black bile (or melancholy). Phlegm was a term used to describe whitish secretions, and the organ most often associated with phlegm was the brain. Bile was thought to be found in the gallbladder and manufactured by the liver, whereas black bile was located in the spleen. The humor "blood" was thought to be only one of the components of the substance we call blood. (Blood was

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[143] Avicenna, in Gruner, pp. 35-37.
[144] Siraisi, 1990, p. 102.

thought to be made up of all four humors, which were themselves created by the manufacture of blood.) Because of its relationship to the circulation system the humor blood was associated with the body as an entirety, unlike the other humors, which were associated with their respective organs.[145]

CLIMATE

Crescenzi emphasizes the importance of locating a rural estate in an area with a temperate climate, or well-balanced *complexio*. Although the ideal *complexio* of atmosphere is light, hot, and moist, it can be effected by outside factors that change its make-up, causing it to be rotten, and hence damaging to the humors. Such outside factors include temperature, the presence of standing water or marshes, the winds, and exposure.[146]

WINDS

The quality of the winds themselves is determined by their place of origin. The south wind, whose *complexio* is heavy, hot, and wet, is considered detrimental to good health, because it opens up the pores, thereby allowing illnesses to penetrate the body more easily. As a result it causes sickness, fever, and drowsiness.[147] Although Crescenzi

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[145] Ibid, pp. 104-6.
[146] I, 1, 1-7.
[147] I, 2, 2.

puts off his discussion of geographical determinism to the section on location, it is evident that the reason for the bad effect of winds from the south is related to the attributes of southern regions, where life is slower, women menstruate more profusely, and inhabitants in general suffer from more fevers. The winds from the north, having crossed mountains and coming from colder regions, in contrast to the warm origins of the southerly winds, are considered healthful because they close up the pores, causing the body to be able to defend itself from sicknesses.[148]

While the northerly and southerly winds are characterized mostly by temperature, those originating from the east and west are described more in relationship to humidity. Easterly winds are less humid than westerly ones, partly because the sun rises in the east and sets in the west. The logic is that easterly winds are coming from the direction where the sun has already been, as opposed to westerly winds, where the sun has yet to go. Because they are drier, easterly winds are considered slightly healthier than westerly ones.[149]

WATER

The next element Crescenzi deals with is water, which exists between earth and atmosphere and is naturally cold and

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[148] I, 2, 2-3.
[149] I, 2, 4.

wet. The main function of water is to hold together substances, making them malleable without losing their shape. In his discussion of water, Crescenzi is particularly careful to point out that it benefits not only the inhabitants of an area, but also its plants. The best water, according to Crescenzi, comes directly from the earth and flows over mud rather than rocks, since the mud can act as a sort of filter, sifting out impurities. Different sorts of water can have different properties, especially in terms of weight, which may be tested through a number of experiments Crescenzi proposes. For example, he suggests that conclusions can be drawn with respect to the heaviness of water, which can be tested by submerging rags into different types of water, allowing them to dry and then weighing them.[150] In addition to giving advice on how to purify water by distillation and boiling, or mixing it with wine and vinegar,[151] Crescenzi describes the different types of water and their harmful and healthful properties. These include spring water, rain water, standing water, glacial water, salty water, and mineral waters.[152]

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[150] I, 3, 1-4.
[151] I, 3, 13-15.
[152] I, 3, 5-12.

SITUATION

In appraising the value of particular locations, Crescenzi says that one must consider both the healthfulness of the location and the fertility of a region. In such an evaluation, a number of factors must be taken into account. The geographical location of a site, whether in a hill or a valley, in the mountains or on the shore will determine what can and cannot be cultivated there, but will also affect the health of the occupants in different ways. High-lying locations make people healthy and strong because of the purer air, while in low-lying places persons are more likely to become ill because of being closer to standing water.[153] Rocky and exposed places, which are cold in winter and hot in summer, engender strong, solid, hairy types who are disobedient and clever in the arts.[154]

The geographical determinism implicit in the description of rocky exposed places is extended to entire regions. In the colder regions of the North the inhabitants have straight, light hair. Moreover, he describes them as long-lived and wolf-like owing to the cold climate, which drives out sickness. In the warmer southern regions, by contrast, people have dark curly hair, age more rapidly, and are more prone to illnesses. Following the previously mentioned

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[153] I, 4, 2-5.
[154] I, 4, 6: "...et in eis bellorum foritudo et sollertia in artibus et acuitas."

discussions of easterly and westerly winds, these regions are characterized according to humidity and to properties of skin rather than hair type. Thus inhabitants of the less humid eastern regions, which have clearer air, supposedly have darker, taut skin, whereas in the wetter western regions people have light-colored, looser skin.[155]

OUTFITTING AN ESTATE

Having accounted for the particular climate of a place, the disposition of the site, and the health of the neighbors, Crescenzi turns to the construction of the house and grounds themselves. The house, as Crescenzi describes following Avicenna and others, should be laid out according to the direction of the winds: closed to the south, exposed to the north. It should have shade in summer and sun in winter and ideally be located at the base of a mountain, which makes installing an irrigation or water system easier.[156] These recommendations are commonplace in the literature on villas.[157] The entire estate is intended to incorporate all different rural activities and accommodate both the master's

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[155] I, 4, 7-13.

[156] I, 5, 1-2: For Avicenna's discussion of the effect of places and residences on the human body, see *Canon*, in Gruner, pp. 204-210.; Vitruvius, whom Crescenzi had no knowledge of, recommends laying out cities according to these same criteria, see Book I, iv in *On Architecture* 2 volumes, transl. Frank Granger (Cambridge, MA: Harvard University Press, 1931).

[157] See, *The Letters of Pliny the Younger*, ed. Helen H. Tanzer (New York, G. E. Stechert, 1936). Like Vitruvius' book on architecture, Crescenzi probably did not have access to Pliny's letters, but they were looking at similar medical sources and arrived at similar conclusions.

family and the farmers in his employ. Its safety may be secured by building strong walls around the perimeter, or perhaps digging ditches filled with thorn bushes. Another way of ensuring the security of the site is to be sure to build in proximity to the neighbors.[158]

In addition to describing the various types of enclosures that may be used to surround the estate, Crescenzi also makes recommendations for the disposition of its interior. There should be one path that divides the estate in two, from which paths should radiate that make the vineyards, meadows, and fields readily accessible.[159] The main path leads out of the estate through well-secured gates set into the enclosing walls. These gates may be designed in accordance with the taste of the master and should be locked at night to keep out unbidden guests. Within the estate there is a further system of enclosures, which keep the rustics away from the master and his family. The dividing road serves not only to divide the entire space into the place of work and the place of habitation, but also into the space of the master and his family and that of the farm workers. Such division, according to Crescenzi, ensures the peaceable coexistence of the master and his workers.

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[158] I, 6, 1-10.

[159] I, 7, 1: "In medio faciei anterioris viae fiat ingressus in eam latitudinis decem pedum adminus, et eiusdem latitudinis in opposita parte fiat egressus, per quem ad aream, vineam vel agros posteriores eatur."

Constructing an ornamental wall of trees around the master's house, moreover, allows him to distance himself from the laborers on the other side of the estate and to protect him from their "voracious greed" (*voraci improbitate*).[160] It is in this area that Crescenzi recommends placing the pleasure garden, which he refers to by name as a *locus amoenus*, though he tables lengthy discussion of it until Book Eight.[161]

Having described the general layout of the estate, Crescenzi turns to the more specific discussion of the different types of irrigation systems that may be used if no natural spring exists nearby. He mentions wells and where they should be dug, aqueducts and the safest materials from which to construct them, and cisterns for collecting rainwater.[162] He continues the theme of building and construction materials in outlining the different parts of the main house and what types of wood or stone are best suited for different areas or regions. Finding good building materials is not only important for the structural soundness of the house itself, but also for contributing to the humoral balance of its inhabitants. Particular months of the year - November and December - are identified as well suited for

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[160] I, 7, 3: "Harum autem vitium et arborum fructus domino specialiter reservandi per fortes clausuras erunt a rusticorum voraci improbitate securi."

[161] Ibid: "In eo etiam loco amoenum formabitus viridarium et dominicus hortulus, et apum dilecta societas illaesa servabitur, et turturaricii et lepusculi secundum modos, quois in suis locis dicam."

[162] I, 8-10.

house construction because this is the time when trees are most easily felled.[163]

RUNNING AN ESTATE

Crescenzi concludes Book One with two chapters on the duties of the overseer and the master of the estate, respectively. These are lifted almost verbatim from Cato's *De agricultura*, with only slight modification.[164] He removes, for example, references to the ancient rites of the *compitalia* and consulting auguries. The duty of the overseer is basically to ensure the efficient running of the estate by keeping track of the slaves and obeying the master's wishes. The duties of the master, for his part, begin with choosing a fertile, healthy site and making sure that the overseer is performing his duties. As a businessman, however, he is also urged to sell more than he buys.[165] This section, which is heavily glossed, is the only place where Crescenzi refers directly to issues of labor in the estate and who performs it.

BOOK TWO: PLANT PHYSIOLOGY, SOILS, AND SOWING

The main subject of Book Two is what is appropriate to the generation of plants. This book encompasses not only what is universal to all plants and how they are sown, but

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[163] I, 11.
[164] V, 2-5, Cato, *De agri cultura*.
[165] I, 12-13.

also how soil is cultivated by means of ploughing, digging, and fertilization. Although Crescenzi's entire work is often classed as a treatise on the natural sciences,[166] Book Two in particular is indebted to contemporary methods of scientific inquiry and observation. It is greatly influenced by the work of Albertus Magnus, whose intellectual presence throughout the treatise as a whole has caused one scholar to the call it "albertinisch," or Albertian.[167] Crescenzi reconciles the theoretical nature of science with its practical application, partly by creating an analogy between the art of the farmer and the doctor.

> Now finally in this way wild plants (*silvestres*) are converted into garden (*hortenses*) plants by means of art (*artificio*). It [the garden] brings forth a moist uncultivatedness on its own and is altered through cultivation (*per cultum*), just as the body [is altered] through medicine, and then it can be converted to another *complexio*, just as the doctor recognizes bad humors and after that tries out good food and by means of an altered diet he devotes himself to the generation of good blood.[168]

Book Two begins with a discussion of plant physiology, where Crescenzi classifies plants according to description, function, and *complexio*. He then turns to soil and its cultivation, which is where the farmer must apply remedies based on his knowledge of plant physiology in order to

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[166] Sarton, p. 813.
[167] Richter, p. XXX-XXXII.
[168] II, 9, 5: "Hoc etiam artificio plantae silvestres in hortenses aliquando convertuntur. Educitur enim ex ipsis humidum incultum et per cultum alterantur corpora earum sicut per medicinam, et tunc ad aliam complexionem convertuntur, sicut medicus ducit humorem malum et postea praebet nutrimentum bonum et alterantibus <cibis> studet ad generationem sanguinus boni."

encourage plant growth. Soils lead to sowing, since this activity is where the relationship between plants and soils begins. Crescenzi's discussion of sowing is fairly brief and limited mostly to considering when to sow seeds and in what type of soil, thus the following will be limited to plant physiology, soil, and the cultivation of soil.

PLANT PHYSIOLOGY

Crescenzi begins by outlining the seven factors without which plants could not be born and grow. The first three are related to warmth - of the air, of the place, and of the seeds. The second three to the humors - of the plant itself, of the place, and of the precipitation. The final factor is related to the atmosphere, or climate, more generally.[169] The following sections are devoted to how plants are sown, from seeds, from shoots, and from transplantation. Given that Crescenzi uses the word "generatio", it might be more proper to say that he considers the birth or origin of plants. This terminology reinforces the human or animal traits Crescenzi ascribes to the plant world; throughout this book the lives and properties of plants are compared and contrasted to those of animals. Misquoting Plato's *Timaeus*, Crescenzi likens roots to mouths: "Plato says that plants are the inverse of the human figure."[170] Although Plato actually compares humans

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[169] II.1.
[170] II, 5, 4.

to plants that rise up in the direction of the heavens,[171] Crescenzi does align himself with the idea of a great chain of being, wherein higher life forms are replicated by lower ones in simplified form.[172] In addition to making such observations about the interrelatedness of plant and animal life, Crescenzi glosses and often copies Albertus' writings on the physical properties of plants, their integral parts, and how and why they grow and reproduce.[173] A detailed exposition of these sections is beyond the scope of this study, however, in order to achieve a more general understanding of how Crescenzi integrated Albertus' work, a brief consideration of Albertus Magnus must be undertaken. Although Albertus is mentioned by name fewer times than Palladius and Avicenna, he was in fact one of Crescenzi's most important sources, not just for Book Two, but for the treatise as a whole.

Albertus Magnus was one of the most influential thinkers of the thirteenth century and was familiar with many disciplines and ways of thinking. Born in Germany, he went to Padua in the 1220's to study law and medicine; he eventually became a Dominican friar. By becoming associated with the Dominican order, which saw its mission as acquiring

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[171] See 90A, *Timaeus*, transl. R.G. Bay (London: William Heinemann Ltd., 1929).

[172] For the definitive discussion of this hierarchical mode of thinking in ancient and medieval philosophy, see A.O. Lovejoy, *The Great Chain of Being* (New York: Harper & Row Publishers, 1960), pp. 58-60.

[173] II, 5, 2-12.

knowledge in order to reveal truths, Albertus not only became affiliated with the church, but was also able to participate in the debate at Paris over the relationship between philosophy and theology. Such followers of Aristotle as Albertus and Peter Abelard believed that theology was a science in the Aristotelian sense. Albertus' goal was to reconcile Aristotelian thought and theology, which had long been influenced by Platonist doctrines. In his capacity as a theologian and professor at the University of Paris, Albertus greatly influenced his pupil Thomas Aquinas who would go on to become the most important proponent of the thirteenth-century scholasticism.[174]

Scholars seem to agree, however, that Albertus' greatest contribution to the intellectual climate of the thirteenth century was in the realm of the natural sciences, although these should certainly be viewed within the context of a larger theological program.[175] As one scholars eloquently put it, his attitude toward the natural world and the role of human beings tending to the earth resulted in "a chain from theology to manuring."[176] He wrote on minerals, animals, astronomy and astrology, alchemy, mathematics, and the plant world. Unlike his fellow encyclopedists, who borrowed from

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[174] See A. Fries, "Das Leben und Werk des Heiligen Albertus Magnus," the introduction to Albertus Magnus, *Ausgewählte Texte,* transl. Albert Fries (Darmstadt: Wissenschaftliche Buchgesellschaft, 1981) pp. ix-xii.
[175] Thorndike 2, p. 531
[176] Glackens, p. 351.

the ancients uncritically, Albertus relied heavily on his own observations, which he often used to refute the previously undisputed claims of the ancients.[177]

Albertus' *De vegetabilibus* consists of seven books and was conceived as one of his commentaries on Aristotle, specifically on his alleged *De plantis*, which has since been shown to be a misattribution having probably been written by Nicolas of Damascene a late Hellenistic (first century BC) historian, scholar, and writer.[178] Albertus' purpose in writing this work was to explicate and give structure to *De plantis*, and to compile a catalogue of the properties of plants. Although Albertus' work has been credited by modern scholars with supplying remarkably accurate descriptions of plants, his main interest was in fact theoretical, to compose a "natural history of plant life," as one scholar has put it.[179] The first five books of *De vegetabilibus* are a theoretical, Aristotelian discussion of plant life, investigating such issues as whether or not plants have souls and how they reproduce. Book Six is devoted to the famous plant descriptions, from which Crescenzi also draws in later books when he explicates specific plants. It includes lists of specific trees and herbs rather than philosophical

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[177] See Fries, p. xvii.

[178] See the entry on "Nikolaus Damaskenos" in *Paulys Realencyclopädie* 17, 1, especially pp. 423-4.

[179] Karen Reeds, "Albert on the Natural Philosophy of Plant Life," in: *Albertus Magnus and the Sciences, ed. J. Weisheipl* (Toronto: Pontifical Institute of Mediaeval Studies, 1980), p. 343.

discussions in order to "satisfy the curiosity of our students...for philosophy cannot deal with particulars [as such lists can]."[180] The lists are given in alphabetical order and the entries include information on how the plants may be used. Book Seven is devoted to the more practical realms of agriculture and the cultivation of fields and includes the famous chapter on the pleasure garden excerpted so heavily by Crescenzi; most of the references to Albertus are from Book Seven, which was devoted specifically to agriculture.

Crescenzi in many ways follows Albertus' scheme of beginning with a more theoretical discussion of plant life, to later break down the plants into different types, such as large-scale crops, trees, herbs, and vines. However, even in this theoretical introduction to plant life and what is common to all plants, Crescenzi actually devotes more space to the practical implications of Albertus' treatise. In one important aspect Crescenzi departs from Albertus' method: by often borrowing from him uncritically Crescenzi is more aligned with other encyclopedists, such as Bartholomaus Anglicus and Vincent of Beauvais.

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[180] Quoted in, Thorndike, Vol. II, p. 536.

PROPERTIES OF SOIL

Soil, like climate, wind, water, and situation, is defined as one of the elements of generation, or life. Its properties are cold and dry, although it can be changed by external circumstances.[181] Crescenzi outlines the different naturally occurring soil types beginning with those that are not beneficial to sustaining plant life, such as dry, rocky, dusty, and bitter ones. Fertile soil, in contrast, exhibits such properties as richness and sweetness (*pinguedo et dulcedo*) and can be recognized by the manner in which water flows through it and by those things that grow well in it.[182] Moreover, he ranks the different soil types according to Cato's system, beginning with land that yields abundant and sweet-tasting grapes. The eight other soil types appear in the following order: watered gardens, osier beds, olive groves, meadows, grain fields, wood lots, orchards, and mast groves.

One of the external factors that may have an effect on the make up of the soil is its situation. Here Crescenzi once again embarks on a discussion of what must be considered in choosing a farm. While the information he glosses from Varro is more related to soil, he does include four factors seemingly unrelated to the rest of the book: whether or not the region is safe and free from robbers, if the neighboring

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[181] II, 26, 1.
[182] II, 26, 2-5.

farms are fertile and the farmers are able to sell their wares, the distance from the city, and access to transportation, be it by cart or ship. To these considerations he adds the concern about what the neighboring farmer grows, since some plants and crops should not be growing in proximity to one another.[183]

The final topic Crescenzi introduces into his discussion of soils is walled enclosures and dams intended to protect the estate from intruders. Among the intruders mentioned are people, wild animals, and floodwaters. As in Book One, Crescenzi outlines different ways of building walls, what soil types are best suited for what types of walls, and what time of year walls should be built. The building of dams is particularly important for the soil, since floodwaters can introduce an excess amount of moisture, thereby rendering the soil unplantable.[184]

CULTIVATING THE SOIL

The second major theme of Book Two is the art of cultivation, which leads to the domestication of plants, a process Crescenzi describes thusly: "It is called domestic when through cultivation of its taste it is made for the delight and use of humans."[185] It is in this context that he

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[183] II, 27.
[184] II, 28-9.
[185] II, 13, 20: "Et domestica dicitur, quando per cultum eius sapor ad delectationem et utilitatem hominum redigitur:..."

equates agriculture with medicine, comparing the farmer to the doctor. The farmer remedies the soil with fertilizer and proper care, just as the doctor remedies the human body with proper diet.[186]

> Even though nature alone is the origin of natural things, nevertheless all things, whose substances are transformable benefit much from art and cultivation [*arte et cultu*], so that they are transformed [*transmutentur*] into a better or worse [state]. Because of this consideration, therefore, we speak about fields and the cultivation [*cultu*] of them and of gardens and orchards and certain other ones, through which the cultivation of plants is made and they are taken away [*removentur*] from wildness [*silvestritate*] toward domestication [*domesticationem*]. And there are at most three things which must be considered around this: namely nutrition and ploughing or digging, sowing and grafting.[187]

Cultivating the soil involves ploughing, digging, and fertilizing. The purpose of ploughing and digging is to uncover, level, loosen, and divide the soil. If these arts are not performed, the soil is unable to accept seeds.[188] There are four types of cultivated soil: cultivated, planted, pasture, and tilled. The process of cultivation, which is described here in relation to the soil could be extended to

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[186] II, 18, 6. "Nam sicut arte medici dispotiones laudabiles acquirit venter et tunc ad laudabiles dispositiones mutat cibum et corpus, et sapiens agricola ad laudabiles dipositiones mutat agrum per cultum, quo laudabiliter disposito etiam plantae laudabiles acquirunt dispositiones."

[187] II, 13, 1. "Licet natura sola sit principium rerum naturalium, tamen in omnibus his, quorum substantiae sunt transmutabiles, multum iuvatur arte et cultu, ut in melus vel peius transmutentur. Hac igitur consideratione loquimur de agris et eorum cultu et hortis et pomariis et ceteris, per quae fit cultus plantarum et removentur a silvestritate ad domesticationem. Sunt autem maxime quattor, quae circa haec consideranda sunt: cibus videlicet et aratio sive fossio, seminatio et insitio. Circa haec student omens agricoltores praecipue."

[188] II,15.

the estate as a whole, insofar as the cultivation of nature leads to the cultured quality of the estate.

BOOK THREE: GRAINS AND OTHER CROPS

The third book is entitled "On Agricultural Fields and the Nature and Use of the Fruits which are gathered in them." It contains descriptions of twenty-one different types of crops cultivated in large fields. These include agricultural products for feeding livestock, such as oats and spelt; grains used for human nourishment, such as chick peas, wheat, beans, barley, and millet; plants with mostly medicinal uses, such as lupine and rye grass; and finally, plants used to produce other products, such as flax and hemp. In some cases Crescenzi provides different names and descriptions for what are essentially the same plant or variations on it. In some cases the distinction made between the different types is related to whether or not they are wild or domesticated. Among Crescenzi's sources for this book are Palladius, Albertus, and Avicenna, but here he also introduces another lesser-known figure, Isaac Iudaeus. Isaac's book on diet was written in Arabic in the tenth century and translated into Latin in the eleventh century. His name appears only in the sections on plant varieties and normally in conjunction with the dietetic or medicinal properties of a particular

species.[189] Crescenzi's adherence to Isaac's principles reveals the degree to which he accepted the notion that diet and medicine were closely related, a connection commonly made by medieval medical practitioners and theorists.[190]

The descriptions of individual grain types vary one from another depending on their primary function. They do generally include a consideration of where plants should be placed (especially with respect to other plant types), how they are cultivated, what type of soil they require, at what time of year the seeds should be sown, and whether or not they should be planted in furrows or some other configuration. In addition to providing advice on how they should be planted, Crescenzi also describes the appearance of the plants at various stages of growth, which may include descriptions of the seeds and the leaves. As a part of this description, he sometimes also includes information on the *complexio* of the plants, especially in the case of those with an alimentary or medicinal function. Crescenzi generally describes how the consumption of these plants affects digestion, sexual appetite, and menstruation.[191] When the plants are recommended for human consumption some advice on

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[189] Richter, LIII-LV. Richter is not able to decide conclusively whether or not Crescenzi had Isaac's original text at hand when he composed his treatise.

[190] Siraisi, 1990, pp. 120-23.

[191] III, 3, 3. In the description of the chick pea, for example, Crescenzi mentions that eating it encourages the production of sperm and eases coitus.

how to prepare them may be included. The section on grain is the most explicit in this regard, providing specific information about how to make bread and outlining its nutritional benefits.[192]

In addition to describing the value of the plants and how they should be cultivated, Crescenzi gives recommendations on how they should be stored. He begins the book, in fact, with a consideration of the threshing floor, where the grains are processed and then kept. He recommends that the threshing floor be placed in the vicinity of the villa to prevent fraud and deception on the part of the neighbors. It is important, as well, that both the threshing floor and the storage area be located in a mild area where it is neither too hot or too cold.[193]

BOOK BOUR: VITICULTURE

This book is devoted to all aspects of viticulture, including choosing a site, planting a vineyard, and harvesting the grapes, as well as recipes for making wine and other products from grapes. Much of this book is derived from Isaac Platearius and a figure called the Burgundian, but one of its distinguishing features is that in it Crescenzi frequently makes reference to the region around Bologna and

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[192] III, 6.
[193] III, 1-2.

also uses the first person more so than in the other books.[194] This would suggest that this book, more so than the others, is based on actual practical experience, which is supported by the fact that Crescenzi's estate near Bologna was a vineyard.[195]

Crescenzi makes a point of letting the reader know the *complexio* of grapes and their medicinal properties, as well as the wine or vinegar produced by them. He also describes the different varieties of grapes according to their outward appearance (leaves, vines, fruit size, color, and shape), function, taste, and region of origin. Of particular importance to vineyards, much of the book is devoted to the manner in which the grape vines can be supported, either using a system of supports, or live trees, for which he recommends certain types, such as poplars, elms, or willows.[196] The propagation of vines is also a topic Crescenzi addresses, paying special attention to the uses of grafting in creating new, stronger, and better tasting species of grapes.[197]

Fewer than half of the sections in this book are actually devoted to the propagation of the grapes themselves and most of the book is concerned with making wine. The

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[194] See, for example, IV, 13, 4, where he describes his method of staking vines, thereby creating a pergola; in IV, 7, 5 he refers to the agricultural experts of Bologna.

[195] See the discussion of Crescenzi's biography in Chapter 2.

[196] IV, 13, 7.

[197] IV, 11.

different types of wine at their various stages, Crescenzi states, can have different effects on the human body.[198] Much of this information is derived from Burgundio da Pisa's contemporary *De vindemiis*, which Crescenzi often copies verbatim.[199] The virtues of wine and vinegar are described at length at the end of the book. The benefits of wine, says Crescenzi, are not limited to the body, but apply to the soul as well, since drinking wine diminishes sadness and encourages levity.[200]

BOOK FIVE: TREES

This book consists of three main parts: the first deals with the cultivation of trees in general, the second and third describe 28 fruit bearing trees and 11 non-fruit bearing trees, respectively; they are listed in alphabetical order.[201] In the introduction, Crescenzi admits that it is difficult to talk about trees in general, but pays special attention to those things that are most harmful to trees, such as excessive wind, which can hamper the grafting process, animals who feed on trees, heat, lack of water, and

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198 IV, 24.

199 See Richter, p. XXXIV.

200 IV, 47, 2: "Et non solum sua bonitas in corpore ostenditur, sed etiam in anima. Facit enim illam oblivisci tristitiam et angustiam et dat sibi laetitiam;.."

201 The list of fruit-bearing trees includes: almond, hazel, cherry, barberry, chestnut, citrus, cornel, fig, laurel, apple, pomegranate, mulberry, medlar, myrtle, nut, olive, pear, plum, peach, date palm, pine, pepper, oak, servia, and juniper; non-fruit bearing: fir, cypress, reeds, shrub, ash, balsam, poplar, rose, willow, elder, thorn, tamarisk, and elm.

finally pests, in particular worms and ants. Among his recommendations for getting rid of worms, Crescenzi suggests that they be manually picked off the trees and destroyed.[202] The problem of worms comes up in many of the later chapters, especially in those on fruit trees, but little new information on pest control is contained in the remainder of the book, which refers readers back to the first section.

The descriptions of the individual trees follow a pattern very similar to that of those found in the book on grains and fields. They generally include some basic information about the region in which the tree is found, the type of soil it prefers, the shape of its habit, fruit (and sometimes, leaves) its *complexio*, and the medicinal and alimentary uses of its fruits and leaves. In some cases, Crescenzi also mentions how its wood is used, such as the hazel tree, which is used to make wine vats, the cypress tree, which may be used to make the bodies of musical instruments, and reeds, which are cited as good material for the houses of the poor.[203] The chapters vary greatly in length. The longest ones concern the almond, the fig, the laurel, the olive, and the rose, which encompasses both the rose bush and the rosemary plant. In general, Crescenzi avoids making references to the symbolic meanings of the trees. He does, however, say that the Cypress tree is

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[202] V, 1, 10-12.
[203] V, 3, 2: (Hazel); V.32.1 (Cypress); V.32.4 (Reeds).

appropriate in monastery gardens because it is evergreen, an allusion, no doubt, to the ubiquitous equating of evergreens and trees in general to the sacrifice and subsequent eternal life of Christ.[204]

BOOK SIX: HERBS

This book is devoted to describing the appearance and medicinal properties of over 130 different types of herbs. Before addressing the individual species Crescenzi discusses the properties of herbs, taken mostly from Albertus. This is followed by a section on how to best cultivate an herb garden, most of which is derived from Palladius. The virtue of these herbs, Crescenzi states in the introduction to the book, is to restore health to those who have fallen ill, but also to maintain the health of those having recovered from illnesses. Through human intervention, the herb garden, like Book Six itself, assembles plants which otherwise would grow in a variety of different places. Knowledge of these herbs, which are defined as simples, because they have not been mixed to create medicines, are of particular importance to rural dwellings, Crescenzi asserts, because there are not many composite medicines found in the country.[205]

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[204] For a discussion of the tree cross, see Gertrud Schiller, *Iconography of Christian Art* 2, transl. Janet Seligman (Greenwich, CT: New York Graphic Society Ltd, 1972), pp. 135-6; the association of evergreens with eternal life can also be seen in their inclusion in cemeteries, a practice that continues to the present day.

[205] VI, Preface.

The first section of this book places herbs, which might merely be defined as plants that are not trees, vines, or grains, into the context of the hierarchy of vegetal life. As compared with trees, which embody the perfection of plant life, herbaceous plants occupy the lowest position in the hierarchy because they have a simple root structure. Their simplicity relegates them to the bottom rung of the chain of plant being, but it is also one of their virtues. Being less developed makes simples more susceptible to their surroundings, while at the same time it makes them more suitable for transforming and changing bodies with which they come into contact, which is why they are used for medicinal purposes.[206]

Although Crescenzi's book on herbs could scarcely be compared to a full-fledged herbal, its breakdown of the plant descriptions is comparable to such texts as Dioscorides and Galen. Dioscorides and Galen were Greek doctors writing in the first and second centuries, respectively. Their works were translated into Latin in the fifth and sixth centuries and were the most influential herbals from antiquity.[207] Dioscorides, who was a military doctor, based his observations on actual experience gained in the field. By contrast, Galen, who was critical of Dioscorides, was an expert in anatomy and human physiology. He based his

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[206] VI, 1, 1.
[207] Singer: 34.

observations on experiments and endorsed the idea that medicine was an art.[208]

The purpose of Dioscorides' *materia medica* is primarily practical and does not use a fully standardized classification system. All in all Dioscorides mentions 500 plants, 130 of which were contained in the collection of Hippocrates.[209] The individual entries in the *materia medica* are arranged in the following manner: the name of the plant and its synonyms, a description, the origin of the plant, the preparation of the medicines derived from it, and its medical application. Although the importance of the *materia medica* began to decline in the Augustan period to be replaced by Pliny's *Natural History*, Dioscorides continued to be named as an important source for such later writers as Gargilius Martialis, Isidore of Seville, and Cassiodorus, who recommended Dioscorides to the monks at *Vivarium* in his *Instituiones*.[210] In the middle ages Dioscorides was known primarily through excerpts found in the second book of Avicenna's *Liber Canonis* and a compilation of excerpts from Dioscorides and Galen in Serapion's *Aggregator de simplicibus*.[211]

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[208] See, Kibre, pp. 215; Thorndike, Vol. II, pp. 606-7; and H. Balss, *Albertus Magnus als Biologe. Werk und Ursprung* (Stuttgart: Wissenschaftliche Verlagsgesellschaft, 1947), p. 13.
[209] Singer: 19-21.
[210] M. Wellmann, *Paulys Realenzyklopedie* V, 1, pp. 1131-1142.
[211] Reeds: 524.

Crescenzi cites Dioscorides twenty-one times, almost exclusively in the listings of grains, trees, and herbs. Galen's name appears at least five times, also in the lists of plants and their uses. Although Crescenzi was more likely than not familiar with them through compendia, these authors are significant for two reasons. First, they set the precedent for the herbalist tradition and the manner in which plants are listed and described. Secondly, their works participate in the definition of medicine as both an applied and a speculative art, a distinction that continued to be debated up until Crescenzi's time, and was specifically addressed in the *Liber Canonis* of Avicenna.[212]

BOOK SEVEN: MEADOWS AND GROVES

In the preface to Book seven Crescenzi sets up a distinction between this book and the previous ones on other parts of the estate. Unlike the fields, vineyards, orchards, and gardens, meadows and groves do not require as much labor or knowledge, since it is "as if they spring forth from nature without aid."[213] Crescenzi begins the discussion of meadows by reiterating their self-generating properties and employing a vocabulary that alludes to Genesis:

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[212] In the *Liber Canonis* Avicenna addreses the status of medicine as both an art and a practical art, pp. 25-6. See also arts chapter below.

[213] "..dicam nunc de pratis et nemoribus, quae tantam quaerunt doctrinam, sed quasi sponte proveniunt a natura.." (VII, Preface)

> Having been created by a divine hand, meadows are made by nature, so that the earth, which was first made bare, would be dressed and ornamented..[214]

The purpose of these meadows, created by "wise Nature" (*sagax natura*),[215] to whom Crescenzi refers, uncharacteristically, in personified form, is to feed animals with the great variety of plants that cover their surface.[216] Their bounty is referred to as being at hand (*praestant*), which is reminiscent of Varro's false etymology of "prata," which he traces back to *parata*, or being ready at hand.[217] While Crescenzi does not choose to incorporate this etymological evidence for the benefit of meadows, it is certainly implied in the way he attributes to fields less maintenance and work.[218] Meadows thrive best in temperate climates that tend toward a cold and humid *complexio*; their soil should be fertile if they are to produce sweet, odiferous, and fine plants. Meadows, moreover, benefit most from rainwater and should be situated in a low-lying area, although excessively marshy areas should be avoided as they do not yield good

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[214] "Prata fuerunt a natura divino mandato creata, ut terra, quae primo nuda fuit, vestiretur et ornaretur.." (VII, I,1)

[215] For a discussion of the personification of nature in the middle ages, see George Economou, *The Goddess Natura in Medieval Literature* (Cambridge: Harvard University Press, 1972).

[216] VII, 1, 1.

[217] Varro, *De rustica* I, 7, 10-12, transl. W. D. Hooper (Cambridge, MA: Harvard Unviversity Press, 1934). "..a quo antiqui prata parata appellarunt."

[218] Crescenzi also brings up the fertility and readiness of meadows in relationship to different soil types. II, 26, 7.

plant growth. Ideally, a meadow should be located near a river by which it can be regularly irrigated.[219]

Although meadows are natural creations that spring forth "wherever the sun's ray shine upon the earth,"[220] Crescenzi describes how they can be created either from fields and woods or from cultivated fields. He provides specific advice on how to generate such meadows by freeing the area of all bushes and other solid plants and refining the soil by removing all rocks and adding fertilizers. After that, the area is sown with the seeds of vetch and hay, as Palladius recommends. Cultivated fields can also be transformed into meadows over the course of years by flooding them, which fills in the ditches and levels out the area.[221]

Crescenzi then outlines a system of field use that seems akin to the three-field system, whereby a field is permitted to lie fallow for a year or is planted with alternate crops. He recommends that meadows be weeded often, especially after the rains when the soil is soft.[222] The main crop harvested from meadows is hay, which is used mostly for feeding livestock. Using information provided by Palladius, Crescenzi describes how and when the hay should be harvested

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[219] VII, 1, 2-4.
[220] VII, II, 1: "..ubicumque terra solis radiis illustratur.."
[221] VII, 2, 2-3.
[222] VII, 2, 4-6; Crescenzi also makes mention of a three field system in Book Two. For a discussion of his use this method, see Bobbioni: 125-8.

and where it should be kept, emphasizing that the better the hay, the healthier the livestock.[223]

The second half of this book is devoted to groves or forests. Crescenzi reiterates the natural springing forth of woods, groves, or forests. Once again, he uncharacteristically personifies nature, this time making reference to the mother earth, who brings forth seeds and humors that generate them.[224] Forests, he says, are created by seeds either dropped from the trees themselves or borne from far off places by birds or rivers. He especially praises Alpine forests.[225] In these mountainous regions are found forests of [*piellarum*], beech trees, oaks, and [cerrorum], while low-lying regions produce willows, poplars, alder tress, and wild cane. And then there are those other regions in which pear trees, apple trees, sorb-apple trees, elms, and ash-trees grow abundantly. The more fertile the soil, the more abundant the trees.[226]

These assortments of trees can either be freed of extraneous and useless plants and improved by the grafts described in the second book, or they can be grown in order to be cut down and collected for wood, though Crescenzi does not specify whether the wood would be used for building or fuel. A further section is devoted to creating a forest or

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[223] VII, 2, 3.
[224] VII, 4, 1.
[225] VII, 1, 4
[226] VII, 4, 2-3.

grove by means of human industry, but the advice Crescenzi provides here is a repetition, as he himself admits, of what he had already written in the book on trees.[227]

BOOK NINE: ANIMAL HUSBANDRY

In the preface to Book Nine Crescenzi states that he will now turn from plants and trees to "the animals that are kept in the country for the purpose of use and delight."[228] He continues - citing Varro, "the distinguished philosopher" - with a brief history of agriculture and animal husbandry.[229] Crescenzi emphasizes the compendious nature of this book many times in the preface, admitting that most of what he knows comes "more from the writings of the prudent ancients than from the experience of contemporaries."[230]

Crescenzi's most significant ancient source for Book Nine is Varro, who is also quoted fairly consistently throughout the rest of the treatise.[231] Two of the three parts of Varro's work are, in fact, devoted to animal husbandry. One part covers animal husbandry and its relationship to growing crops, while the other part is concerned with steading or the keeping of grazing animals and

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[227] VII, 5.
[228] IX, Preface, 1: "In hoc autem non libro dicetur de animalibus, quae propter utilitatem et delectationem nutriuntur in villis."
[229] For Varro's discussion of the history of agriculture, see *De rustica* II, 1, 4-5.
[230] Ix, Preface.3: "Dicam itaque de animalibus nutriendis, quae scire potui tam ex doctrina prudentium antiquorum quam experientia modernorum."
[231] Varro is quoted 44 times in all. See Richter, p. XXVI.

the degree to which this land-based economy is or is not a part of agricultural practice. This section includes a discussion of luxury food items, as well as aviaries, fishponds, and apiaries.

Crescenzi does not directly address the role of animal husbandry in agricultural practice, but he does preface the ninth book by tracing the history previously outlined by Varro. This history begins with animals and human beings living naturally off the plants found in uncultivated soil, followed by the period in which men began to cultivate fields, gather fruits, and plant useful trees, but also to capture animals and put them in fenced enclosures for cheese and milk, and clothing materials, such as leather and wool. They began with sheep because they were the easiest animal to keep and proceeded to tame wilder animals, brought from such locales as Phrygia, Thrace, Media, Dardania, and Spain.[232] Crescenzi follows this historical sketch of animal husbandry with a deferent attitude toward the experts to whom he leaves the task of supplementing his book learning, since "as the philosopher [i.e.. Aristotle] said, experience makes art and he is more satisfied who is connected to the knowledge of natural things."[233]

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[232] IX, Preface, 2; see also, Varro, II.1.4-5.

[233] IX, Preface, 3: "Nam ut ait philosophus, experientia facit artem, et plenius et, cui naturalis ratio est adnexa;" Aristotle makes such statements in I, 1, 4-10 of the *Metaphysics* 1, transl. Hugh Tredennick (London: William Heinemann, 1933).

The main part of Book Nine begins with the horse, since, according to Crescenzi, "among all animals the horse is esteemed more noble and greatly necessary for kings and other princes in times of war and peace."[234] What makes this book unusual, when compared with the books of grains, herbs, and trees, is that although we are dealing here again with a catalogue, Crescenzi has not chosen to use the alphabet as a means of organization. Rather, he begins with the most important animal and proceeds accordingly. Size would also seem to be an organizing principle, since the discussion of horses is followed by cattle, which are large animals, whereas the last two animals he deals with are birds and bees. Crescenzi may have chosen to arrange the animals in this way because he is culling here mostly from written sources and is taking fairly little information from his own experience. His main source, moreover, is an ancient one, so he may be following a more traditional hierarchical mode of organization, rather than the more contemporary mode of alphabetization.[235]

The fact that Crescenzi begins with the horse is also relevant in that it betrays his own aristocratic status. While there is evidence that horses were used to pull ploughs

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[234] IX, Preface, 3: "Verum quia inter cetera animalia equus censetur nobilior et magis necessarius tam regibus et aliis principibus tempore bellorum et pacis quam ecclesiarum praelatis..."

[235] See Richter, pp. LXVIII-LXX.

by the twelfth and thirteenth centuries,[236] the discussion of horses in the *Liber ruralium commodorum* treats them more as a commodity to be enjoyed by a leisured class than a labor-saving device. Crescenzi pays particular attention to the appearance of horses, describing the graceful shape of their heads and the proportional relationship of a "horse's large and long body" with its limbs.[237] Most of the sections on horses, however, deal with horse illnesses and how to cure them.[238] Unlike the introductory information on horses - how to tell their age, how an excellent horse is shaped, and how they are born, captured, tamed, and trained - the medical discussion of horse illnesses is drawn mostly from the *Liber mareschalciae*, which was written by Jordanus Ruffus, the court veterinarian of Frederick II, around 1252.[239] In the subsequent chapters on other livestock, however, Crescenzi returns to Varro and Palladius as his major sources.

Although he deals with the other animals more briefly, Crescenzi basically addresses the same issues he did with the horse: the properties of healthy and good animals, their procreation, their use, and their maladies and cures. Horses are followed by such large animals as mules, donkeys, and

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[236] For a discussion of the discovery of horse-power, see Lynn White Jr., *Medieval Technology and Social Change* (New York: Oxford University Press, 1966), pp. 57-69.

[237] IX, 7, 1: "Equus habet corpus magnum et longum, et suae longitudini et magnitudini proportionaliter omnia membra respondent."

[238] IX, 10-57.

[239] Richter, p. XXXV.

cattle, and then smaller livestock, such as sheep, lambs, goats, sows, and rabbits. Before turning to fish, fowl, and bees, Crescenzi describes an enclosure, a *locus clausus*, or *leporarium* in which to keep hares and other wild animals - Crescenzi names goats, deer, boars, and rabbits. In this enclosure, which could be considered an expanded version of a rabbit warren, there are "hiding places in bushes and plants where hares can hide during the day and trees with spread out branches, which prevent the [malevolent] swooping of eagles."[240] Such hiding places provide a safe environment for rabbits and hares to reproduce, contributing to the "utility and delight" of the *leporarium*, in which many animals can be assembled in a short period of time; animals that are then easily caught for their meat, but also for their hides, used to make clothes.[241] Crescenzi follows Varro very closely in his description of the *leporarium*, choosing to include such details as that one may sit in an elevated position and play musical instruments in order to attract the animals and create a spectacle to be enjoyed for the sake of pleasure.[242] For while the utility of a *leporarium* may be great, its function as a source of pleasure is even greater.[243]

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[240] IX, 80, 1

[241] IX, 80, 5.

[242] IX, 80, 4: "Vocatus fuit quidam, qui cum stola et cithara venit, et cum cantare iussus esset, bucina inflavit, et subito circumfluxit eum et ceteros tanta multitudo cervorum, aprorum et aliorum quadrupedum, quod valde formosum sibi apparuit spectaculum." Varro, III, 12, 4; III, 13, 1-2.

[243] IX, 80, 5: "Leporarii utilitas magna est et delectatio maxima."

Following a brief description of , Crescenzi embarks upon a discussion of the different types of birds that may be kept on an estate. These include peacocks, pheasants, geese, ducks, hens, pigeons, doves, blackbirds, partridges, and quails. Crescenzi praises the peacock, whose flesh is too tough for eating, but which serves as noble decoration for the pleasure garden. He even writes that the feathers of the male peacock can be used to makes wreaths for girls and other forms of decoration.[244] He devotes five sections to *columbaria* or dovecotes, which, as we know from Crescenzi's will, he had on his estate.[245] He describes two types of enclosures for doves, a wooden tower constructed above a wall or an opening in a wall for the birds to build their nests.[246] Crescenzi also makes recommendations on what to feed doves, how to keep them in their enclosures, and how to maintain the dovecotes themselves. He emphasizes the importance of keeping the dovecote tidy, attributing to doves rather human traits: "The place ought to be cleaned quickly and every day if it is to be decorous; for they [the doves] shall more eagerly desire to remain in a beautiful house, just as humans do."[247]

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[244] IX, 82, 6" "Utilitas ipsorum est, quod ipsorum carnes satis bonae sunt, sed ad digeredum durae. Masculorum pennae sunt pulcrae ideoque puellis pro sertis et aliis ornamentis aptae."

[245] IX, 87-91.

[246] IX, 87, 1.

[247] IX, 87, 5: "Mundetur etiam crebro ipsarum locus et undique sit decorous; nam in pulcra domo sicut et homines morantur avidius."

For his treatment of bee keeping, Crescenzi relies both on Varro and Vergil. Like thinkers and agriculturists before him, Crescenzi is drawn to the social nature of bees, comparing their organization to human society:

> Bees are not of a solitary nature like the eagle, but like men; for in them is a society of work and of buildings and also of the rationality of art.[248]

Beyond such philosophical musings on the analogies to be made between bees and humans, most of Crescenzi's discussion of bees is devoted to their dwellings, their sicknesses, and how their honey may be used. Although Crescenzi does not adopt Vergil's poetic form, much of the information on bees is taken from his *Georgics*.

Vergil composed his *Georgics* in 31 BC and he is probably the most famous and artful of the agricultural writers. The bucolic life he describes complements the pastoral ideal found in the *Eclogues*; both participated in the pious social reforms of Augustus.[249] Like Varro, Vergil begins his four-part poem by invoking the rustic gods. The first book describes tillage and soil types, the second discusses the planting of trees and vines, the third deals with the keeping of livestock and the final part extols the virtues of bee-

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[248] IX, 100, 1: "Apes non sunt solitaria natura ut aquila, sed ut homines; nam in his est societas operum et aedificorum, in his ratio atque ars." In the *rerum rusticarum* Varro goes so far as to say that men learned to toil, build, and store food from bees, see II, 16, 4-5.

[249] For a discussion of the use of bucolic and pastoral imagery in the Augustan period, see P. Zanker, *The Power of Images in the Age of Augustus* (Ann Arbor, MI: University of Michigan Press, 1988) *passim*.

keeping. While Vergil was neither a landowner nor an expert on agriculture as Cato and Varro undoubtedly were, he must have been familiar with their works, whose influence may be found throughout the poem. Although the authority of Vergil's text as a source of information on agricultural practice was questioned by the Romans themselves, because it aims to delight rather than educate its readers,[250] the *Georgics* are cited by numerous writers on agriculture. Columella and Palladius even include poetic treatments of their subjects that pay homage to Vergil. More importantly, Vergil translated farming practices into a poetic form, whereby he participated in the elevation of the agricultural ideal.

BOOK TEN: HUNTING

Over half of Crescenzi's book on hunting, whose full title reads "On the various skills for capturing wild animals," is devoted to falconry and the keeping of other birds of prey, such as hawks, merlins, and eagles. The chapters on falconry are followed by suggestions on the capture of birds, other wild animals (including elephants!), mice, and finally, fish. The implements Crescenzi recommends are nets, ropes, bows, traps, and ditches. There is some dispute as to the sources Crescenzi employed in writing this

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[250] See White, pp. 39-40 quoting Seneca, *Epistle* 86.

book. Although Crescenzi states in the first chapter that he consulted the work of *rex Dancus*, Richter questions the existence of such an authority, assuming that he is a mythical source.[251] There was, in fact, a work on falconry known in the thirteenth century, whose author was believed to be a man named King Dancus who may have been associated with the court of Sicily; it was cited by Albertus Magnus among others.[252]

In the middle ages falconry was an activity associated with the nobility, as is evident from the many representations of noblemen and women on horses bearing falcons, (fig. 7) as well as a long tradition of poems and books devoted to falconry, many of which were associated with noble courts. What distinguishes Crescenzi's treatment of falconry from more notable works, such as the *De arte venandi cum falconibus* of Emporer Frederick II of Hohenstaufen is

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[251] Richter, p. LXIX.

[252] Gunnar Tilander, transl. and ed., *Dancus Rex, Guillelmus Falconarius, Gerardus Falconarius* (Lund: Carl Bloms Boktryckeri, 1963), pp. 10-13; there is some evidence that Crescenzi may have used Dancus, particularly in the chapter on the beauty and nobility of the falcon, where he uses a descriptive vocabulary that is almost identical to that of Dancus.

Crescenzi:	Dancus:
"Pulcritudo et nobilitas falconum cognoscitur, si habet caput rotundum et summitatem capitis planam et rostrum curtum et grossum et spallas amplas, pennas alarum subtils, coxas longas, et tibias curtas et grossas, pedes lividos, sparsos et magnos;...(X,10,1).	"Quando vis cognoscere nobilitatem falchonum, aspice si habet capet rotundum in summitate eius planum, et rostrum et curtum et crossum et spatulas amplas et pennas allarum subtilles et coxias lungas et tibiam curtam et crossam, pedes lividos, spartos, et macros. (18)

This connection warrants some further philological analysis. One example of a connection may also be found when Crescenzi recommends using a candle to tame a falcon (X,11,4), a practice also cited by Dancus (16).

that Crescenzi virtually ignores the ritualistic, social, and symbolic aspects of falconry,[253] opting to focus on the appearance of the birds and the manner in which they are trained, fed, and nursed back to health. Just as was evident in the section devoted to horses, falconry was dependent upon making observations about the proportionality of the bird's body that would enable the falconer to make judgments about its health and worth.[254] His observations on falcons are fairly close to those of Albertus Magnus, which emphasize a scientific approach toward the animal itself, instead of a discussion of the sport.[255]

The book on hunting, in general, deals with rather modest hunting practices. Although Crescenzi does devote one brief chapter to hunting wild animals with dogs, and even makes reference to hunting elephants, bears, and lions, these sections obviously are not based on his own practices, but rather present what are probably practices taken from ancient sources. For capturing an elephant, for example, he recommends taking advantage of the fact that elephants do not have knees, which keeps them from being able to lie down. Therefore they must lean up against trees when they want to sleep. When a hunter comes upon a sleeping elephant, all he

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[253] Robin S. Oggins, "Falconry and Medieval Views of Nature," in *The Medieval World of Nature. A Book of Essays*, ed Joyce E. Salisly (London: Garland Publishing, 1993), p. 59.

[254] See X, 3 for the beauty and utility of the falcon.

[255] Oggins, p. 53.

has to do is partially saw through the tree, so that when the elephant awakens the tree fall down upon him.[256] Such tactics, which resort to human ingenuity instead of power and endurance, typify a type of hunting that is generally frowned upon in the more noble treatises on hunting, which posit a narrative dependent upon the chase. Hunting with nets and traps, sneaking up on animals in their lairs, as Crescenzi suggests for the fox, is more typical of hunters of the lower classes, for whom hunting is a necessity rather than a recreational sport.[257] Although Crescenzi includes hunting as an activity to be pursued by men of his standing participating in the pleasures of the countryside, the fact that he describes such small scale hunting practices points to a number of issues. Crescenzi would not have had much time or occasion to hunt.[258] It may also be possible that his position as a small landowner would have limited his hunting practices to such small catches as rabbits, mice, and fish; just as the landowner of moderate means would have a pleasure garden that differed from that of a king or wealthy lord, so too a hunter of moderate means would pursue different game.

In the preface and throughout Book ten Crescenzi downplays the killing of animals, focusing rather on how they

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[256] X, 26, 1.

[257] For a discussion of the differences between the practice of hunting in the lower social orders and the higher social orders in the middle ages, see John Cummins, *The Hound and the Hawk: The Art of Medieval Hunting* (London: Weidenfeld and Nicolson, 1988), pp. 234-248.

[258] Richter, LXIX.

may be captured. In the preface he states that because of the sin of the first parents, animals no longer obeyed, causing them to have to invent skills and arts to enable human beings to control them.[259] There appears to be some implicit criticism on Crescenzi's part of hunting as a sport of the wealthy. Whenever he refers to animals in the other sections of the treatise, in the hare warren or the pleasure garden, for example, the emphasis is upon observing them and delighting in their appearance. This tendency also underscores the Edenic quality of Crescenzi's estate, where all plants and animals are assembled and live in a harmonious order.

BOOKS ELEVEN AND TWELVE: MNEMONIC SUMMARY AND CALENDAR

Books Eleven and Twelve are best dealt with as a pair. The first provides a summary of the entire treatise because, in Crescenzi's words, "human memory is brief." Providing the reader with short summaries of the most important sections will allow the treatise to be better "held in memory."[260] In this summary, there are some books that are covered in great detail with many sections, while others, such as the book on hunting, are limited to one section. Crescenzi's inclusion

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[259] X, Preface.

[260] XI, Preface: "Sed quia memoria hominum brevis est et rerum singularium singularium turbae non sufficit, ideo utile visum est materias tractatum, quae possunt generaliter exprimi, compendiosis secundum ordinem libri concludere regulis, ut sola notitia ipsarum omnium generaliter habeatur memoria."

of a book specifically directed to compensate for the brevity of human memory is symptomatic of the changing attitude toward memory and how it was utilized. As was discussed in the previous chapter, Crescenzi was participating in the encyclopedic movement whose resorting to lexical order and such devices as tables of contents and indices has been traced back to changing practices of reading and remembering. Book Eleven performs a similar function.[261]

Book Twelve also provides a sort of summary of the entire treatise, although it does so in calendar form, rather than follow the outline of the treatise itself. The calendar, according to Crescenzi, allows the paterfamilias to plan his activities according to the time of year. If the reader needs to know more about the activities described in the calendar, moreover, Crescenzi refers him to the body of the treatise where these matters are described in more detail.[262] In organizing the content of the treatise in calendar form, Crescenzi is following the precedent set by Palladius, whose agricultural treatise is organized according to the months of the year.

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[261] For the seminal work on mnemonic devices in antiquity and the middle ages, see Frances Yates, *The Art of Memory* (London: Routledge & Kegan Paul, 1966), *passim*; for a more recent study that specifically addresses the use of mnemonic devices in medieval texts, see Carruthers, *passim*.

[262] XII, Preface.

CHAPTER 3: THE ART OF AGRICULTURE

The preceding summary of Crescenzi's treatise begins to help us to understand the scope of his definition of agriculture. His treatment, as we have seen, includes issues of health and medicine and of science and experimentation, and it encompasses raising livestock and hunting, in addition to the more obvious subjects of sowing, fertilizing, and grafting plants. A consideration of how Crescenzi defined agriculture could be limited to comparing the topics Crescenzi covers to those covered by previous writers, but this would merely scratch the surface of what it means to classify and identify an activity as an art. In order to understand the definition of *agricultura*, how it is related to the prevailing definition of art, and how Crescenzi's understanding of agriculture ties into his inclusion of a book on pleasure gardens, I will approach the issue of Crescenzi's definition of agriculture beginning with the fundamental question of how not just agriculture, but the arts in general were understood. The definition and status of agriculture as an art cannot be isolated from a fundamental understanding of what it meant (and in fact means) to refer to a branch of human activity as an *art*. One important concept tied to the arts was that they were subjected to a hierarchy. This hierarchy resulted in the classification of

the arts into those that were practiced by free men - the liberal arts, which included geometry, mathematics, astronomy, music, logic, and rhetoric - and those that were not - the mechanical arts, which variously included weaving, carpentry, agriculture, architecture, hunting, medicine, commerce, navigation, and armament. This classification, however, was not entirely consistent, whereby agriculture, for example, often occupied a space between these two groups, an ambiguity that is itself relevant to how agriculture was defined.

The history of the arts and their classification is relevant to show how the pleasure garden is both differentiated from and connected to the art of agriculture in its status as an art. The pleasure garden, I would argue, presents a rarefied form of agriculture that runs parallel to the distinction between art and craft that was emerging during the period in which Crescenzi was writing his treatise. As we shall see, the shift toward making a distinction between art and craft was related to the changing understanding of the mechanical arts. While this shift is generally limited to painting and sculpture, it is my contention that the art of agriculture, too, experienced a change in status in the form of the pleasure garden, in which agriculture experienced an aesthetic transformation. Although pleasure gardens existed in antiquity, it was not until the thirteenth and fourteenth centuries that scholars of

agriculture and the natural sciences like Crescenzi and Albertus Magnus thought of the pleasure garden in terms of an entity in its own right that was dealt with as integral to and yet separate from agriculture as a whole.

I will begin my discussion of the art of agriculture with a general introduction to the pre-modern definition of the arts as knowledge, on the one hand, and practice, on the other, followed by a consideration of the origin of the arts in nature from both a mytho-historical and a theoretical perspective. Having established a basic scheme, I will then turn to the classification of the mechanical arts, first from the ancient and then from the medieval point of view. Although most of the examples I use to illustrate the definition and classification of the arts will be oriented toward agriculture, after showing how the attitude toward the mechanical arts had changed by the thirteenth century, I will then specifically address the classification of agriculture, ranging from the theoretical definitions of philosophers to the more practical approaches of compilers of agricultural treatises.

I. WHAT IS ART?

If today, in the late twentieth century, we were to ask the question "What is art?" our first thought would probably be to turn to an art critic or an art historian, or perhaps a philosopher of art. The answer we could expect to receive to

this question would most likely involve a discussion of new media, of the function of art after the end of art, or of the role of politics and commodification in the contemporary study and production of art. It would probably not include a discussion of the art of violin making or the art of quilting, not to mention the art of medicine, the art of cooking, or the art of agriculture. It would be limited, in other words, to a discussion of what since the eighteenth century have come to be known as the Fine Arts - painting, sculpture, architecture, music, and poetry.[263] While an answer to the question "What is art?" might involve a discussion of what it means to be an artist in the late twentieth century, its emphasis would most likely be on the product, rather than on how it is made or what effect its making has on the artists or their viewers; the value of an artist's work is established by its status as fine art, in other words, as art that is displayed in galleries, museums, or the walls and halls of private homes.

Although the current definition of fine art is rooted in important changes that were taking place throughout Europe in the late middle ages and Renaissance, the question "What is art?" would have been answered very differently by Crescenzi and his contemporaries. Their definition would not have been

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[263] For the definitive discussion of the origin of the fine arts, see P.O. Kristeller, " The Modern System of the Arts," in *Renaissance Thought and the Arts* (Princeton: Princeton University Press, 1990), pp. 163-227.

limited to a discussion of sculpture and painting. They would have defined art more broadly, much as the Latin *ars* or the Greek *techne* was used by philosophers to describe all manner of rule-based human activity, which could mean poetry, the prodigious art of ruling a nation, and even the humble occupation of the shoemaker. Aristotle, for example, based much of his philosophical project on describing and classifying the arts and sciences in *The Politics*, *The Ethics,* and *The Oeconomica*, which deal with the art of ruling the nation and the household. They would have been concerned not with products as much as the process of making them.[264] The arts create objects that can either produce utility, or delight, or, ideally, both;[265] these objects may stand as exempla of art, but are not themselves referred to as art. The term, however, refers not only to the practice of an art, but also to the rules that govern it, whereby it also connotes an object of knowledge.[266]

Art, according to this model, can be defined as a rational activity with a practical rather than a speculative end that is based on a system of theoretical knowledge,

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[264] This is particularly true of Aristotle's implicit definition of art. M. J. Charlesworth, "Aristotle on Art and Nature." *Auckland University College. Philosophy Series* No. 2, Bulletin No. 50 (1957): 11-12.

[265] See Horace *Ars Poetica* 180, find cite.

[266] The wide applicability and ambiguity of the term techne, for example, is attested to by the difficulty translators of Plato have had in knowing precisely to translate it into modern usage, "craft," "art," and "ability" being only a few possibilities; see David L. Roochnik, "Socrate's Use of the Techne-Analogy." *Journal of the History of Philosophy* 24 (July 1986): 295-297.

expertise, or proficiency.[267] As an activity, art refers to the application of a set of rules to a particular situation; as an object of knowledge, it outlines the general system that underlies the rules of art that are implemented in a specific case. This division of art, which can be summarized as the particular, or applied, on the one hand, and the general, or theoretical, on the other, is analogous to the relationship between practice and theory; practice being the visible manifestation of theory, while theory demands practice to be tested and confirmed. The teachability of a rule-based theoretical system also implies an organization and conception of knowledge, which explains why the word *scientia* is sometimes used in place of *ars*.[268] This connection to *scientia*, derived from the verb *scire*, "to know", underscores the degree to which art and knowledge are bound together.[269] As objects of knowledge, the various arts are necessarily subject to a system of classification that is ultimately hierarchical, giving rise to the distinction between the liberal and the mechanical arts, for example.

The hierarchical division of the arts into the liberal and the mechanical goes back to the important distinction

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[267] A.J. Close, "Commonplace Theories of Art and Nature," *Journal of the History of Ideas* 30 (Oct-Dec 1969): 467.

[268] In the *Didascalicon*, for example, Hugh of St. Victor uses the word *scientia* in describing the mechanical arts: "Mechanica septem scientias continet:...", see *Hugonis de Sancto Victore Diascalicon: De Studio Legendi: A Critical Text*, ed. C.H. Buttimer (Washington DC: Catholic University Press), p. 38.

[269] For a discussion of the interrelatedness of *artes* and *scientias*, see Weisheipl: 54.

between the speculative and the productive arts. Although this distinction is variously labeled by philosophers in the medieval period, the speculative arts are basically those that do not arise out of a particular physical human need and whose end is not measurable in terms of a particular product. The speculative arts, moreover, are those that delve into the causes of things; their underpinnings are theoretical and they seek higher truths which nourish the soul and not the body. The highest of these is philosophy, which, according to Hugh of St. Victor, for example, seeks to discover and establish the pattern of things, wherefore philosophy underlies all of the arts.[270] The productive arts, by contrast, minister to the body and are often subdivided into arts of pleasure and arts of necessity. Unlike the speculative arts, the productive arts are not concerned with causes as much as they are with ends. While those arts associated with the speculative model generally came to be subsumed under the heading of the liberal arts, the productive arts come to be associated with the mechanical arts.

According to many ancient and medieval authors, the status of agriculture resides somewhere between the mechanical and the liberal arts. As an art that caters

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[270] Hugh of St. Victor, *The Didascalicon: On The Study of Reading*, transl. Jerome Taylor (New York: Columbia University Press, 1961), p. 51.

directly to a human physical need, agriculture would fall under the category of the mechanical arts. At the same time, it has been included among those arts that border upon the liberal by Philostratus in *The Life of Apollonius of Tyana* (172-240), for example:

> And by the liberal arts I mean poetry, music, astronomy, the art of the sophist and of the orator, the merely forensic kinds excepted, and by the arts which border upon the liberal I mean those of the painter, modeler, sculptor, navigator, agriculturist, in case the latter waits upon the seasons; for these arts are not very inferior to the liberal professions.[271]

There are many reasons why agriculture borders on the liberal arts. As will be shown below, it can be related to the special relationship of agriculture to natural processes as well as the custodial nature of running an estate. Agriculture, it could be said, has two parts: hard labor and the delegation of hard labor. The work performed by laborers would definitely be categorized as mechanical, while the leadership required to run a farm aligns with the liberal arts.

II. THE ORIGIN OF ART

Generally speaking, according to ancient and medieval thinkers, art originates in nature, but at the same time is antithetical to nature. Because of the close relationship

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[271] VIII, 7, Philostratus, *The Life of Apollonius of Tyana in Two Volumes*, transl. F.C. Conybeare (Cambridge, MA: Harvard University Press, 1912).

between art and nature, one cannot truly be defined without an understanding of the other. Defining what is meant by "nature", like defining what is meant by "art", presents great difficulties, but it is possible to arrive at some of the basic assumptions that underlie the term.[272] The word *natura*, in Latin, and *physis*, in Greek, could be used to describe the innate quality of a thing, which could be then extended to signify a sort of objective standard against which other things are measured. This could be applied to the appearance of a thing, but also to the matter of which it is composed, insofar as it effects its appearance. Nature thereby assumes a normative function against which objects of art, or culture, can be measured.[273]

Like art, nature simultaneously comprises appearances and their causes. Its function as a norm arises out of an interest in describing the form of physical things and is related to the practical definition of the arts as an activity, insofar as both are concerned with appearance. As cause, in other words in its relationship to the processes of generation, evolution and growth, nature is seen as a generative power that perpetuates and maintains the order of the cosmos. As the ground on which the cosmos is based, this

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[272] In the appendix to *Primitivism and Related Ideas in Antiquity* (Baltimore: Johns Hopkins University Press, 1935), pp. 447-456, Lovejoy and Boas provide a listing of some of the meanings of nature; these are summarized in and lay the foundation of A.J. Close's article on "Commonplace Theories of Art and Nature:" 467-488.

[273] Lovejoy and Boas, pp. 103-112.

interpretation of nature parallels the definition of art as knowledge. Just as art has both a practical and a theoretical side, nature simultaneously has cosmogenic and cosmological implications, since it is a concept that is used to describe both the appearance and origin of things in the universe.

Viewed as norm, the idea of nature also has a moral component that finds expression in the conception of a natural state in which man was presumed to live in harmony with nature. This natural state, which has been called "cultural primitivism", finds synchronic expression in those people who supposedly live simply, purely, and in equilibrium with nature. There is, however, a corresponding diachronically driven form of primitivism that has been referred to as "chronological." In chronological primitivism, the norm of living in a state of equilibrium with nature existed some time in the past.[274] For Greek and Roman writers this period was known as the Golden Age. In the medieval Christian world, however, the natural past was associated with a place, the Garden of Eden, whose existence was simultaneously temporal and spatial.[275] One of the main things

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[274] Ibid., pp. 7-8.

[275] Although paradise was generally understood metaphorically, there was also the tendency in the middle ages to think of it as an actual place that existed somewhere in the world. Paradise was often depicted on medieval maps and some explorers set out to and even thought they had discovered Eden. By placing Eden on their maps of the world, medieval cartographers revealed an important intersection between the temporal and spatial realities in the Christian belief system. Much as the church calendar enabled believers to re-enact and monumentalize the events that underlay their religious beliefs, so the belief in the geographical reality of the Garden of Eden allowed them to construe a

that distinguished these mythic states of natural harmony from the fallen state in which human beings now supposedly find themselves is the existence of the arts, particularly the mechanical arts, also known as the arts of necessity.

The origin of the arts in nature can be discussed on two levels. From the perspective of a mythic origin in time, the origin of the arts is connected to a fall from grace and a loss of innocence.[276] Such a condemnation of art extols the virtues of a primitive existence in which the invention of the arts represents a fall from grace and the primordial state of man. This pessimistic attitude toward human history and human culture is related to the Platonic conception that art is inferior to nature, insofar as the arts will only be able to produce imperfect copies of what is presumed to be the perfection of an underlying order and shape of things.[277] There is, however, a more optimistic view of art that accompanies this cultural pessimism. According to the more optimistic model of art, art implies the perfectibility of nature at the hands of human beings. Nature, in effect, needs art in order to achieve its true calling.

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spatial reality to reinforce a metaphorical construct. For a discussion of the role of Eden in medieval geography, see Jean Delumeau, *History of Paradise: The Garden of Eden in Myth and Tradition*, transl. Matthew O'Connell (New York: Continuum, 1995), pp. 39-70.

[276] Lovejoy and Boas, pp. 1-6.

[277] A.J. Close, "Philosophical Theories of Art and Nature in Classical Antiquity," *Journal of the History of Ideas* 32 (April-June 1971): 163.

THE MYTHICAL ORIGIN OF ART: THE END OF THE GOLDEN AGE

Central to the mythological beliefs of the Greeks and Romans was the existence of a time in the past when the human race lived in harmony with nature, a time when there was no need for the arts of necessity. This time, known as the Golden Age, was described by such writers as Hesiod in *The Works and Days* and Ovid in the *Metamporphoses*. Hesiod actually provides two versions of the progress of humankind from living in harmony with nature to being forced to create the arts and subsequently toil. He begins the *Works and Days* with the Prometheus myth. In this version of the fall from grace, the blame is put upon a single person, Prometheus. The fire he steals from Mount Olympus and bestows upon the human race heralds the inception of the human arts; Hesiod basically identifies fire as a laborsaving device that Zeus has hidden from the mortals.[278] Prometheus' acquisition of fire, which is initially viewed as a positive act, ultimately begets sickness and disease after Hephaestus, under the order of Zeus, creates Pandora whose curiosity releases human ills from the jar Zeus had sent to Prometheus' brother Epimetheus.[279] Although Hesiod focuses on Prometheus as the

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[278] "For the gods keep hidden from men the means of life. Else you would easily do work enough in a day to supply you for a full year even without working; soon you would put away your rudder over the smoke, and the fields worked by ox and sturdy mule would run to waste. But Zeus in the anger of his heart hid it...He hid fire." *Works and Days* 42-46, in *Hesiod: The Homeric Humns and Homerica*, transl. Hugh Evelyn-White (New York: The Macmillan Co, 1914), pp. 5-6.

[279] *Works and Days*, 60-105.

initiator of the arts, in a strange way it is Pandora's act of releasing human disease that might be considered the ultimate catalyst for the arts of necessity, insofar as they minister most directly to bodily needs.[280]

Hesiod follows the story of Prometheus and Pandora with an alternative tale of "how the gods and mortal men sprang from one source."[281] This version introduces the legend of the ages, which became the prototype for such authors as Ovid. According to the legend of the ages, the first age, or the Golden Age, represented the perfect harmony of human beings with both the gods and nature. In Hesiod, the Golden Age meant a life of luxury and perpetual peace, in which the earth provided for mortals and labor and sadness were unknown.[282] The Golden Age ended and was followed by the Silver Age, but unlike later versions of the legend of the ages, the denizens of the Silver Age were not direct descendants of the previous race; they merely appeared, newly created, "after the earth had covered this generation [i.e. the generation of the Golden Age]."[283]

Ovid's rendition of the Golden Age probably had the most historical influence.[284] Ovid simplifies the legend by only

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[280] See below in the discusson of the relationship of medicine to agriculture.
[281] *Works and Days*, 109.
[282] Ibid., 110-120.
[283] *Works and Days*, 121. For a discussion of Hesiod's legend of the ages, see Lovejoy and Boas, pp. 25-31.
[284] See Lovejoy and Boas, p. 49.

briefly mentioning the intervening ages between the Golden Age and the Iron Age, thereby creating a continuity between them. Ovid's characterization of the Golden Age is well known, but it bears repeating here in the context of a discussion of agriculture and the arts:

> Golden was that first age, which, with no one to compel, without a law, of its own will, kept faith and did right…Not yet had the pine-tree, felled on its native mountains, descended thence into the watery plain to visit other lands; men knew no shores except their own. Not yet were cities begirt with steep moats;…There was no need at all of armed men…The earth herself without compulsion, untouched by hoe or plowshare, of herself gave all things needful. And men, content with food which came with no one's seeking, gathered the arbute fruit, strawberries from the mountain-sides, cornel cherries, berries hanging thick upon the prickly bramble, and acorns fallen from the spreading tree of Jove. Then spring was everlasting, and gentler zephyrs with warm breath played with the flower that sprang unplanted. Anon the earth, untilled brought forth her stores of grain, and the fields, though unfallowed, grew white with the heavy bearded wheat. Streams of milk and streams of sweet nectar flowed, and yellow honey was distilled from the verdant oak.[285]

In the Golden Age Ovid describes there was no need for art of any kind, not the art of ruling a nation, the art of navigation and trade, the art of war, the art of architecture, nor the art of agriculture. Not so in the "age of hard iron" when "modesty and truth and faith fled the earth, and in their place came tricks and plots and snares, violence and the cursed love of gain."[286]

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[285] Ovid, *Metamorphoses* I, 89-112, in *Ovid* 3, *Metamorphoses* 1, transl. Frank J. Miller (Cambridge, MA: Harvard University Press, 1916).
[286] Ibid., 1, 129-131.

Accompanying the advent of moral turpitude, men exploited the earth by means of the arts that had been unnecessary in the Golden Age.

> Men now spread sails to the winds…and keels of pine which long had stood upon the mountainsides, now leaped insolently over unknown waves. And the ground, which had hitherto been a common possession like the sunlight and the air, the careful surveyor now marked out with a long-drawn boundary line. Not only did men demand of the bounteous fields the crops and sustenance they owed, but they delved as well into the very bowels of the earth…Men lived on plunder.[287]

Ovid's characterization of the age in which the arts of navigation, surveying, agriculture, and mining were invented is negative. He equates the practice of these arts with the defilement of the earth. Surveying is a particularly pernicious art in that it allows land to parceled out, to be bought and sold. Agriculture in effect demands the art of surveying, since without it and the concept of land ownership the labor expended on tilling the soil could not be owned.

THE MYTHICAL ORIGIN OF ART: THE EXPULSION FROM THE GARDEN OF EDEN

Although the Golden Age of antiquity is sometimes associated with particular places, Eden, the Judeo-Christian equivalent has both a temporal and a spatial reality.[288] In addition to being one of the main paradigms for the medieval

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[287] Ibid., 1.131-144.

[288] Although the history of conceptions of the Garden of Eden is beyond the scope of this study, its connection to a particular place ultimately led Christian thinkers and historians to attempt to locate Eden and associate it with a particular place. See Delumeau, *The History of Paradise*, passim.

garden, the Garden of Eden plays a role in the Christian conception of art and its invention. Just as the happy souls who resided in the Golden Age of Ovid were able to live off the land without tilling it, so Adam and Eve were free to partake of the Garden of Eden. After they ate from the tree of knowledge, they became aware of their nakedness and lost access to Eden and its bounty. Robbed of sustenance and needing shelter and clothing, the arts needed to be invented and human beings were condemned to a life of labor.[289] One need only think of medieval representations of Adam and Eve's expulsion, Adam with his hoe and Eve with her spindle, to be reminded of the association of the end of the Golden Age with the beginning of work as a way of life. Thus the expulsion had a dual result. It made possible and necessary the invention of art, an outlet for human ingenuity and inventiveness. At the same time, it required human beings to labor, which is the obverse of human creativity, since the act of laboring itself in many ways stands in opposition to the contemplative state required for invention. This dual effect of the Fall in many ways necessitated a division of the arts into the mechanical, for those who labor and are not able to reflect upon causes, and the liberal, for those who have the luxury to engage in the contemplation of causes. It seems appropriate that the garden becomes the setting for the

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[289] Lovejoy and Boas, p. 236.

leisured contemplation required for the liberal arts, although the garden itself is dependant upon the labor of those versed in the mechanical arts. In the introduction to the book on hunting, Crescenzi makes reference to the relationship of the expulsion to the invention of art. He writes that the "sin of the first parents" caused animals to disobey, necessitating the invention of hunting.[290] When living in ideal harmony with nature, art is not necessary, and as a consequence art was oftentimes thought of in negative terms insofar as it arose out of a need resulting from temptation.[291]

THEORETICAL ORIGIN OF ART IN NATURE

Although a pessimistic attitude toward the arts and technology is a hallmark of much ancient and medieval thought, art was associated with another, more optimistic view of human industry and its products. In his *De natura deorum*, for example, Cicero praises the products of human industry or, more specifically, of the power of the human hand. Of agriculture he writes:

> Likewise the entire command of the commodities [*commodorum*] produced on land is vested in mankind. We enjoy the fruits of the plains and of the mountains, the rivers and the lakes are ours, we sow corn, we plant trees, we fertilize the soil by irrigation, we confine the rivers and straighten or divert their

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[290] X, Preface: "…peccatum primi parentis…"

[291] For a discussion of this concept in the Old Testament, see Lovejoy and Boas, pp. 185-189.

> courses. In fine, by means of our hands we essay to create as it were a second nature [*alteram naturam*] in the natural world [*in rerum naturam*].[292]

Cicero introduced an optimistic theory of the arts that would later be borrowed by St. Augustine, among others, whereby agriculture, along with the related arts of necessity, such as navigation, hunting, animal husbandry, cooking, mining, and architecture, bring about what comes to be known as a second nature, which represents an improvement upon nature herself. Cicero's attitude stands in marked contrast to Ovid, who describes the arts as instruments of rape and pillage. While Cicero celebrates the effects of human intervention in the natural landscape, he does not lose sight of the fact that the world of nature remains and that it is to nature herself that the products of the human world are indebted.

This reciprocity between art and nature is reflected in common assumptions about the relationship between art and nature. In order to arrive at a theoretical definition of the art of agriculture, it is necessary to understand how agriculture and medicine, to which it is closely related in Classical and medieval definitions of art, illuminate the interaction between art and nature. In many ways agriculture is the quintessential art, whose properties, functions, and interaction with nature could be used to describe any of the other arts in a very tangible manner. This tangibility arises

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[292] Cicero, *De natura deorum*, II, 152, (Cambridge, MA: Harvard University Press, 1951).

first of all because of the obvious manner in which agriculture uses nature, is based on direct observation of it, imitates nature's processes and uses its materials to ultimately perfect, minister, or complement nature. Agriculture is the foremost art, moreover, in restoring man's prelapsarian equilibrium with nature. The theory that art perfects, ministers, or complements nature posits a teleological connection between art and nature.[293] In the *Physics*, for example, Aristotle discusses both art and nature as processes directed toward an end.[294] The assumption that art perfects nature is particularly important for the practices of medicine and agriculture, and also underlies the writing of rule books and treatises that teach man how best to improve upon what nature has provided. Crescenzi's treatise certainly assumes the perfectibility of nature by means of art, a notion already present in Plotinus' *Enneads* (third century):

> As for the arts: ...there are again those - medicine, farming, and other serviceable pursuits - which deal helpfully with natural products, seeking to bring them to natural efficiency;[295]

The related ideas that art imitates and is based on an experience of nature presuppose firstly that all human arts are modeled on natural functions, and that nature is a

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[293] Close, 1969: 472-74.

[294] *Physics*, II, 8 (199A 15), in *Aristotle: The Physics* I, transl. F.M. Cornford (Cambridge, MA: Harvard University Press, 1929).

[295] Plotinus, *The Enneads*, transl. Stephen McKenna (London: Faber and Faber Limited, 1956), p. 314.

causative power that guides man to invent and develop the arts.[296] Thus agriculture, according to Xenophon,

> …is an art so kind and gentle towards mankind, that she readily makes those who can see and hear skillful in her pursuits. She herself…gives us many instructions on how to attend on her with most success. The vine, for example, running up trees whenever it has a tree near it, teaches us how to support it…by spreading out its leaves, while its branches are yet tender, instructs us to cover whatever is at that season exposed to the sun; by shedding its leaves when it is time for the grapes to become sweet by the sun's influence, shows us how to strip it, and promote the ripening of fruit...[297]

Here Xenophon demonstrates how nature teaches that grapes should be staked and trellised, vines should be protected from sun, and finally, that vines should be pruned to promote abundant fruit. In order for art to imitate nature, nature must first be understood, and such an understanding can only be achieved through direct experience.

Because art uses nature's materials it is said to begin in nature. Nature provides the materials from which art may be produced, but nature also equips human beings with the faculties to transmute her materials into art. This transformation may be achieved through aesthetic imitation – a category that includes the representational arts, but also provides the basis for law and government, insofar as these are presumed to be based in a natural order. Art also cooperates with nature's biological processes in order to

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[296] Close, 1969: 469-472; 474-475.

[297] Xenophon, *Oeconomicus* 19, 17-19, in *Xenophon's Minor Works*, transl. Rev. J. S. Watson (London: Henry G. Bohn, 1857).

achieve its ends, a relationship that is of particular relevance to medicine and agriculture.[298]

As a creative, generative power, nature is often viewed as an artist herself, defining her role as the executor of a divine plan. Nature creates, but she is only ever at the service of a higher being. Thus *Natura artifex* is in many ways analogous to the human artist, insofar as both are handmaidens or vicars of a force outside themselves.[299] This idea of nature as a creator appears only seldom in Crescenzi's treatise, but we do find mention of nature personified in his discussion of meadows and groves, which have the special feature of being more perfect in their natural state than when created by human hands. In sum, what these commonplaces all point to is the fact that there is really no break of continuity between art and nature. Art is fertilized by nature, and nature requires art to be understood and perfected. Art and Nature, moreover, have parallel purposes insofar as both presume an end and may be used by man for practical purposes.

III. THE ANCIENT CLASSIFICATION OF THE ARTS

Greek and Roman classifications of the arts tended to be based on one of the following approaches: the aim of the arts, the relationship between art and reality, the physical

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[298] Close, 1969: 477-8; Aristotle, *Physics* II, 8 (199A 15-20).
[299] Close: 480.

effort an art requires, the products of the arts, the values of the arts, and the spirituality of the arts.[300]

THE AIM OF ART

The aim of art was of particular concern to the Sophists, who made a distinction between arts that were cultivated for utility and those with pleasurable ends, in other words, whether or not they were a necessity for life or a form of entertainment.[301] Such a scheme of classification included agriculture among the utilitarian arts, while the arts of pleasure referred to theater and dancing. Writing in the Sophist tradition, Plutarch also distinguished between arts of utility and pleasure, but he added to the arts of perfection those of mathematics and astronomy, which also have their pleasurable aspects.[302] The arts of perfection are closely related to that class of arts that later comes to be associated with the liberal arts. The distinction between

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[300] W. Tatarkiewicz, "Classification of the Arts in Antiquity," *The Journal of the History of Ideas* 24 (1963): 231-240; and "Classification of the Arts," in *The Dictionary of the History of Ideas* 1 (New York: Charles Scribner & Sons, 1973), pp. 456-462.

[301] In the *Panegyricus* 40 Isocrates praises Hellas for inventing "the arts…, both those which are useful in producing the necessities of life and those which have been devised to give us pleasure…" in *Isocrates* I, transl. George Norlin (Cambridge, MA: Harvard University Press, 1954).

[302] Plutarch addresses the spell of pleasure cast by mathematics and astronomy in, *A Pleasant Life Impossible*, 11, in *Plutarch's Moralia* 14, transl. B. Einarson and P. de Lacey (Cambridge, Ma: Harvard University Press, 1967); for his discussion of the arts of entertainment, see *Table Talk* 7.5, 7 and 8, in *Plutarch's Moralia* 9, transl. E. Minar, F.H. Sandbach, and W.C. Helmbold (Cambridge, MA: Harvard University Press, 1961).

arts of pleasure and utility is obscured in the sense that both are located within the class of the mechanical arts.

ART AND REALITY

The next issue addressed in Greek and Roman classifications of the arts is the relationship they presume between art and reality. Plato is well known for having dealt with art based on the distinction between arts of imitation, such as painting and poetry that imitate real things, the productive arts, such as agriculture and ship-building that create new things, and the acquisitive arts, such as hunting, fishing, and acquiring knowledge that make use of already existing things.[303] Of these, Plato was most skeptical of the arts of imitation, because of their potentially deceitful and manipulative character and also because of their entirely distant remove from the ideal forms of truth existing beyond this world. Although Plato was concerned enough with the mechanical arts to classify them according to these categories, they are completely absent from his general understanding of knowledge, which is concerned mostly with such speculative arts as mathematics, physics, or

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[303] *Sophist* 219A: There is a further class of arts, the contributory arts, which Plato subsumes under the heading of the productive arts. These arts produce the tools which the productive arts require in order to transform raw matter. The contributory arts include those that make vessels, modes of transportation, defenses and coverings of all sorts (walls and weaving), diversions such as visual arts, poetry, and music, nourishments, such as farming. Finally, he includes such activities as mining and lumbering, wherein the acquisition of raw materials is central.

dialectics, all of which reemerge in the middle ages under the classification of the liberal arts. And yet there run throughout Plato's writings references to the crafts as exemplars for his moral or speculative thinking. Even though he was using the mechanical arts in some ways purely for the sake of their applicability to what he considered more pertinent issues, Plato did have an extensive knowledge of them. He both marginalizes, and brings them to the forefront.[304]

ART AND NATURE

Although Aristotle retained Plato's main distinction between the imitative and productive arts,[305] he integrated crafts, or the productive arts, into his classification of knowledge, setting forth a framework whose flexibility would allow later thinkers to expand upon his scheme and create new categories within it.[306] The relationship between the theoretical and productive Aristotle posited was not as hierarchical as Plato's; the different branches of art were viewed on a horizontal rather than a vertical axis, side by

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[304] For Plato's use of craft as a metaphor for philosophical concepts, see Robert S. Brumbaugh, "Plato's Relation to the Arts and Crafts," in *Facets of Plato's Philosophy*, ed. W.H. Werkmeister (Amsterdam: Van Gorcum, 1976), pp. 40-52; see also Roochink: 295-310.

[305] Since his discussion is really limited to the development of the fine art notion separated from craft, Tatarkiewicz seriously downplays the very important distinctions between the Platonic and Aristotelian views of art. See, "Classification of the Arts in Antiquity": 233.

[306] Elspeth Whitney, *Paradise Restored: the Mechanical Arts from Antiquity through the Thirteenth Century* (Philadelphia: American Philosophical Society, 1990), pp. 34-5.

side, rather than above and below.[307] One of the most significant ways in which Aristotle incorporates art into his classification of knowledge is the analogy he makes between art and nature.

> Indeed, as a general proposition, the arts either, on the basis of Nature, carry things further than Nature can, or they imitate nature. If, then, natural processes are purposeful, so are natural processes too; for the relation of antecedent to consequent is identical in art and nature.[308]

Thus art does not so much imitate nature as its processes run parallel, and so art actually completes nature. Aristotle especially considered agriculture a natural occupation, since it simultaneously imitates nature and perfects it.

> It [agriculture] is also a natural occupation; since by Nature's appointment all creatures receive sustenance from their mother, and mankind like the rest from their common mother the earth.[309]

Aristotle's attitude toward the arts played a decisive role in shaping the medieval definition of the productive arts, which came to be known as the mechanical, especially insofar as Aristotle's more positive attitude toward the arts is reflected in the elevation of the mechanical arts.[310]

PHYSICAL EFFORT

Also of concern to ancient thinkers was the physical effort exerted in the practice of an art and its long-term

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307 See Ovitt, pp. 108-111.
308 *Physics* II, 8 (199a 15).
309 *Oeconomica*, I, 2, 2-3 in *Metaphysics* 2.
310 Whitney, p. 35.

effect on the practitioner. This concern was based on the fact that the practice of certain arts requires more physical effort than others and that the amount of labor exerted in the practice of a particular art was directly related to the status of the practitioner. Although the issue of physical effort was first made explicit by Roman authors, it was rooted in the aristocratic social structure of ancient Greece, wherein mental activities were considered superior to physical ones. Although Galen is generally credited with definitively outlining a hierarchy of labor, the distinction between the mental labor associated with the liberal arts and the physical labor attributed to the mechanical arts is evident throughout the literature.[311]

The effect of excessive physical labor on the mind is often made explicit in texts on education. In the *Politics*, for example, Aristotle cautions against teaching young men all of the "useful arts" for fear that they might thereby be rendered "vulgar."

> It is therefore not difficult to see that the young must be taught those useful arts that are indispensable and necessary; but it is clear that they should not be taught all the useful arts, those pursuits that are liberal being kept distinct from those that are illiberal, and that they must participate in such among the useful arts as will not render the person who participates in them vulgar. A task and also an art or a science must be deemed vulgar if it renders the body or soul or mind of free men useless for the employments and actions of virtue. Hence we entitle vulgar all

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[311] For a discussion of Galen's contribution, see Tatarkiewicz, 1963: 233-4.

> such arts as deteriorate the condition of the body, and also the industries that earn wages; for they make the mind preoccupied and degraded.[312]

In this section of the *Politics*, Aristotle refers to hard and continuous labor, which is disadvantageous to the examined life of free men. He also distinguishes, however, between manual laborers and master craftsmen, since the latter must understand the principles behind their craft, while the former practice it without having the luxury to reflect on its causes.[313]

Although Cicero praises the mechanical arts in the *De natura deorum*, his *De officiis* contains passages that harbor a more negative attitude toward the mechanical arts. He extends the consideration of the difference between the liberal and the mechanical arts to account also for those professions that incur ill will, such as tax gatherers and usurers. Hired workmen, too, are scorned for they lack skill, their wage is merely a remuneration for what amounts to slave labor. Even craftsmen, those presumably having skills, are not freed from Cicero's derision. "And all mechanics are engaged in vulgar trades; for no workshop can have anything liberal about it."[314] Before going on to describe the professions he does consider to be worthy of free men - medicine, architecture, teaching, grand scale

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[312] *Politics* VIII, ii, 1- c, transl. H. Rackham, (Cambridge, MA: Harvard University Press, 1932).
[313] *Metaphysics* 1, I, i, 11-12.
[314] *De officiis*, I, 42, 150.

trade, and agriculture - he deals a final blow to those trades that cater to sensual pleasures, such as fishmongers, butchers, cook, poulterers and fishermen, to which he adds perfumers and dancers. What distinguishes the trades Cicero vilifies from those he praises is the degree of intelligence supposedly required in their practice, or their benefit to society.[315]

ART AS PRODUCT

To view the arts in terms of the product involves understanding an art in terms of what remains after the process of making has taken place. The Roman orator and rhetorician Quintilian devised a scheme according to which the arts were divided into the theoretical, the practical, and the productive. As an example of a theoretical art, Quintilian provided astronomy, because it consists of the study, knowledge, and appreciation of things and requires no physical activity on the part of the practitioner. The practical arts, by contrast, are those concerned with an action that is performed for its own sake wherein nothing remains, such as dance. The productive arts, finally, create products that remain after the artist has completed his action, such as painting.[316] Quintilian goes on to classify

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[315] Ibid.

[316] "Some arts, however, are based on examination, that is to say on the knowledge and proper appreciation of things, as for instance astronomy, which demands no action but is content to understand the

rhetoric, the focus of his text, as a productive art that must be enacted, as such it involves both the theoretical foundation and the practical application of the art. Although Quintilian is discussing rhetoric, his tripartite scheme is one that is later adapted to other arts, such as Crescenzi's art of agriculture. Insofar as agriculture requires a knowledge of natural processes that are observed, these observations must then be applied to the soil and the harvest, which, quite literally, yields produce.

THE SOCIAL VALUE OF ART

Following the social hierarchy implicit in the designation of arts as vulgar or liberal, the arts were often classified according to their supposed social value; this social value, in fact, was often directly related to the amount of physical effort exerted. A good example of this sort of a classification scheme is found in Cicero's *De oratore*, where he divided up the arts into major, mean, and minor categories. The major arts were the arts of ruling,

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subject of its study: such arts are called theoretical. Others again are concerned with action: this is their end, which is realized in action, so that, that action once performed. nothing more remains to do: these arts we style practical, and dancing will provide us with an example. Thirdly there are others which consist in producing a certain result and achieve their purpose in the completion of a visible task: such we style productive, and painting may be quoted as an illustration. In view of these facts we must come to the conclusion that, in the main, rhetoric is concerned with action; for in action it accomplishes that which is its duty to do." Quinitilian, *Institutio oratoria* II, 18, 1, in *The Institutio Oratoria of Quinitilian* 1, transl. H.E. Butler (Cambride, MA: Harvard University Press, 1920).

such as politics and waging war; the mean arts were intellectual pursuits, or the sciences, which would have included the liberal arts; and the minor arts encompassed all the rest, in other words the mechanical arts.[317] The social values according to which the arts are categorized in this scheme are too obvious to deserve mention, but they also explain why the art of agriculture in many ways occupies a more elevated position than one might expect. This is so because the art of running an estate is comparable to the art of ruling a nation. The role of the agriculturist is not to labor physically, but rather to lead his slaves and workers in the efficient running of his estate. There is an important distinction made between toiling and working the soil and orchestrating the toil of others. This distinction was also made by Aristotle in the *Politics*, when he writes that:

> ... property and riches comprise many divisions, hence first of all husbandry is a division of the household art, or is it a different kind of science? and so in general of the superintendence and acquisition of articles of food.[318]

The practice of agriculture as it is described in the treatises, moreover, extends beyond the actual physical labor required to work the land, to encompass the running of a household, which is why agriculture is discussed by Xenophon

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[317] See *De Oratore* 3, 7, 26; and Tatarkiewicz, 1963: 236.
[318] *Politics* 1.3.2.

and Aristotle in their *Oeconomica*. Insofar as running a household is comparable to ruling a nation, agriculture, in an extended sense, is connected to statecraft, not fieldwork. Xenophon states that the earth "kindly teaches men justice" and "instructs men to assist one another," whereby agriculture literally becomes a model for ruling the nation.[319]

THE SPIRITUAL VALUE OF ART

Yet another blatantly hierarchical classification of the arts is found in Plotinus' *Enneads*. Unlike the social classifications found in those that focus on labor and social value, however, Plotinus' categories highlight the spiritual value of the arts in terms of their proximity to or distance from nature. The philosopher establishes five categories: the arts that produce physical objects (architecture), the arts that help nature (medicine and agriculture), the arts that imitate nature (painting), the arts that embellish human action (rhetoric), and the purely intellectual arts (geometry).[320] Some of the categories in this scheme are familiar from the classification system described above, but the difference here is that Plotinus proposes a hierarchy that is parallel to his vertically oriented hierarchy of being, according to which the physical presence of the things

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[319] *Oeconomicus*, V, 12, 14.
[320] *Enneads*, I, 9, 11.

of the earth is subordinate to the intellectual existence of the celestial realm. The arts, therefore, are judged according to the degree to which they owe their existence to nature.

For Plato nature and the human artistic products that are based in it will never be able to approach, much less surpass, the divine forms of things; nature and art can never be more than copies of ideal forms that exist outside of the realm of intelligibility. Relatively speaking, however, nature is more perfect than art; as a creative force it is by definition closer to the divine than man's ever imperfect attempts at imitation. For Aristotle, however, nature is at the service of man, and insofar as he is a mutable being, man may shape the external world and thereby transform himself. Art not only imitates nature but actually improves upon its deficiencies. The ideal unattainable forms of Plato have their counterparts in the earthly forms wrought by man; for Aristotle imitation and perfectibility are made possible through the powers of observation and invention. It is the Neoplatonists who effect a synthesis between these two opposing viewpoints. In their view man is indeed mutable and perfectible; the ultimate perfection that presumes an encounter with Plato's ideal forms, however, may only be achieved by transcending this world. Such vertical ascent represents a paradoxical attitude toward nature insofar as it

requires a submersion into the things of this world in order to eventually transcend them.[321]

IV. MEDIEVAL CLASSIFICATIONS OF THE ARTS

Although Greek and Roman thinkers were concerned with the definition and classification of the arts, they never developed a coherent theory or a systematic classification scheme. Such authors as Cicero, as we have seen, would make contradictory remarks from one text to another. This approach to the arts continued through the early middle ages, but by the twelfth century scholastic thinkers had begun incorporating the arts not only into a self-contained system, but also into a general system of knowledge, prompting a thinker like John of Salisbury to write:

> They [the branches of learning included in the Trivium and Quadrivium] are called "arts" [either] because they delimit [*artant*] by rules and precepts; or from virtue, in Greek known as *ares*, which strengthens minds to apprehend the ways of wisdom; or from reason, called *arso* by the Greeks which the arts nourish and cause to grow.[322]

The standardization of the classification of the arts was accompanied by an elevation of the status of the mechanical arts, which came to be accepted as viable objects of knowledge. Many scholars have debated the reason for this shift.[323] Some attribute it to economic factors and a re-

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[321] See Close, 1971: 180-4.

[322] John of Salisbury, *The Metalogicon of John of Salisbury,* transl. Daniel D. McGarry (Gloucester, MA: Peter Smith, 1971), pp. 36-7.

[323] For a good review of the literature, see the first chapter of Whitney, pp. 1-21.

evaluation of craft in the wake of wage labor.[324] Others have approached the issue from the point of view of intellectual history, arguing on the one side that the elevation of the mechanical arts was rooted in Christianity.[325] On the other side, it has been asserted that an appreciation of the mechanical arts, whose products minister to the external needs of the human body, was fueled by an increasing interest in natural history and the outward appearances of things.[326]

CHRISTIAN JUSTIFICATION

Evidence of a changing attitude toward the mechanical arts can be seen in the conception of God as a master builder or craftsman.[327] In the *Bible Moralisee*, for example, God is depicted wielding a huge compass with which he delineates the limits of the cosmos. (fig. 8) In general, it could be argued that the medieval attitude toward art follows more closely the optimistic view that art perfects nature. The Christian notion of progress in the arts is most fully expressed in St.

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[324] Some scholars have argued that the classification of the mechanical arts actually contributed to the further marginalization of labor from certain classes. As monasteries became wealthier, for example, the monks no longer were needed to work the land; their labor became more mental than physical. The monks were replaced with "silent laborers."(see Ovitt, Chapters 5 and 6, pp. 137-204) One scholar has claimed that the scholastic thinkers exploited the idea of the mechanical arts and mined them for metaphors related to more elevated ideas, actually causing a further degree of alienation from labor itself. (See, G.H. Allard and S. Lusignan, *Les Arts Mecaniques au moyen age* [Montreal: J. Vrin, 1982], p. 19.)

[325] See Lynn White, Jr., *Medieval Technology and Social Change* (New York: Oxford University Press, 1966).

[326] See Whitney, p. 6.

[327] See Ovitt, p. 59.

Augustine's encomium on the arts from his *De civitas dei*. Augustine's attitude toward the arts was informed by Cicero's treatment of the subject in the *De natura deorum*. For Augustine, the mechanical arts, like theology, are intended to restore human beings to their pre-lapsarian state.[328]

> What marvelous, stupendous results has human industry achieved in the production of clothing and buildings! What progress in agriculture and in navigation! What imagination and elaboration it has employed in producing all kinds of vases, and also in the varieties of statues and paintings! How marvelous in theaters, to those who sit as spectators, how incredible to those who merely hear the report are the compositions and performances contrived by men! What great inventions for capturing, killing and taming irrational animals! Against even human beings all the many kinds of poison, weapons, engines of war! And how many drugs and remedies it has discovered to preserve and restore men's health! How many seasonings and appetizers it has found to increase the pleasure of eating! What a number, what variety of signs for conveying thought and persuading men, among which words and letters are most important! What ornaments of speech to delight the mind, what abundance of all kinds of poetry! What musical instruments, what modes of song have been devised to soothe the ears! What skill in measuring and reckoning! With what acuteness have the courses and laws of the heavenly bodies been grasped! With what enormous knowledge of worldly things have men filled their minds! Who could describe this, especially if we wished not to gather everything in one pile, but to dwell on each several topic?[329]

In this passage Augustine manages to mention directly or allude to weaving, architecture, agriculture, navigation, sculpture, painting, theater, hunting, armament, medicine, cooking, logic, dialectic, rhetoric, poetry, music,

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[328] See Whitney, pp. 81-2.

[329] *De civitas dei*, 22, in *The City of God in Seven Volumes*, transl. William H. Green (Cambridge, MA: Harvard University Press, 1972).

mathematics, and astronomy. He covers the range of arts that fall into both the categories of the liberal and the mechanical. It is telling, moreover, that he begins with the mechanical arts rather than the liberal ones.

One of the main proponents of viewing the arts as helping on the road to salvation was Hugh of St. Victor who imbedded his classification of the mechanical arts in a treatise on reading and learning called the *Didascalicon*. According to Hugh, the mechanical arts comprised one of the four major divisions of philosophy, the other three being theoretical knowledge, practical knowledge, and logic.[330] In his discussion of mechanical knowledge, he devised a scheme of classification for the mechanical arts that paralleled the traditional scheme for the seven liberal arts. While Hugh's classification scheme has been credited with securing for the mechanical arts their rightful place among the objects of knowledge, upon closer inspection, his text contains an ambivalence that reveals a negative attitude toward labor and craft that medieval philosophers and thinkers had inherited from antiquity.

Hugh begins by citing the seven *mechanica*, which he refers to as *scientias* not *artes*. He establishes the relationship between the liberal and mechanical arts by comparing the first three *scientias* (fabric making, armament,

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[330] See Whitney, pp. 83-4.

and commerce) to the *trivium* (rhetoric, logic, and dialectic) and the final four (agriculture, hunting, medicine, and theatrics) to the *quadrivium* (geometry, music, arithmetic, and astronomy). He justifies this comparison by stating that the first three mechanical arts, like the trivium, minister to the external needs and protection of the body, while the last four, like the quadrivium, are concerned with internal nourishment.[331] Traditionally, the *trivium* was considered to encompass the less serious of the liberal arts; the word "trivial," in fact, is derived from *trivium*. The *quadrivium*, by contrast, encompassed those arts that sought higher truths and dealt in a more abstract realm. Even the liberal arts were subjected to a hierarchy and this was applied to the mechanical arts. By extension, therefore, it could be argued that agriculture, medicine, hunting, and theatrics were ranked higher than the other mechanical arts. After pointing out this correspondence, Hugh cites Martianus Cappella's *Marriage of Mercury and Philology*. He claims, wrongly, that the mechanical sciences were received by Mercury as a dowry from Philology. In the original text, however, Martianus had purposely excluded the mechanical arts from Philology's dowry, giving him only the seven liberal arts. Hugh's version of the story was derived from John Scotus of Eriguena's ninth century commentary on *The Marriage of*

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[331] *Didascalicon*, II, 20.

Mercury and Philology in which he states that Mercury's betrothed had bequeathed him the seven mechanical arts.[332]

Having apparently elevated the status of the mechanical arts by comparing them to the liberal arts and re-writing Martianus' allegory, Hugh goes on to undercut this apparent elevation. Engaging the false Greek etymology that connects μυχαυη (*muche*) meaning tool, machine, or skill with μοιχοζ (*moico*) meaning adulterate, impure, insincere, or untrue,[333] he dubs the mechanical arts adulterate because they are products of artifice and are subordinate to nature. Implicit in Hugh's definition of the mechanical arts as "adulterate" is the notion that they are "servile." This becomes evident when he contrasts them to the "liberal" arts, which have the distinction of being practiced by free and noble men pursuing the causes of things, not their manufacture, a task that would have been left to people [*plebei*] who were not free [*ignobilium filii*]. Thus although Hugh elevates the mechanical arts in the abstract, as branches of learning, this elevation does not extend to the people who practice them. This classification, Hugh continues, goes back to the ancients [*priscorum*] who set forth the rules and precepts

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[332] See, Whitney, pp. 70-71. John Scotus' contribution to the history of the mechanical arts is significant insofar as he was the first to use the term in the plural, thereby creating a sense that there was indeed a category or a group.

[333] See Peter Sternagel, *Die artes mechanicae im Mittelalter. Begriffs und Bedeutungsgeschichte bis zum Ende des 13. Jahrhunderts* (Kallmünz: Verlag Michael Lassleben, 1966), p. 13; see also Whitney, p. 84-5.

that dictate his scheme. In the seven following chapters Hugh defines the seven mechanical arts and what constitutes each. Hugh's characterization of the mechanical arts is said to have elevated their status, but much of what he says about them is purely theoretical and based more on book learning than on actual observation. This stance is in contrast to that of Plato, who apparently disdained and was critical of the arts and crafts, at the same time that he had a better understanding and knowledge of their techniques, suggesting direct experience with them.[334]

The continued preference for the liberal arts over the mechanical is also seen in the *Metalogicon* by John of Salisbury who was a contemporary of Hugh's. For John, instruction in the liberal arts has a liberating effect. He seems to have the order backwards, however, since he claims that the liberal arts have the inherent quality of freeing man from worry about material necessities. John is ignoring the fact that an education in the liberal arts itself requires a freedom from material cares.[335] His statements about the effect of practicing particular types of art on body and mind are in keeping with Aristotle's assertion that

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[334] Brumbaugh, pp. 40-52.

[335] John of Salisbury, pp. 36-7: "They are called "liberal" either because the ancients took care to have their children instructed in them; or because their object is to effect man's liberation, so that, freed from cares, he may devote himself to wisdom. More often than not, they liberate use from cares incompatible with wisdom. They often even free us from worry about material necessities, so that the mind may have still greater liberty to apply itself to philosophy."

free men should not be allowed to practice arts that will demean them mentally or physically.

ARISTOTELIAN TRADITION

Some aspects of the Christian model of the mechanical arts as an important component on the road to salvation did have an Aristotelian foundation, but there were other thinkers far more steeped in the Aristotelian and Arabic traditions, whose justification of the mechanical arts had a different basis. Rather than viewing the terrestrial world as a symbol or allegory of the divine, thinkers progressively began to see the world as the result of natural causes.[336] The Aristotelian justification for the mechanical arts arose out of the assertion that the liberal and mechanical arts were inextricably bound up with one another, as manifestations of theory and practice, respectively.

Kilwardby, for example, whose thirteenth-century *De ortu scientiarum* combines the Victorine and Aristotelian traditions,[337] explains how the mechanical arts are subalternate to, but also dependent upon, the more elevated speculative sciences.

> ..so it seems to me that all the mechanical arts are subalternate to the speculative sciences, although occasionally the condition of subalternation is found more completely in some, less completely in others. Under physics, indeed, are medicine and alchemy, which

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[336] Crombie, p. 87.
[337] Ovitt, pp. 127-30.

> [itself] is not incongruously reduced to commerce, which itself is the science of wealth getting. In the same way, wool-working the making of arms, architecture, agriculture and food science, which examine with respect to their object, are much supported by physics, and physics makes known the *propter quid* of many things about which they make known the *quae sunt*. Similarly, navigation, which pertains to commerce, and are much aided by astronomy because of their concern with seasons and movements of the heavens, and they make use of many things which astronomy and astrology make known the *propter quid*. Similarly, the art of numbering, which because of its computations is well reduced to commerce is under arithmetic and the instrumental art of harmony which can be reduced to medicine, is under the mathematics of proportions.... Similarly in other mechanical arts everywhere you find that they are under some speculative science or sciences...[338]

Although he situates the mechanical arts in a lower place with respect to the speculative arts, by acknowledging their reliance upon them, the mechanical arts are integrated into an elevated system of knowledge.

Statements such as Kilwardby's probably go back to Al-Farabi's *ortu scientiarum*, which was translated into Latin by Gerard of Cremona in the thirteenth century. This little book contributed to the eventual incorporation of the natural sciences into university curricula, breaking with the dominance of the liberal arts.[339] This is because Al-Farabi includes the *ars naturalis,* the natural sciences, within the traditional scheme of the liberal arts. Included among these are such mechanical arts as agriculture, medicine, painting,

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[338] XLIII, 401, Robert Kildwarby, *De Ortu Scientiarum*, ed. Albert G. Judy (Toronto: The British Academy, 1976); translated in Whitney, pp. 121-2.

[339] Weisheipl: 69.

alchemy, and perspective.[340] These arts, according to Alfarabi, operate in the sublunary world and their function is to effect transformations and remove harm.[341] The restorative function of the mechanical arts as remedy is one that runs throughout the thirteenth-century literature on the mechanical arts and is related to the connection between the body and the soul that underlies the Aristotelian understanding of human psychology, according to which a healthy, well-nourished body depends upon a healthy, well-balanced soul.[342]

The role that the mechanical arts plays in creating a balance between the health of the mind and the health of the soul is also seen in the effect that an art has on the person who practices it. Ideally, an art should enable one to engage both the mind and the body, as a much earlier theorist Audax from the fifth or sixth century wrote:

> How many are the kinds of art? What are they? Certain ones are only of the soul, certain ones are of the body, certain ones are of the soul and body. Which ones are only of the soul? These are poetry, music, astrology, grammar, rhetoric, law, philosophy. Which are of the body? Shouting, leaping, fleetness, carrying

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[340] *Alfarabi: Über den Ursprung der Wissenschaften*, ed. Clemens Baeumker, in *Beiträge zur Geschichte der Philosophie des Mittelalters, Texte und Untersuchungen* Volume 19, No. 3 (Münster: Aschendorffsche Verlagsbuchhandlung, 1916), pp. 1-31.

[341] Ibid, p. 20. (I, 5, 4-28)

[342] For a discussion of the problem of Aristotelian psychology, see Richard Sorabji, "Body and Soul in Aristotle," in *Articles on Aristotle 4 Psychology and Aesthetics*, ed. J. Barnes etal. (London: Duckworth, 1979), pp. 42-64; see also Charles H. Kahn, "Sensation and Consciousness in Aristotle's Psychology," in the same volume, pp. 1-31.

> burdens. Which are of the soul and body? Cultivation of a farm, gymnastics, medicine, mechanics, carpentry.[343]

Agriculture ministers to the soul because it elevates the practitioner of the art by requiring him to be conversant with other arts. Although he was writing before Al-Farabi, Audax had absorbed the understanding of the relationship between the practical and the theoretical arts that Aristotle put forth. Thus he was able to conceive of agriculture as being an intellectual pursuit that engages the mind, insofar as it demands an engagement with other, more theoretical disciplines.

Bonaventure's thirteenth century *De reductione artium ad theologiam* retains many Augustinian principles regarding the place of the mechanical arts, although his hierarchical approach to the arts and their relationship to the human soul reflects Aristotelian principles. He breaks the arts down into four categories, relating them to different types of light. The mechanical arts are illuminated by the external light, sense perception by the lower light, philosophical knowledge by the inner light, and knowledge of the sacred scripture is illumined by a higher light. Although the mechanical arts are associated with the lowest form of light, Bonaventure's subsequent treatment of the subject of the mechanical arts shows a sensitivity to the notion that the

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[343] Audax, quoted in Whitney, 64-5, see also Maximus Victorinus, quoted in Whitney, 46.

mechanical arts perform an important function in that they drive away sorrow or want.

> The first light, then, since it enlightens the mind for an appreciation of the arts and crafts, which are, as it were, exterior to man and intended to supply the needs of the body, is called the light of mechanical skill. Being, in a certain sense, servile and of a lower nature than philosophical knowledge, this light can rightly be termed external…every mechanical art is intended for man's consolation or comfort; its purpose, therefore, is to banish either sorrow or want; it either benefits or delights, according to the words of Horace:
>
> Aut prodesse volunt, aut delectare poetae.[344]

This association of the arts of necessity with human want and need is underscored by the late medieval treatment of the mechanical arts, especially since the arts were often postulated as remedies or cures for human vices. Although vices could be considered moral rather than physical, the terminology used to describe them - *infirmitas, indigentiam, defectus* - are also connected to the medical vocabulary; as the medieval doctrine of the humors posited, moreover, an unhealthy moral or mental condition can either arise from or lead to an unhealthy physical condition.[345]

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[344] *Retracing the Arts to Theology* 2, in *Saint Bonaventure's De Reductione Artium ad Theologiam: A Commentary with an Introduction and Translation*, transl. Sister Emma Therese Healy (Paterson, NJ: St. Anthony Guild Press, 1940).

[345] For a discussion of the arts as remedies, see L.M. De Rijk, "Some Notes on the twelfth-century Topic of the Three (Four) Human Evils and of Science, Virtue, and Techniques as their Remedies," *Vivarium* 5 (1967): 8-15.

V. THE CLASSIFICATION OF AGRICULTURE

AGRICULTURE AND MEDICINE

While the mechanical arts in general are seen as cures for maladies, agriculture and medicine in particular serve such a salubrious function, which is why they are often grouped together. As Hugh of St. Victor noted, both minister to internal needs; both also occupy an ambivalent position in the literature on the mechanical arts insofar as they both are sometimes classified as liberal arts requiring theoretical and practical knowledge. They demand direct experience of particulars, but also knowledge of general theories that need to be applied. The issue of whether or not medicine is an art based on experience or theoretical knowledge had been an issue since Dioscorides and Galen, Greek doctors writing in the first and second centuries, respectively. Their works were translated into Latin in the fifth and sixth centuries and were the most influential herbals from antiquity.[346] Dioscorides, who was a military doctor, based his observations on actual experience gained in the field. By contrast, Galen, who was critical of Dioscorides, was an expert in anatomy and human physiology. He based his observations on experiments and endorsed the idea that medicine was an art.[347] This theme was picked up by Avicenna, who made important contributions to the definition

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[346] Singer: 34.
[347] See, Kibre, p. 215; Thorndike, pp. 606-7.

of medicine as an art or a science in the introduction to his *Canon of Medicine* . He divided medicine into two aspects, the speculative and the practical, which are inextricably bound up with one another. He describes their interaction in the following manner:

> 'Theory' of medicine is that which, when mastered, gives us a certain kind of knowledge apart from any question of treatment...'Practice' of medicine is not the work which the physician carries out, but is that branch of medical knowledge which, when acquired enables one to form an opinion upon which to base the proper plan of treatment...Here theory guides to an opinion and the opinion is the basis of treatment.[348]

The interaction between theory and practice he describes is a reflection of Avicenna's Aristotelian heritage. Aristotle had written about the relationship between the general intellect and the particular intellect, which correspond to the theoretical and the practical realms of knowledge. By combining them in this way Avicenna's work on medicine showed that the one cannot exist without the other.[349] The connection between theoretical and applied knowledge set forth by Avicenna, moreover, made an important contribution to the "scientific" attitude that became prevalent in the thirteenth century.

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[348] Quoted in Gruner, p. 26.

[349] For the significance of wedding the theoretical to the applied arts in the definition of the mechanical arts, see D. Summers, *The Judgment of Sense* (Cambridge: Cambridge University Press, 1987) pp. 235-265, *passim*; see also Crombie, p. 86.

AGRICULTURAL TREATISES

The main sources for achieving an understanding of what activities were and were not included within the art of agriculture are the Roman treatises on agriculture, which influenced such encyclopedic works as Pliny's *Natural History* and Isidore of Seville's *Etymologiae*. Some of these authors address the question of agriculture as an art only obliquely by the material they include or exclude from their treatises and considerations, while others deal pointedly with the scope of agriculture and its status as an art.

Cato, *De agri cultura*

Cato's *De agri cultura*, written in the second century BC, is invoked by all later writers on agriculture as the original authority on ancient and noble farming practices.[350] Although his work is unsystematic and resembles a farmer's notebook more than a full-blown treatise, Cato set the precedent for the topics to be covered in an agricultural treatise. He begins by criticizing trade and praising farming, the noblest possible profession from which the bravest and most respected men are spawned.[351] Setting a precedent followed by others, Cato then turns to a discussion

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[350] See W.D. Hooper "The Life and Work of Cato," in the introduction to Marcus Porcius Cato, *De agri cultura*, pp. ix-xv.

[351] Preface. Cato was an opponent of luxurious living and a critic of what he viewed as the undue influence of Greek culture on Roman Republican life, an attitude that certainly influenced his motivation to write a treatise on agriculture.

of selecting and purchasing a farm, appropriate farm buildings and dwellings, and the duties of the *paterfamilias* and the overseer of the slaves.[352] The activities Cato groups under the art of agriculture are quite broad and include fertilization, pest control, and animal husbandry, although he places special emphasis on viticulture, cultivating olive trees, and the production of olive oil.

Rather than cite earlier authorities as later authors would, Cato appears to base his observations solely on experience.[353] In addition, his work is filled with descriptions of how deities associated with the land were worshipped and how these animistic beliefs affected when certain duties could and could not be performed.[354] Thus Cato's definition of agriculture is rather broad, it functions as a rule based art originating in experience rather than theoretical principles or the teachings of authorities.

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[352] I-V.

[353] This despite the fact that he was a famous orator, philosopher, historian, and legal expert. In other words, he could have filled his work with allusions to learned authors but chose not to. See Hooper, *op cit*.

[354] For this reason Cato's *De agri cultura* has often been used as a sourcebook for information on ancient Roman religious beliefs and rituals.It is interesting that this use of Cato's work, which began in the Augustan period, has extended to the present day. For modern-day examples, see G. Dumezil, *Archaic Roman Religion*, transl. Philip Krap (Chicago: University of Chicago Press, 1970), *passim*; and G. Wissowa, *Religion und Kultus der Römer* (Munich: C.H. Beck, 1902), *passim*.

Varro, *Rerum rusticarum*

In contrast to Cato, Varro, who lived from 116-27 BC, demonstrates a learned approach to agriculture that goes beyond the rudimentary workings of a farm to incorporate the more extravagant pleasures to be had by the proprietor. By staging his treatise in the form of a dialogue between four patricians gathered at the temple of Tellus on a festival day, Varro betrays the learned nature of his enterprise. Although Varro begins by invoking the rustic Gods,[355] which allies him with Cato's agriculturally based system of belief, he also provides a long list of Greek writers who preceded him, including Xenophon, Theophrastus, and Aristotle.[356] His remarks, Varro writes, are derived from what he has observed and practiced on his own land, what he has read, and what he has heard from the experts.[357] Early in Book I, moreover, during the course of establishing what activities actually encompass agriculture, one of the participants in the dialogue defines agriculture as "not only an art but an important and noble art," in addition to being a "science."[358] Varro also observes that in order to understand agriculture, you must first have an understanding of the universe and the elements of which it is comprised.

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[355] I, 4-7.
[356] I, 7-10.
[357] I, 1, 17-20: "Ea erunt ex radicibus trinis, et quae ipse in meis fundis colendo animadverti, et quae legi, et quae in peritiis audii."
[358] Book I, 3: "Ille non gravatus, Primum inquit, non modo est ars, sed etiam necessaria ac magna; eaque est scientia..."

> Its elements are the same as those which Ennius says are the elements of the universe - water, earth, air and fire. You should have some knowledge of these before you cast your seed, which is the first step in all production. [359]

Later in the same book Varro states that nature has provided two routes to agriculture: "experimentiam et imitationem."[360] Varro does not favor trusting received opinion uncritically, therefore, but believes that it should be put to the test before it is accepted.

The *Rerum rusticarum* is divided into three parts. The first deals with agriculture proper and its four components: a knowledge of the farm and the soil, tilling, and a knowledge of the necessary equipment and of what operations are to be performed in what season.[361] The second part covers animal husbandry and its relationship to growing crops. The final section is concerned with steading or the keeping of grazing animals and the degree to which this land-based economy is or is not a part of agricultural practice. This section includes a discussion of luxury food items, as well as aviaries, fishponds, and apiaries. Thus Varro, who incidentally was also responsible for devising a classification of the liberal disciplines that did not

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[359] I, 4, 1.

[360] I, 18, 17-18.

[361] I, 5, 3-4: "Scrofa, Agri culturae, inquit, quattor sunt partes summae: e quis prima cognitio fundi, solum partesque eius quales sint; seconda, quae in eo fundo opus sint ac debeant esse culturae causa; tertia, quae in eo praedio colendi causa sint facienda; quarta, quo quicque tempore in eo fundo fieri conveniant."

include agriculture, views agriculture as a noble art not only for its association with rural tradition, but also for its learned and scientific aspects.

Columella, *De Re Rustica*

Even more so than Varro's work, with which it was contemporary, Columella's *De re rustica* takes a systematic approach to the art of agriculture. In the first book, in fact, Columella states that he wants to accomplish for the art of agriculture, which he sometimes refers to as a science, what Cicero did for the art of rhetoric. In other words, he wants to elevate it to the status of an art with teachable principles,[362] because it is an art befitting free men who wish to increase their profits. Young men, he writes, echoing Cato, are better served spending their time in grain fields and vineyards than in circuses and theaters.[363] Agriculture, moreover, has a history, not only in the writings of Cato and Varro, but in such figures as Triptolemus, the mythical inventor of agriculture whom Columella compares to the great sculptors of ancient Greece.[364] In his *Etymologiae* Isidore follows Columella's approach and emphasizes the fact that agriculture has a written history, which confirms its status as an art. Isidore begins his discussion of agriculture and horticulture

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[362] I, Preface, 3-6, Columella, *On Agriculture*, transl. E.S. Forster and E.H. Heffner (Cambridge, MA: Harvard University Press, 1941).
[363] I, Preface, 15.
[364] I, Preface, 31-33.

by outlining the history of the writers on agriculture, stating that Hesiod was the first to include agriculture among the human pursuits (*humanis studiis*), while it was Columella who brought this study to the height of its fame. He also describes the mythological origins of agriculture, which he attributes to Osiris.[365]

Columella's *De re rustica* is divided into twelve books and covers everything from vineyards to swine herding. Book One deals with the choice of land, the water supply, the farm buildings, and the distribution of tasks among the staff. Book Two is concerned with the practice of agriculture proper and includes a discussion of soil-types, terrain, and what crops are best planted where. Books Three, four and five deal with the cultivation of trees, grafting and transplanting, and cultivating vineyards, respectively. Book Five gives advice on how land should be parceled out and measured. Books Six, seven, and eight are devoted to animal husbandry, including the care and feeding of large and small farm animals, and the maintenance of poultry and fishponds. Book Nine deals with how wild animals may be penned in and bees propagated. Book Ten is written in verse and is intended to be a supplement to Vergil's Fourth Georgic; it recapitulates the material already covered in an allegorical fashion and was probably originally intended to be the last

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[365] I, 1-3, *Etymologies: Livre XVII: De l'Agriculture,* French transl. Jacques Andre (Paris: Societe d'Edition "Les Belles Lettres," 1981).

book.[366] Books Eleven and Twelve enumerate the duties of the overseer and include a *calendarium rusticum*.

Palladius, *De re Rustica*

Although Rutilius Taurus Palladius, who probably lived in the second half of the fourth century, is the last of the authors that preceded Crescenzi and was the most widely read writer on agriculture in the middle ages, his work does not emphasize the elevated nature of the art he is describing. He dispenses with references to rustic gods and does not begin by citing his sources or outlining a history of his craft. He is, in fact, critical of those authors who have taken it upon themselves to write about agriculture eloquently in order to elevate themselves.[367]

Unlike Vergil, Varro, and Columella, who are obviously writing for their peers, Palladius writes as a proprietor giving instructions to his overseer.[368] His work is written in the form of a *calendarium rusticum*, prefaced by a discussion of soils, the proper situation for a farm, and farm implements. It is followed by a book on veterinary medicine, and a short poem on grafting, the *Carminis de*

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[366] Although there are a total of twelve books it would seem that Columella had originally intended there to have been only ten since reference is made to the completion of the treatise in book ten. See K.D. White, pp. 26-8.

[367] I, 1: "Pars est prima prudentiae, ipasm, cui pracepturus sis, aestimare personam. Neque enim formator agricolae debet artibus et eloquentia rhetores aemulari, quod a plerisque factum est:.." *De re rustica*, in *Scriptorum rei rusticae*, ed. Gottlob Schneider (Leipzig: Caspar Fritsch, 1795).

[368] K.D. White, pp. 30-2.

Insitione. He covers all of the themes included in Cato, Varro, and Columella,[369] but arranges them in such a way as to render his work more practical: the entries for each month begin by characterizing the weather conditions for each month, followed by the activities to be performed.

And what of Crescenzi's *Liber ruralium commodorum*? What is the definition of agriculture Crescenzi puts forth? To begin with, it makes some sense to explore the title of the treatise more carefully. Unlike his Roman agricultural forebears, Crescenzi does not choose to title his work either *De agricultura* or some version of De *re rustica*, which could be literally translated as "On Rural Matters." He chooses rather, to employ the word *commodum*, which is difficult to translate. One sees the title translated into English either as *On Rural Management*, or *On Rural Accomodation*, neither of which approaches the richness of the meaning of *commodum*. Looking up this word and its various related forms in a Latin/English dictionary, one finds it has a variety of meanings. As an adverb, it can mean to be done easily, a meaning that one finds scattered throughout the *Liber ruralium commodorum*. As an adjective, it can mean convenient, suitable, agreeable, another meaning applied by

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[369] His main sources appear to have been Columella and Gargilius Martialis, in addition to Cato and Varro. See, R.H. Rodgers, "An Introduction to Palladius," *Institute of Classical Studies. Bulletin, Supplement* 35 (1975).

Crescenzi in his treatise. As a verb it can mean to grant, to serve, or to lend. And as a noun it can mean a convenient opportunity, an advantage, a profit, and goods (in the sense of commodities). The fourteenth-century French translator chose to translate *commodum* as profit, giving us the title *Le livre des proffits champetres*, which would appear to adhere more closely to the original meaning of the word. To translate *commodum* as profit, however, also fails to account for the many nuances of the word, especially since actual profit seems to be the least of Crescenzi's concerns, although he may pay lip service to the farm as a money making enterprise now and again.

As is so often the case in translation, to adequately render *Liber ruralium commodorum* into English would require at least three different titles: *The Book of Rural Benefits*, *The Book of Rural Remedies*, or, finally, *The Book of Rural Arts*. The first of these is easiest to justify from a purely semantic point of view. As has been shown, *commodum* is related to profit and gain, but since the profit earned from Crescenzi's estate is directed primarily at such benefits as physical and mental health rather than monetary gain, "benefit" seems to me a better choice. As can be seen in the summary of the treatise, moreover, the benefits of owning and running an estate are far-reaching: there is access to medicine, wine, hunting, fresh air, a place for performing scientific experiments, and an escape from the worries and

cares associated with public life and, by extension, the city. Although closely related to "benefit," to translate *commodum* as either "remedies" or "arts" requires a more involved explanation.

As the preceding investigation into the mechanical arts has shown, the mechanical arts, in general, and the arts of agriculture and medicine, in particular, were considered to be cures or remedies against specific wants or needs. Their inception, according to medieval thinkers, arose out of the need to make up for the deficiencies caused by the expulsion from Paradise into a world characterized by want and need. Included among the words describing the cures for vices and needs one finds variations on *commodum*.[370] Hugh of St. Victor, for example, describes the arts of fabric-making, armament, and commerce as "protecting from harms" (*ab incommodia protegit*), harms being literally translated as "incommodiousness."[371] While the arts Hugh describes as protecting from harm are distinguished from agriculture and medicine, which serve internal needs and are therefore nourishing, in practice they also protect from harm. As Crescenzi remarks throughout his treatise, internal nourishment is a requirement for the health of the body, which prophylactically protects the body from disease. In the literature on the human vices, which are seen as

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[370] See De Rijk: 8-15.

[371] See Sternagel, pp. 71-2; and *Didascalicon*, II, 20.

deficiencies (*defectus*) or illnesses (*indigentiam* and *infirmitatem*), the cures are described, sometimes interchangeably, as *necessitas*, *mechanica*, *commoditas*, or *scientias*.[372] Insofar as *mechanica* and *commoditas* are synonymous in the discourse on the vices and their cures, it seems to me that one could arguable dub Crescenzi's treatise *The Book of Rural Arts*.

Translating *commodum* as remedy or art allows us to consider, finally, how Crescenzi approaches agriculture and how his approach relates to the Roman agricultural tradition. Roman agricultural writers all assert that agriculture is beneficial to the practitioner and by extension to society. The farm represents an alternative to and protection from such urban evils as circuses and theaters; it is a cure, if you will, for urban maladies. The emphasis of their treatises is to establish agriculture as an economic alternative to trade, which has social implications. While he does support this view in his preface, for Crescenzi, I would argue, agriculture has a redemptive quality that goes beyond social reform. The ills cured by agriculture are not merely those of excessive luxury and urbanism, they are the ills caused by the disobedience of those whom Crescenzi refers to as the first parents. The expulsion from Paradise resulted in such wants as hunger and sickness, both of which

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[372] See De Rijk, *opcit*.

agriculture is effective in curing. Insofar as it is a product of the rural arts, the rural estate and all that it entails represents the ultimate re-creation of a Paradise on earth by means of the redemptive power of the mechanical arts. The pleasure garden, which will be addressed in the next chapter distills the paradisical interpretation of the estate into the perfect fusion of utility and delight.

CHAPTER 4: THE PLEASURE GARDEN

In the seventh section of Book One, "On the arrangement of the interior of the estate," Crescenzi describes a place with vines and fruit trees reserved for the master that is "secured from the voracious greed (*voraci improbitate*) of the rustics. In this place," he writes, "will be made a pleasant garden (*loco amoenum)* and a Dominican herb garden, and a bee hive, and a columbarium, and an enclosure for young hares, which will serve a select community."[373] It is not until Book Eight, however, that Crescenzi fully explicates how such pleasant gardens can be made, employing many of the techniques he outlines throughout his work.

I now turn to an analysis of Book Eight in order to establish, as stated in the introduction to the description of the treatise, how the pleasure garden chapter could be viewed as a microcosmic justification for the entire estate and vice versa: pleasure sanctifies utility and utility makes pleasure possible. The chapter will begin with a thorough critical description of the contents of Book Eight that emphasizes how it relates to the other books. In order to place Crescenzi's practically oriented conception of the pleasure garden into a literary context, I will then compare the contents of Book Eight to contemporary literary tropes

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[373] I, 7, 3.

and traditions. In the final section of this chapter, my emphasis will become more theoretical, turning to a discussion of aesthetics and how Crescenzi's description of the pleasure garden reveals an aesthetic point of view in keeping with the concurrent definition of art.

I. DESCRIPTION OF THE EIGHTH BOOK

The pleasure garden book, whose title strictly speaking is "On the Pleasures and Delights made Skillfully from Trees, Herbs, and Fruits," is divided into eight chapters. It is the last book of the treatise to deal with agriculture proper and also touches upon all of the previous books in some form. Yet, in the preface, Crescenzi immediately calls the reader's attention to the fact that this book is different from the rest. While the previous books were concerned with how trees and herbs are useful to the human body, this book focuses on how the plants and herbs can give pleasure to the mind [*animi*], which, according to Crescenzi and in keeping with medieval medical practices, affects bodily health.[374] Thus the main purpose of this book is to provide information about the benefits of garden pleasures for the minds and bodies of garden users; pleasures that by definition are experienced by the senses. The first three chapters describe types of gardens, while the last five describe methods and techniques

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[374] VIII, Preface.

by which the elements of a garden may be manipulated to produce pleasure and delight. Paralleling the concerns of the treatise as a whole, the garden elements with which Crescenzi deals are herbs, trees, and vines, which are assembled to form herb gardens, groves, orchards, vineyards, and meadows. These elements are grafted, weeded, ordered into rows, and transformed into structures, whereby their utility is defined by their ability to delight. These delights have the effect of refreshing the senses, promoting good health, causing wonder and astonishment, protecting garden users from the elements, and affording views from one part of the garden to another. For a certain class of people, delights of the garden provide respite and recreation from important duties and obligations, which allows them to perform their roles with renewed vigor. Throughout the pleasure garden book, moreover, Crescenzi addresses such issues as the relationship between pleasure and profit in the garden, weighing the one against the other and showing how what is useful in one context, such as a tree that bears fruit in an orchard, is not necessarily useful in another.

SMALL GARDEN OF HERBS

The first three chapters of Book Eight describe three different types of garden spaces. The first chapter, "On small gardens of herbs," describes what might be considered

the typical enclosed medieval garden; it is a gloss, in fact, on Albertus Magnus' well-known description of *viridaria* in his *De vegetabilibus*.[375] Comparing the text by Crescenzi to that of Albertus, it becomes clear that the former, with the exception of omitting the introduction to Albertus' text and changing the word order in some of the sentences, has copied the text almost verbatim.

The small garden of herbs consists of a flattened piece of ground, covered with a thick turf that has the texture and density of hair.[376] Around the edge of the garden, which is of an undetermined shape, but was probably square, are planted fragrant and flowering herbs, in addition to some flowering plants, such as violets, lilies, roses, and gladiolas. Positioned between the central lawn and the herbaceous border is a turf-seat, which Crescenzi describes as flowering and pleasant. The seat is created by raising the turf as can be seen in many medieval illustrations.[377] (fig. 9) It is unclear, however, whether there is one seat that encircles the entire garden or if there are many placed at intervals. Also located on the periphery of the garden are trees and vines that are supposed to cast shade on the

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[375] Albertus Magnus, "De Vegetabilibus et Plantis," in: *Albertus Magnus, Opera Omnia* 10 (Paris: Ludovicum Vives, 1890), pp. 293-294; for a translation of this text into English, see Harvey, *Mediaeval Gardens*, p. 6.

[376] VIII, 1, 1.

[377] Paul, Martine, "Turf Seats in French Gardens of the Middle Ages." *JGH* 10 (Jan. - March 1985): 3-14.

occupants of the turf-seat.[378] In addition to the recommended plants and trees, Crescenzi and Albertus advise placing a fountain at the center of the plot, whose beauty and purity will produce pleasantness.[379]

The main emphasis in this chapter is on the role the small herb garden and its contents play in refreshing the senses, in particular the senses of sight and smell. Vision is primarily refreshed by the green turf, but also by a variety of flowering and non-flowering plants; sinewy and hair-like plants requiring fine and compact soil are especially pleasing to the eye. The sense of smell, too, is pleased by herbs and flowers, as well as fragrant trees. The most important function of the trees, however, is to provide shade, which is the main purpose of trees in the small garden of herbs. Crescenzi states specifically that the trees are not intended to be fruit-bearing, since their cultivation and fertilization would damage the green turf, disrupting its smooth surface; satisfying the sense of taste, evidently, is not of great concern in the small garden of herbs.[380] The trees, moreover, should not be planted too densely, since they would block the free flow of air through the garden, in addition to enabling spiders to spin their webs between them.[381]

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[378] VIII, 1, 2.
[379] VIII, 1, 4.
[380] VIII, 1, 2.
[381] VIII, 1, 3.

In medieval medical theory, access to fresh air was considered one of the most important means of ensuring good health.[382] Thus the arrangement of trees is determined by the garden's function as a place to enjoy fresh, healthful breezes and cooling shade. In keeping with the medical advice set forth by Avicenna and invoked in Book One of Crescenzi's treatise, the small garden of herbs should be open to the healthy winds of the north and east, and closed to the violent, unhealthy winds of the south and west. The theme of healthy vs. unhealthy, pure vs. noxious runs through the description of the herb garden: the pleasant green turf can be created only after clearing away the harmful plants and roots;[383] trees that are not sweet-smelling, such as nut trees, are not allowed in the pleasure garden; and rue, whose color is noted for its ability to refresh the eyes, also keeps poisonous animals (presumably snakes) out of the garden.[384]

GARDENS FOR PEOPLE OF MODERATE MEANS

The next two types of gardens Crescenzi describes are classified not according to the plant materials they contain, as is the case in the description of the herb garden, but

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[382] Siraisi, 1990, pp. 128-9; Avicenna was one of the most important proponents of fresh air as a requirement for good health, see Avicenna in Gruner, pp. 175-6.
[383] VIII, 1, 1.
[384] VIII, 1, 3.

rather according to the wealth and stature of the persons for whom they are created. These sections, unlike the description of the small herb garden, cannot be traced back to a specific source, leading one to believe that they are indeed based on Crescenzi's own observations. The medium-sized garden for large and moderate landowners is basically a combination of orchards and meadows surrounded by a hedge of thorns and roses or pomegranates and other fruit trees.[385] Of particular importance in this type of garden is the careful ordering of the trees in rows arranged according to type. While the preference for trees planted in rows at a certain distance from one another has the very practical function of providing ample room for the roots, the emphasis on type is reminiscent of an encyclopedic impulse. The motivation for arrangement by type has much to do with issues of size and other qualities that make them compatible with one another. These trees are interspersed with vines that offer both delight and utility, and the orchard spaces are divided off from the meadows, which must be kept neat by frequent weeding and biannual mowing.[386]

Crescenzi uses two terms to refer to the rows in which the trees are to be kept, *acies* and *ordine*. In this context these words refer to rows and order, respectively. Both terms, however, were used in military parlance. *Acies* is a

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[385] VIII, 2, 1.
[386] VIII, 2, 2.

visually determined sight line and is a term also used in a military context for rows of troops, while *ordo* is related to military rank.[387] Thus the rows of trees Crescenzi recommends make reference implicitly both to the actual way in which they are sited and measured and to a protective function, as do the frequent references to fortressed walls of trees and thorns in the next two chapters. While the gardens for those of moderate means are less elaborate than those for kings and lords that follows, Crescenzi does recommend that trees can be shaped into pergolas in the form of tents or pavilions.[388]

GARDENS FOR KINGS AND WEALTHY LORDS

The gardens for kings and wealthy lords are more fully described than the herb garden and the garden for people of moderate means. This chapter, moreover, most directly addresses issues of pleasure, not only as it promotes health, but also as socially determined and determining. Crescenzi begins, in fact, by stating that it is the wealth and power of kings and lords that enables them to satisfy all of their wants and desires in their gardens; it is their financial power that allows them to conceive of the full extent of

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[387] See, A. Ernout and A. Millet, *Dictionnaire Etymologique de la langue Latine Histoire des Mots*, 4th edition (Paris: Librarie Klincksieck, 1967), p. 5; A. Walde *Lateinisches Etymologisches Wörterbuch*, 2, 4th edition (Heidelberg: Carl Winter, 1965), p. 222.

[388] VIII, 2 ,2: "Item fiant in eo pergularia in convenientori parte ad modum vel papilionis formata."

pleasure.[389] It is here also that the notion of recreation is fully developed, whereby the garden not only refreshes the senses, but actually provides a venue for the lords and ladies to find respite from their responsibilities. This is especially true of the king, who may retire there after performing his official duties, a purpose reminiscent of the classical idea of retreating to one's villa to experience rural *otium*, or leisure, in preparation for the *negotium*, or business, of the city.[390] This section points to the audience for Crescenzi's treatise and echoes a line from his dedication to King Charles the II:

> When I considered the age and manifold plans/thoughts of your excellent majesty, I resolved to compose a book offering consolation and delight [*consolationem et delectationem*] to your soul and perpetual use [*perpetuam utilitatem*] to your subjects;...[391]

Thus it is the king who is able to experience delight, whereas it is his subjects who perform the labor that enables the monarch to enjoy the delights of the garden. This division emphasizes the idea that pleasure gardens, like agriculture, are not of equal value to all.

The elements which the king or lord is able to incorporate into his garden by means of his wealth include:

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[389] VIII, 3, 1.

[390] VIII ,3 ,2. See James Ackerman, "The Typology of the Villa," in *Villa: Form and Ideology of Country Houses* (Princeton, NJ: Princeton University Press, 1990), pp. 9-34.

[391] *Epistual miss ad Karolum regem secundum*, 2: "Cum considerarem aetatem et multiplices cogitationes excellentiae maiestatis Vestrae, deliberavi librum componere afferentem consolationem et delectationem animo Vestro et perpetuam utilitatem subiectis Vestris…"

meadows, groves, a small herb garden, wild and tame animals, fish ponds, a palace, pergolas, an aviary, a covered walkway, a tree house, views into the landscape, and marvelously grafted trees and vines. Crescenzi recommends that such an abundant pleasure garden be located on 12 1/2 acres or more of flat land in which springs flow. The entire space is surrounded by a high wall. A grove of trees planted in the north serves as a home for the wild creatures that are let loose in the garden. These trees are arranged in such a manner as to afford the members of the court views of the wildlife flitting back and forth over well-placed alleys.[392] The palace is built in the south, allowing views into the surrounding gardens filled with trees that may provide shade in the summer months. An enclosure for harmless animals, such as the one described in Book Nine, is also placed in the vicinity of the palace. Here, hares, stags, roebucks, rabbits, and fishponds are kept.[393] Also located near the palace is an aviary which Crescenzi describes as "a kind of house...which has a roof and walls densely woven from thick boughs." The birds kept here provide both visual and aural stimuli for the senses.[394]

As a supplement to the main palace, Crescenzi suggests building an arboreal summer palace with walks and bowers made

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[392] VIII, 3, 1.
[393] VIII, 3, 2.
[394] VIII, 2, 3.

from tree trunks that could be used when the weather is dry. Although such slow growing trees as willows, elms, or birches are best suited for such a project, it is possible to use fruit trees. An even quicker method is to create a frame of wood and allow vines to grow over it, thereby creating a roof and walls.[395] "In such a garden," Crescenzi concludes, "the king will not only delight himself but sometimes will ease his necessary cares by glorifying God on high, who is the Author and cause of all good pleasure."[396]

GARDEN ENCLOSURES AND OTHER ARBOREAL CONSTRUCTIONS

In the remaining chapters of Book Eight, Crescenzi provides recommendations on how to care for and reshape the elements of a garden into miraculous and pleasant forms, with a special emphasis on the elements considered essential to the gardens of kings and lords. In chapter four he describes how trees can be used to create fortifications around large estates, fortifications that he says actually resemble phalanxes with towers. He proposes that these be made by clearing the existing area around riverbanks of thorns and other weeds and then planting willows, poplars, or elms supported by rods and ropes along them in straight rows at a distance of four feet. Once they have reached a certain height, the tops of the trees are actually woven into one

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[395] VIII, 3, 4-5.
[396] VIII, 3, 2.

another and, given some time, the woven frame created by them should actually be able to support the weight of people walking along the green wall. Crescenzi even suggests that the tops of the trees that grow along the walkway can be pruned in such a way that they will look like crenellated walls.[397]

It is a bit difficult to get a clear picture of some of the fantastical constructions Crescenzi recommends building. Adjacent to the wall, or at its corners, Crescenzi suggests placing *solaria*, or sunny terraces, constructed out of four trees that are bent toward each other in the center to create a roof. These terraces, which seem like *logge* made of trees, can also be placed over the entrance to a house, although it is unclear if Crescenzi means an actual house, or one constructed of living trees. The final structure he describes in this section seems to be a more detailed description of the summer palace in the garden of kings and lords. It is constructed of living columns (*columnis viridibus*). Beams are placed across the trees and covered with reeds to create a roof. Although Crescenzi implies that the living columns should be trimmed back to construct the house, he does say that the branches that continue to spring forth from them not only keep the column

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[397] VIII, 4, 1-2.

from drying out, but protect the house itself from the heat of summer.[398]

FIELDS AND MEADOWS

Having discussed different types of gardens and the structures to be made in them, Crescenzi turns to the different types of spaces that comprise the garden for kings and lords: the agricultural field, the vineyard, the orchard and the herb garden, to each of which he attributes its own charms and emphasizes particular aspects.

Fields, which Crescenzi praises for being well-shaped and encompassing a great expanse, raise issues of the relationship between pleasure and utility. In the fields, in fact, utility takes precedence over pleasure; it is their usefulness that makes them pleasurable, unlike the garden, which which functions the opposite way, as Crescenzi himself noted in Book Seven.[399] With respect to the fields Crescenzi emphasizes how they are purchased, what relationship they

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[398] VIII, 4, 3. Although Vitruvius had not yet been rediscovered by this time period, the house of living columns Crescenzi describes is evocative of the early houses Vitruvius describes, with their roofs made of leaves and wattled walls. For a medieval example of columns equated with trees, see Plate 56 in the *Sketchbook of Villard de Honnecourt*, ed. T Bowie (Bloomington: Indiana University Press, 1959). It is especially interesting to note that later depictions of the primitve hut, such as those by Laugier and Villet Le-Duc in the 18th century, show houses made out of living trees with leaf-bearing branches. For the best discussion of the primitive hut in architectural theory, see. J Rykwert, *On Adam's House in Paradise* (New York: MOMA, 1972), passim. Rykwert also includes examples from the the Gothic period of stone columns made to look like trees on pp. 98-99.

[399] VII, 5, 2.

should have to the estate, how they should be irrigated, and the well-laid network of paths that should be made in them. Fields, of course, would have made up the periphery of an estate, seen from the main palace, but their spaces would also blend into the rest of the countryside. They are the bread and butter of the estate, so to speak, but their beauty comes from their utility and their wide-open well-ordered natural design; thus the fields for Crescenzi truly fulfill Horace's dictum of "prodesse et delectare." The emphasis on the views, moreover, is reminiscent of the truism that the eye of the master is the best fertilizer for the fields.[400] Only on a well-ordered farm with all-encompassing viewpoints is the *paterfamilias* guaranteed a position from which to oversee the workings of his estate.

VINEYARDS

While vineyards, too, ultimately have a particular purpose beyond mere pleasure, the nature of the miracles they can afford differs greatly from that of the fields. Vineyards, according to Crescenzi, should be placed in a plain or on a small hill to the east of the estate and should be clearly laid out and well ordered. While the main purpose of the grapes grown in them is to make wine, the vineyard is

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[400] Cato IV, 2, writes that the main house of a farm should be comfortable, so that the master will want to spend time there, since his presence ensures that the farm will run more efficiently; see also Pliny, *Natural History* 28, 6, 31.

also a place of experimentation where the *paterfamilias* can attempt all sorts of marvelous graftings of one vine onto another and, indeed, of vines onto trees.[401] The grafts can have marvelous results, such as grapevines growing out of trees. Grafting can also produce seedless grapes and vines that bear both white and red grapes. This interest in the natural sciences and experimentation, as we have seen, is related to Crescenzi's elevation of the art of agriculture above mere labor. The wine created from the grapes is manipulated to its own pleasurable and useful effect: different grapes can be mixed together to create wines of various colors and tastes and, when mixed with herbs, wine can serve medicinal purposes. In a final recommendation, Crescenzi suggests that having wine available at the estate is not just good for its medicinal purposes, but also to be shared with friends, emphasizing that hospitality is an important aspect of country life.[402]

ORCHARDS AND TREES

Crescenzi begins the chapter on trees by stating that the *paterfamilias* should keep his eye out for good trees from which to make cuttings, to graft onto his own, or to transplant onto his estate. These trees are to be planted in harmonious rows and in proper relationship to one another and

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[401] VIII, 6, 1.
[402] VIII, 6, 7-9.

by extension to the rest of the garden. So they do not harm the crops, large trees must be planted so that they do not cast unnecessary shade onto the fields.[403] By planting the larger trees to the north and the west and the smaller ones to the east and the south the delight of the open fields is maintained. Like vines, trees also have the potential for grafting experiments. By grafting a peach tree onto an almond tree, for example, one produces fruits with the flesh of a peach and the pit of an almond.[404] Employing some of the techniques described in Book Five, Crescenzi educates the reader on how to produce large pomegranates, trees that bear two different types of fruit, and trees that bear flowers of varying colors. Likewise, by means of careful germination procedures, one is able to produce cherries and peaches without pits and transform the natural color of the fruit.[405]

THE PLEASURES OF HERB GARDENS

While this chapter begins by restating the importance of well-fertilized soil and neatly planted beds, Crescenzi soon turns to what brings delight in the garden of herbs. He calls these "unusual things", or literally, useless things (*inusitatas*), the results of plant metamorphoses that turn natural things into seemingly miraculous ones.

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[403] VIII, 7, 1.
[404] VIII, 7, 2.
[405] VIII, 7, 4-5.

> Et ut plenius delectet, re inusitatas operetur in eo; possunt enim in eis quaedam naturalia fieri, quae quibusdam miraculosa videntur.[406]

The experiments he describes are conducted with such ordinary plants as lettuce, nasturtium, colewort, radish, leek, and cucumber. Plants can be created that look like lettuce, but taste like radishes. Cucumbers of varying sizes can be produced: by confining it to a terra cotta vessel, the cucumber can even be grown in such a way that it takes on the form of a human face or an animal. These horticultural experiments are one of the main sources of delight in Crescenzi's garden estate. Various form of the word *miraculo* and *mirabile* appear throughout the treatise, in fact, especially in conjunction with grafting experiments.

Crescenzi's description of the pleasure garden does not really describe the layout of the garden per se. Rather, he describes elements and details of the design. He is mostly concerned, however, with the effect of the garden on the people who use it. One of the main fascinations associated with the garden is how its natural elements are transformed into objects normally associated with crafts produced by the other arts, which renders nature miraculous. Nature is transformed into something she is not, concretizing the

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[406] VII, 8. By the time of the 1548 Latin edition of the *Liber ruralium*, the word *inusitatas* had transformed to *musicatas*, indicating, perhaps, the Renaissance practice of including such marvels as the Organ Fountain at the Villa D'Este in Tivoli. *De omnibus agriculturae partibus…* (Basil: Heinrich Peter, 1548).

notion that art transforms nature into something whose essence runs contrary to its original form. This tendency echoes Aristotle's definition of art in the *Metaphysics*:

> Hence all arts, ie. the productive sciences, are potencies; because they are principles of change in another thing, or in the artist himself qua other.[407]

As a form of art, the garden relies upon transformation and metamorphosis: the place reserved for the garden is weeded and specially treated, transforming it into a *viridarium* marked by a lovely plot of grass; the trees are planted in such a way as to provide a pleasant canopy rather than fruit, transforming their alimentary function into one of shelter; by raising the turf and placing it in front of the herbs, the turf becomes a seat from which the shade can be enjoyed; by orienting the garden correctly, the beneficial properties of the winds are accentuated, transforming a garden into a pleasant place, a pleasance, that promotes health; and by placing a fountain at the center of this transformed nature and ridding it of snakes and poisonous plants, the herb garden experiences a final and implied transformation into a kind of Eden. The association of fountains with the four rivers that flowed through Paradise would have been immediate to a person in the middle ages. Freed of snakes and poisonous plants, finally, the Eden recreated in the pleasure

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[407] Aristotle, *Metaphysics*, IX, 2, 1.

garden is protected against disease and the temptation that brought about the expulsion in the first place.

II. RELATIONSHIP TO EXISTING LITERARY TROPES AND TRADITIONS

Scholars have deemed it unwise to read Crescenzi's descriptions of pleasure gardens as actual observations, since he is so heavily indebted to an existing textual tradition. Although Crescenzi does refer to the pleasure garden as a *locus amoenus* in the first book of the treatise, he neither directly invokes the literary and iconological tradition of the pleasure, nor avails himself of overtly poetic language in his description of the pleasure garden. For this reason, scholars probably have not generally tried to connect Crescenzi's gardens to the existing poetic and literary discourse. Crescenzi does refer to the poetry of Vergil and even makes references to the *Carmina Burana* and Ovid's *Metamorphoses*, but he mines these sources for their practical value not their poetry.[408] Given the interconnectedness of function and meaning in the garden, however, the relationship between Crescenzi's description and the use of gardens in medieval literature warrants re-examination.

It seems to me that a careful reading of Crescenzi's descriptions of pleasure gardens reveals a deep connection to

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[408] For the reference to *Carmina Burana* 62 see, II, 21, 3; For the reference to Ovid, *Metamorphoses* 2, 279, see II, 17, 2.

the existing literary tropes and conventions. The practical emphasis of Crescenzi's treatise, however, forces him to modify the ideal terms of literary and pictorial representations of gardens. In this way, comparing Crescenzi's practically oriented text to poetical and literary evocations opens up the possibility of exploring the interaction between the real and the ideal, the locus and the topos, the dreamable and the realizable. It is probably somewhere in the space between these two modalities that the truth of gardens resides, since the realizability of dreams and ideals is tangibly restricted by the actuality of climate, soils, water supply, pests, the passage of time, and financial restrictions.

The gardens of medieval Romance and poetry to which Crescenzi's gardens will be compared are rooted in three distinct yet interrelated traditions: the biblical Garden of Eden, the *hortus conclusus* of the Song of Songs, and the Classical *locus amoenus*. Before embarking on a discussion of the similarities between Crescenzi's pleasure garden and gardens of love in medieval literature, I will briefly characterize these three traditions. While this may seem like well-trodden ground, by restating some of the themes that go into the literary tradition it seems to me that our understanding of Crescenzi's text will be deepened.[409]

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[409] Although it would seem to make sense to compare Crescenzi's text to visual representations of gardens, there actually are relatively few

PARADISE AND EARTHLY PARADISE

The most pervasive and obvious reference to the garden in medieval thought and literature is paradise, described in Genesis 2:8-10:

> And the Lord God planted a garden eastward in Eden and there he put the man whom he had formed. And out of the ground made Lord God grow every tree that is pleasant to the sight and good for food; the tree of life also in the midst of the garden, and the tree of knowledge of good and evil. And a river went out of Eden to water the garden; and from thence it was parted, and became into four heads.

As the passage states, paradise contained all trees and plants pleasant to both sight and taste. In paradise, moreover, man dwelt in harmony with all of the beasts and the earth gave of itself freely; his responsibility was to dress and keep the earth, but not, as after the expulsion, to till the ground and labor for survival. From this account come the many depictions of Adam and Eve quitting Eden with the hoe and spindle, respectively.[410] Having been expelled from the garden, moreover, the arts - without which survival would have been impossible in the post-lapsarian world - had to be invented.

The paradise of the Old Testament is conflated with the Golden Age myths of Homer, Hesiod, Vergil, Horace, and Ovid,

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images of pleasure gardens from the thirteenth and early fourteenth centuries. It is not until the late fourteenth and fifteenth centuries that a veritable explosion of garden imagery occurred. See Paul Watson, *The Garden of Love in Tuscan Art of the Early Renaissance* (Philadelphia: The Alliance Press, 1979), *passim*.

[410] Maureen Pelta, "Expelled from Paradise and put to work: recontextualizing Castagno's Adam and Eve," *Journal of Medieval and Renaissance Studies* 25 (1995): 73-87.

giving birth to the medieval notion of the earthly paradise, whose value is simultaneously moral and aesthetic. The purity associated with the age before the expulsion, which in the Greek and Roman traditions parallels the Golden Age, arises not only from the beauty of the landscapes, but also from the innocence associated with it.[411] Thus, in *The Metamorphoses* Ovid describes a time when there was no war and the earth gave freely of her bounty.[412] The innocence, the abundance, the lack of work associated with paradise is implicit in almost every garden description found in medieval literature; and, indeed, in every garden built.

Islamic paradise gardens, which would have been known to medieval knights and kings from the Crusades and also from the courts at Sicily and Spain, create a literal symbol of paradise. In such *char bagh* gardens the four rivers that flow out of paradise are abstracted into four rivulets that flow from a central fountain and divide the garden into four quadrants. The word paradise is originally derived from the Persian *paridaeza* (lit. formed around), which was the word for hunting park or royal enclosure.[413] While some small Western gardens did make such direct references to their paradisical origin by placing a fountain at the center, others concealed more deeply the paradisical references. In

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[411] A. Bartlett Giamatti, *The Earthly Paradise and the Renaissance Epic* (Princeton, NJ: Princeton University Press, 1966), pp. 33-49.
[412] Ovid, *Metamorphoses*, I, 89-112.
[413] Giamatti, p. 10.

literature, such stock topoi as references to gardens containing nearly encyclopedic listings of herbs, trees, and even animals pay homage to the notion that paradise contained all things known to man. In this way the garden tradition parallels the encyclopedic tradition, insofar as both seek to reassemble in one place what has been dispersed and divided across the globe.[414]

The connection between Edenic and encyclopedic aspirations is especially evident in the pleasure garden of kings and lords. Crescenzi insists that the garden - and indeed the entire estate - be stocked with the best of all plants, trees, and animals. This tendency could actually be applied to the treatise itself, whose exhaustive treatment of agriculture aspires to an Edenic completeness. Work, for obvious reasons, cannot be bracketed out entirely in the discussion of an agricultural estate, but the garden, according to Crescenzi offers opportunities for rest, repose, and recreation. In a garden one may return to the prelapsarian state in which work had not yet become central to human existence. It could be argued that even the work required on an agricultural estate is of a piece with Adam's ordained mission to dress and keep the garden. Finally, just as the topos of the Golden Age in Roman mythology became a

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[414] For a discussion of the paradisical foundation of later botanical gardens, see John Prest, *The Garden of Eden: The Botanic Garden and the Re-Creation of Paradise* (New Haven: Yale University Press, 1981), *passim*.

site for projecting primitivist beliefs, the Garden of Eden had a similar function.[415] This primitivist impulse can be found in the houses built of living trees that Crescenzi describes. Although this is not explicitly stated in the text, these leafy structures enable the king and his royal entourage to envision themselves in a simpler time, much as Marie Antoinette would dress up as a shepherdess and play milkmaid some 250 years later.

HORTUS CONCLUSUS

The image of the hortus conclusus stems from the fourth chapter of the Song of Solomon, in which the image of the beloved is described as, "A garden enclosed [is] my sister, my spouse; a spring shut up, a fountain sealed." (Song of Solomon 4:12) Because of the overtly sexual nature of the Song, medieval theologians and thinkers were forced to suppress the sexuality of the poem by means of allegory. Still others, like Bernard of Clairvaux, used it to rail against enemies of the church.[416] It was not until the twelfth century, however, that the subject and garden of the Song came to be associated with the Virgin Mary, the enclosed

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[415] For the medieval equivalent of primitivism and anti-primitivism, see George Boas, *Primitivism and Related Ideas in the Middle Ages* (Baltimore: Johns Hopkins University Press, 1948), *passim*.

[416] William E. Phipps, "The Plight of the Song of Songs," *in The Song of Songs*, ed. Harold Bloom (New York: Chelsea House Publishers, 1988), pp. 9-21.

garden and the sealed fountain standing for her chastity.[417] This conflation of the Virgin with the Song of Songs is the source of the wealth of images of the Virgin seated in a garden. The poem was probably an epithalamium written for the marriage of the King of Solomon and is thought to be a description of Solomon's own garden.[418] The beauty of the garden is equated with the body of the beloved, which is described using landscape imagery, which became a convention of poetry that culminated in the blazon poetry of the Renaissance.[419]

The garden described in the Song of Solomon is a luxuriant orchard abundantly planted with vines, exotic spices, and fruit trees of all kinds. Although it is difficult to keep track of the shifting narrative voices, one of the presumably female figures identifies herself as a tender of the vineyards:

> I am black, but comely, O ye daughters of Jersualem, as the tents of Kedar as the curtains of Solomon. Look not upon me, because I am black, because the sun hath looked upon me: my mother's children were angry with me; they made me the keeper of the vineyards; but mine own vineyard I have not kept. (Solomon 1:5-6)

This statement acknowledges the importance of shade and its association with rest and repose. As an heir to the fall,

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[417] Brian E. Daley, "The 'Closed Garden' and the 'Sealed Fountain': Song of Songs 4:12 in the Medieval Iconography of Mary," in *Medieval Gardens*, pp. 259-63. See also, Ann W. Astell, *The Song of Songs in the Middles Ages* (Ithaca, NY: Cornell University Press, 1990), pp. 42-72.
[418] Stewart Stanley, *The Enclosed Garden* (Madsion: University of Wisconsin Press, 1966), p. 4.
[419] Pearsall, pp. 239-40.

the bride has been forced to labor; she is the tender of the vines. This labor has exposed her skin to the sun, causing it to blacken.[420] The Song of Solomon thus makes a distinction between the enclosed garden and the open field, much as Crescenzi does when he writes in Book Seven that the garden must be the opposite of the fields. Unlike the field, where the bride's skin becomes dark, in the garden she is able to rest in the shade of the tree, which is the equivalent of being blessed.[421] What distinguishes Crescenzi's description of the small garden of herbs from the garden in the Song of Solomon - and from the images of the small enclosed medieval garden in general - is that he does not emphasize the existence of a wall. Walls are a dominant theme, however, in the estate in general, as they are built to surround the estate as a whole and to divide one part of the estate from another.

THE LOCUS AMOENUS

Although there is some dispute regarding the validity of what Ernst Curtius identified as the literary trope of the *locus amoenus*,[422] there did exist in the middle ages a certain convention for describing the pleasant places in which the

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[420] Ibid., pp. 60-67.
[421] Ibid., p. 86.
[422] See for example, Dagmar Thoss, *Studien zum Locus Amoenus im Mittelalter* (Vienna: Wilhelm Braumüller, 1972), passim; and Paul Piehler, *The Visionary Landscape* (London: Edward Arnold, 1971).

protagonists of epics and other literary works sought refuge from turmoil. This literary set-piece essentially describes a wild place set in the natural world. The protagonist of a romance generally happens upon such a naturally-occurring place accidentally in the course of his travels. Traditional *loci amoeni* are often clearings with a brook running through them; they include singing birds, groves of fruit-bearing and non fruit-bearing trees, meadows, flowers, shade, and fresh breezes. Curtius traces this tradition in medieval literature back to such Latin writers as Ovid and Virgil, who in turn had taken their inspiration from the nature descriptions in Homer and most importantly in Theocritus, whom Curtius credits with being the originator of pastoral poetry. According to Curtius, these descriptions, which are found throughout medieval literature in such texts as the *Roman de la Rose*, Andreas Capellanus' *On Love*, and Gottfried von Strasburg's *Tristan*, do not describe a reality, but are rather the result of a deeply-rooted rhetorical tradition. As such, the feeling for nature to which they seem to point is not rooted in an actual reality, but is a topos inherited from antiquity.[423]

In the middle ages, this natural ideal is often transformed into a constructed garden or a garden of love, which contains many of the elements of the locus amoenus,

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[423] For the most important discussion of the literary descriptions of landscapes, see Curtius, pp. 192-202.

albeit with the difference that it is bounded, smaller and made by human (or implicitly divine) hands. The pleasure garden has, in fact, been referred to as an abbreviated version of the *locus amoenus*, abbreviated in the sense that the scale is smaller and the elements that flow naturally from one another in the *locus amoenus* are rigidified in the different aspects of the garden.[424] Thus the babbling brook becomes a stone fountain, the birds are confined in an aviary, the groves are transformed into orchards whose trees are planted in straight lines, the grassy turf takes the place of the green meadow, the flowers are planted, the shade deliberate, and the garden specifically oriented to make it accessible to the most pleasant and healthful breezes.

Crescenzi's description of the pleasure garden uses terms that directly relate to the *locus amoenus*: he mentions it by name in describing the function of the pleasure garden in the context of the estate and uses the word *amoenus* to describe the flowers surrounding the turf-seat in the description of small gardens of herbs.[425] Crescenzi's gardens also contain many of the elements normally associated with the *locus amoenus* and the garden of love, such as the hair-like turf, shade, fresh air, flowers, trees, and birds. The fact that he describes the turf as hair-like (*capillariter*) is particularly interesting, since this is a conceit often

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[424] Thoss, p. 4.
[425] I, 7, 3; VIII, 1, 2.

employed in medieval poetry.[426] In addition, the turf-seats, bowers, and pergolas he explains how to construct are in a sense actualizations of the poetic conceits in pleasure garden and *locus amoenus* descriptions in which trees and other natural elements are likened to benches, roofs, and other architectonic elements.

In *The Life of Solitude*, Petrarch quotes Augustine, quoting Cyprian, on the reason why woods, fields, and streams are of great advantage to the solitary. In this passage, he describes a house of leaves that is reminiscent of Crescenzi's house of living trees:

> ...let us seek this abode. The adjoining solitude provides us with retreat, where the vines straying and drooping in pendulous coils as they crawl over the supporting reeds, form a portico with their shoots and a house of leaves.[427]

This house of leaves is a naturally occurring version of Crescenzi's house of living trees, just as the naturally occurring *locus amoenus* serves as the basis for the pleasure garden.

GARDENS OF LOVE IN THE MIDDLE AGES

Having traced the tradition in which medieval gardens of love are based, I will now turn to four specific examples

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[426] Thoss, p. 62.

[427] Francesco Petrarch, *The Life of Solitude*, trans. Jacob Zeitlin (Urbana, IL: University of Illinois Press, 1924), pp. 158-59. The original in Augustine is found in the *De Doctrina Christiana* 5. 14, quoting Cyprian in Epistles 1.

that were either previously existing well-known texts with which Crescenzi could have been familiar, or texts that were roughly contemporary with Crescenzi: Andreas Capellanus' *The Art of Courtly Love*, Guillaume de Lorris' *Roman de la Rose*, Gottfried von Strassburg's *Tristan*, and Guillaume de Machaut's *Remede de Fortune*. The final example is a particularly compelling case, because it describes a garden that actually existed and whose basic layout has been revealed with the aid of archeological evidence. Although scholars have been reluctant to compare Crescenzi's pleasure garden descriptions with literary precedents and have in some cases denied any connection between his pleasure garden and the garden of love, as I will show, many parallels can be drawn.[428]

Andreas Capellanus, *The Art of Courtly Love*

In the fifth dialogue of Andreas Capellanus' *The Art of Courtly Love* composed between 1170 and 1174, which dictates how a nobleman should court a noblewoman, the nobleman describes an allegorical garden of love. The garden is made up of three concentric circles. At the center of the garden is *Amoenitas*, or Delightfulness, which is surrounded first by *Humiditats*, and finally by *Siccitas*. While *Humiditas* and *Siccitas* are excessively wet and dry, respectively, *Amoenitas*

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[428] For an example of such a statement, see Calkins, p. 166.

has a perfectly temperate climate and represents a mean between these extremes. The entire garden is located in a beautiful meadow and surrounded by fruitful and fragrant trees. At the center of *Amoenitas* there is a tall tree with a spring issuing forth from its roots, conflating the tree of life and the fountain at the center of paradise. Brooks and rivulets that water the whole garden flow out from the fountain and the garden is outfitted with luxurious couches.[429]

Although this perfectly temperate and pleasant spot exemplifies the allegorical garden, it nevertheless shares some elements with the gardens Crescenzi describes.[430] It is surrounded by a meadow, enclosed by trees and has a central fountain. The emphasis placed on its temperate climate, moreover, corresponds to the doctrine of the four humors that underlies Crescenzi's treatise, wherein balances between extremes are sought, between wetness and dryness, heat and cold. The tree at the center of *Amoenitas* also shades the entire garden, unlike both *Humiditas* and *Siccitas*, which are completely exposed to the sun. While it might seem that these outer regions would render the delightful interior of

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[429] Andreas Capellanus, *The Art of Courtly Love*, trans. John Jay Parry (New York: Columbia University Press, 1941), pp. 78-9; for the original Latin, see Andreae Capellani Regii Francorum, *De Amore: Libri Tres*, E. Trojel, ed. (Munich: Wilhelm Fink Verlag, 1964), pp. 99-102.

[430] For a discussion of allegorical gardens, see Derek Pearsall, "Gardens as Symbol and Setting in Late Medieval Poetry," in *Medieval Gardens*, pp. 237-251.

the garden inaccessible, Capellanus notes that the path leading to *Amoenitas* is as pleasant and delightful as the garden itself. The extremes of heat, humidity, and aridity in the outer zones of the garden, in fact, represent precisely the types of regions Crescenzi advises estate owners to avoid, not only when laying out a garden, but when choosing a site for the entire estate. While for Crescenzi the need for a temperate and pleasant climate is connected to bodily health, for Capellanus it is directly related to the ability of a location to promote and encompass courtship and love. The Queen of Love presides over *Amoenitas*; it is her domain. In medieval medical books, health and love were closely linked. While unrequited love was thought to lead to poor health, sex, when practiced in moderation, was thought to have beneficial properties beyond procreation. The melancholy state engendered by unrequited love needed to be quelled by sex and as a staging ground for such amorous and therapeutic trysts, the salutary function of the garden is increased.[431]

Guillaume de Lorris, *Roman de la Rose*

Probably the most famous garden of late medieval romance poetry is the setting of the *Roman de la Rose*, begun by Guillaume de Lorris in the mid-thirteenth century and

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[431] For a discussion of the role of coitus in relieving illnesses and balancing the humors, see the chapter "Medicine and the Art of Love" in D. Jacquart and Claude Thomasset, *Sexuality and Medicine in the Middle Ages* (Princeton: Princeton University Press, 1985), pp. 87-138.

completed by Jean de Meun in the late thirteenth. The story opens with the protagonist walking through a landscape and coming upon a naturally occurring *locus amoenus* in the classical sense of the term: a clear stream issuing from a hill down into a meadowed valley. He washes his face in the stream and proceeds into the clear morning air. Having passed through this naturally occurring example of a pleasant dell, the protagonist arrives at the garden of *Deduit* or Delight and, after deciphering the allegories of virtue and vice painted on the outside of the wall, he enters the garden filled with singing birds, thinking himself in an earthly paradise.[432] Given the chance to explore the garden he finds a "completely straight, regular, square, [garden] as long as it was wide." It contains elements of an orchard filled with fruit bearing and non-fruit bearing trees and spices. Of the fruit-bearing trees there are at least one of each, except for those which are not beautiful enough. In addition to domesticated fruit trees, there are such ornamental trees as laurels, pines, olives, and cypresses, as well as branching elms and other trees particularly suited for creating shade. The trees are planted in rows allowing for the maximum amount of shade.

> The branches were long and high and, to keep the place from heat, were so thick above that the sun could not

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[432] Guillaume de Lorris and Jean de Meun, *The Romance of the Rose*, trans. Charles Dahlberg (Princeton: Princeton University Press, 1971), pp. 32-40.

> shine on the earth or harm the tender grass for even one hour.[433]

In addition to the innumerable types of trees, there are also deer, squirrels, and rabbits scampering through the garden, which is covered with a fine covering of green grass and dotted with fountains connected by brooks and channels. The thickness of the grass and the moisture of the earth render the grass so pleasant that it is identified as an appropriate place to entertain a mistress, it being as soft as a feather bed. Here again we see a natural garden element being compared to a product of human art, in this case a bed. In addition to the trees, fountains, grassy meadows, and delightful animals, the garden is covered with an abundance of flowers, whereby, "The earth was very artfully decorated and painted with flowers of various colors and sweetest perfumes."[434]

This garden becomes the stage for the interaction of allegorical figures of virtues and the subsequent capture and imprisonment of Fair Welcoming in the tower and contains many elements familiar from Crescenzi's work. The regularity of the rows of trees in the orchard is reminiscent of the garden for people of moderate means, which includes nearly all of the trees mentioned in the Roman.[435] It is significant,

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[433] Ibid, p. 48.
[434] Ibid, p. 49
[435] Many of the less exotic trees mentioned in the *Roman* such as laurel, pine, cedar, mulberry, apple, nutmeg, date, quince, pear,

moreover, that the poet chooses to specify at what distance the trees should be planted from one another to allow for the best and most pleasing shade, a surprisingly practical way of approaching an otherwise fantastical space. The thick grass, sweet-smelling flowers, and fountains recall the central elements of the small garden of herbs. The meadow, replete with brooks and channels, is also filled with scampering animals and singing birds like those found in the garden for kings and lords. Although a specific garden seat is not mentioned in the *Roman*, the comparison of the thick grass to a downy feather bed is reminiscent of the metamorphic qualities of Crescenzi's own garden features.

Gottfried von Strassburg, *Tristan*

The origin of the frustrated love affair between Tristan and Isolde begins with the amorous encounter of Rivalin and Blancheflor in the garden at Tintagel Castle when the court is assembled for a festival in honor of Mark, the lord of the castle. It is here that Tristan's parents meet and he is eventually conceived. In Gottfried von Strassburg's *Tristan* of the thirteenth century, the garden, decked out by a "charming gentle spring" in the "fairest meadows that eyes had ever seen," is filled with wood birds whose songs are a delight to the ears. Gottfried emphasizes the way in which each garden delight entertains a different sense. The eye is

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chestnut, medlar, plum, cherry, sorb-apple, service berry, and hazelnut are all found in Crescenzi's book on trees.

pleased by flowers, grasses, leaves, and blossoms which, in pleasing the eye, gladden the heart. The beautiful garden elements at Tintagel Castle interact with the eyes of the guests, engaging them in a series of exchanged projections.

> The bright flowers smiled up from the dew grass. May's friend the greensward had donned a summer smock of flowers so lovely that they shone again from the dear guests' eyes. The delightful blossom on the trees smiled out at one so pleasantly that one's hearts and all one's soul went out to it through eyes that shone, and gave back all smiles.[436]

After describing the beautiful flowers, trees, and meadows, Gottfried turns to the encampment where the guests were housed, each according to the pleasures granted them by their station.

> There in great joy and merriment this company were lodged on the greensward, each according to his whim. As his hope of pleasure prompted him, so was each encamped. The princely camped in princely, the courtly in courtly, fashion: some were encamped under silk here, others elsewhere beneath blossoms. Lime-trees sheltered many: many were lodged in arbors made of boughs of leafy green. Neither household nor guests had ever been lodged so delightfully.[437]

Gottfried's garden, again, repeats many of the elements found in Crescenzi's gardens: the birds, the meadow, the fountains, and their pleasing effect on sight and hearing. Gottfried also describes pergolas and other arboreal structures that are reminiscent of those Crescenzi explains how to construct in chapters three and four. One aspect of

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[436] Gottfried von Strassburg, *Tristan*, trans. Arthur Thomas Hatto (Harmondsworth: Penguin Books, 1960), pp. 48-49.
[437] Ibid, p. 49.

garden spaces Gottfried considers that is not explicitly stated in *The Art of Love* and the *Roman de la Rose* is the degree to which they are tailored not only to different tasks, but to different social groups.

The Park of Hesdin

Although the Park of Hesdin was located in the northwest of France out of Crescenzi's immediate geographical sphere, it is one of the few medieval pleasure gardens that existed during Crescenzi's lifetime for which we have archeological and archival evidence.[438] It was begun by Count Robert II of Artois around 1295 and carried on after his death in 1305 by his daughter, the Countess Mahaut of Artois. The park remained in existence until its destruction in the mid sixteenth century.[439] Hesdin was probably best known for its mechanical marvels, which Guillaume de Machaut describes in the *Remede de Fortune*, completed in the mid-fourteenth century. Having recently left behind his lady and wandering

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[438] See Ch. Petit, "Vieil-Hesdin: l'exploration archéologique d'une ville disparue," *Revue du Nord* 59 (1977): 545-566; and J. Lestocquoy, "Les origines d'Hesdin-le-vieux," *Revue du Nord* 32 (1950): 94-104. For the most recent reconstruction of the park and critique of the literature on Hesdin, see A. Van Buren, "Reality and Literary Romance in the Park of Hesdin," in *Medieval Gardens,* ed. Elisabeth Macdougall, pp. 125-129.

[439] There is a modest amount of literature on Hesdin, much of which revolves around the source for its automata and fountains. Marguerite Chargeat, "Le Parc Hesdin. Creation Monumentale du XIIIe Siecle. Ses Origines Arabes, " *Société de l'histoire de l'art français, Bulletin* (1950): 94; Michel Brunet, "Le Parc d'Attractions des Ducs de Bourgogne a Hesdin," *Gazette des Beaux-Arts* 78 (December 1971): 331-339. For another description of the automata at Hesdin, see, M.Sherwood, "Magical Mechanics and Medieval Fiction," *Studies in Philology* XIIV (1947): 587-591.

around in search of answers to the woes of love, the protagonist of the *Remede* stumbles upon the Park of Hesdin:

> I went along thus for a while, ever lost in my thoughts, until I saw a very beautiful garden called the Park of Hesdin. Then I headed straight for it and didn't stop until I'd come there; but I couldn't enter in because it was surrounded and enclosed by high walls, and the road was not open to one and all. Nonetheless I followed the paths and trails I saw before me until I reached a closed gate, which was beautifully and nobly situated in a remote spot, far from people. I raised the latch of a small wicket; and after I'd lifted it, I went in...And when I'd succeeded in entering and found myself all alone, I bolted the lock on the wicket. I walked along among the plantings, which were more beautiful than any I'd ever seen, nor will I ever see any so beautiful, so fair, so agreeable, so pleasing, or so delightful. And I could never describe the marvels (*merveilles*), the delights, the artifices (*ars*), the automata (*engins*), the watercourses, the entertainments, the wondrous things (*estranges choses*) that were enclosed within. Nonetheless I can well say that one could not seek any diversion in the air, the water, or on land that he'd not find there immediately, always ready to answer his wish.[440]

Archeologists have provided enough evidence for scholars to propose a possible layout for the park of Hesdin. Coupled with Machaut's description, many similarities between Hesdin and the gardens of royalty described in the *Liber ruralium commodorum* can be found.

The Park at Hesdin was divided into three main sections and enclosed by a wall with five entrance gates.(fig. 10) The castle, as recommended by Crescenzi, was located in the southern portion of the park. The surrounding area included

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[440] Guillaume de Machaut, *Le Jugement du roy de Behaigne and Remede de Fortune*, ed. J. Wimsatt and W, Kibler (Athens, GA: University of Georgia Press, 1988) lines 783-823, pp. 214-217

orchards, a fish pond, a menagerie just outside the wall, and a small paradise garden known as "li petit paradis" directly accessible by steps from Robert II's apartments, much like the one Crescenzi recommends building in the vicinity of the main house. The central section was dominated by game-filled hills, pastures, and woods crossed by paths connecting the southern and northern portions of the park, reminding one of Crescenzi's advice on the strategic placement of trees for the pleasure of observing wildlife. The northern section was known as "li Marés" because of the marshy river valley in which it lay. It included a small enclosed garden with a tower inside evoking the tower in the *Roman de la Rose*. This section also included the "pavilion dou Marés" that contained the automata and mechanical marvels for which the park was so famous. These devices evidently included water-spouting gilded birds, and wooden heads of a boar and a stag outfitted with plumbing that would soak the guests when certain knobs were pushed.[441] The small bridge leading to the pavilion was adorned with the "singes du pavilion", marionettes of monkeys covered in fur that would wave at the passers-by.[442]

In addition to the obvious connections between the layout of the park at Hesdin and Crescenzi's garden for kings and lords, the emphasis Machaut places on the marvelous and the miraculous is paralleled in the Book Eight. The pleasure

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[441] Sherwood: 589-590.
[442] Van Buren, pp. 119-121.

gardens Crescenzi describes do not include mechanical devices. The miraculous and wondrous aspects of the garden, by contrast, are to be found in grafting and other experiments in which plants are transformed into something other than their original state. The function of the pavillion that contains the mechanical devices at Hesdin finds a parallel in the *palatium speciosum*, where the king and queen can escape from their important duties to be refreshed and renewed.[443] The implication at the end of Machaut's passage is that, by assembling all natural elements, Hesdin approached the complete perfection of Paradise. As has been shown above, Crescenzi's estate also sought to achieve such completeness.

III. THE AESTHETICS OF CRESCENZI'S PLEASURE GARDEN

As we have seen, Crescenzi does not refer directly to literary garden tropes, and yet a closer examination of his text shows that the pleasure gardens he describes have much in common with these tropes. Similarly, when he describes the gardens and their effect on those who enter them, Crescenzi does not employ a vocabulary that is overtly aesthetic. This is related to the fact that an aesthetic language as it was developed in the eighteenth century did not exist in the period during which he was writing, because

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[443] VIII, 3, 2-3.

the concept of fine art on which the eighteenth-century notion of aesthetics was based was not yet fully developed.[444] It is true that aesthetic writing in the middle ages was not of the disinterested variety that we have come to associate with the modern definition of the word, influenced as it was by Immanuel Kant's observations on aesthetics in *The Critique of Judgment*, but that does not mean that it is inappropriate to discuss medieval art from the point of view of aesthetics. Scholars have long since disproven the notion that the function of art in the middle ages was purely didactic and anti-sensual. It has been shown, moreover, that a vocabulary for discussing the formal properties of works of existed. Aesthetic writing, however, was buried in polemical texts warning against the dangerous allure of art,[445] while other examples are found in theological writings.[446] As I will show, aesthetic writing can also be found in such practical texts as Crescenzi's, especially when they concern the interconnectedness of sensory perception and mental and physical health. It is important, however, to utilize a different notion of what the aesthetic meant.

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[444] See the previous chapter.

[445] For the best example of this argument, see Meyer Schapiro, "On the Aesthetic Attitude in Romanesque Art," in *Romanesque Art* (New York: Thames and Hudson, 1977), pp. 6-10`.

[446] For the most complete collection of medieval aesthetic writings, see Edgar de Bruyne's 3 Volume *Etude Esthetiques medievale* (Geneva: Slatkine Reprints, 1975). There is also an excellent book summarizing the main ideas contained in the collection: Edgar de Bruyne, *The Aesthetics of the Middle Ages,* transl. Eileen B. Hennessy (New York: F. Ungar Publishing Co., 1969).

What many scholars writing on medieval aesthetics have done is to return to the etymology of the term. The Greek word αεστηετικοσ(*aisthetikos)* literally means things perceptible to the senses. Its opposite, νοητικοσ(*noetikos)*, means things perceptible to the mind, which is related to the Greek word for mind, νουσ (*nous*).[447] The meaning of aesthetic, therefore, may be understood as related to perception by sense and feeling, as opposed to an intellectual mind-dependant process of knowledge or understanding. Although medieval thinkers were in many ways more concerned with the spiritual world that lay outside of the realm of the senses, which was more connected to knowledge and mind, there was at the same time an acknowledgement of the fact that the spiritual, heavenly realm could only be approached through the outward appearance of things in the earthly realm. The world itself was viewed as a universal allegory that was ornamented and animated by the incomprehensible forces of the divine, whereby the sensually perceptible things of this world took on the function of being a conduit to the heavenly realm. This allegorical relationship could be discerned by the principle of concordance, which has been described as *aesthetic* because of the way in which it demands an interplay

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[447] See the entry on "aesthetic,"in *The Oxford English Dictionary*, Vol. I, 2nd Ed. (Oxford, 1989), p. 206.

between the sensual and spiritual or intellectual realms.[448] It could be argued, therefore, that the medieval approach to the world was fundamentally aesthetic, since the spiritual realm required the sensual, earthly realm to be achieved.

In addition to establishing the aesthetic foundation of medieval thought, these studies have made it possible to establish a basic taxonomy of what medieval writers on art and beauty considered beautiful and pleasing to the senses.[449] Among these are the notion of harmony and proportion, which was often related to music and the harmony of the spheres.[450] The belief existed that an outer harmony and proportion reflected both an inner and an outward beauty.[451] A closely related concept is that of the mean, wherein the beautiful is by definition not extreme but moderate and pleasing to the senses because it does not shock but soothe. The mean plays into the idea of suitability, wherein beautiful objects are those which are best suited to the function they are intended to fulfill.[452] This aspect of medieval aesthetics probably originated in Horace's dictum that the best art should both please and delight. One of the most important elements of the aesthetic point of view was related to light and by

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[448] See U. Eco, *Art and Beauty in the Middle Ages*, transl. Hugh Bredin (New Haven: Yale University Press, 1986), Chapter Five, pp. 52-64.

[449] To fully explore the relationship between Crescenzi's treatise and medieval aesthetics would require at least one more chapter to parallel my discussion of the definition of art.

[450] See Eco, pp. 28-42.

[451] See De Bruyne, p. 24.

[452] Ibid, p. 11.

extension to color. Vision was considered primary in the hierarchy of the senses because it was the most mind-like sense.[453] Because it was so mind-like, the sense of sight was directly related with the desire to know, whereby sight had a heuretic, or inventive, function as it simultaneously combines and differentiates, revealing the false and the true, respectively.[454] Since light and color appealed most directly to vision, they were also considered to provide the highest form of aesthetic experience.

Examples of these ideals of beauty can be found throughout Crescenzi's description of the pleasure garden and throughout the entire treatise. He begins his treatise by stating that the ability to distinguish between good and bad - what he calls the "virtue of prudence" - makes it possible for human beings to know the difference between utility and delight.[455] Crescenzi thereby acknowledges the connection between the good and the beautiful, or pleasurable, by comparing the ability to make moral judgments with the ability to make aesthetic ones. Issues of harmony and proportion are addressed most directly in references to he arrangement of trees in orderly rows. The notion of harmony, however, is also expressed in the need to balance the

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[453] Ibid, p. 121.
[454] Summers, pp. 32-41.
[455] Prologus, 1: "Cum ex virtute prudentiae, quae inter bonum et malum caute discernit, humanus informetur animus ad utilis et delectabilis cognitionem…"

humors.[456] An interest in proportion is seen in Crescenzi's descriptions of horses and falcons, whose perfect outer proportions he says are indicative of the inner health and strength of the animals.

The importance of the mean is found in many instances throughout Crescenzi's text, from the importance of locating the estate and the garden in a temperate climate, to the way in which he praises the color green in the description of the small garden of herbs, which is also called a *viridarium* or a green place. Green has an allegorical significance, as a sign of eternal spring and eternal life. But, according to Aristotle, green also represents a mean between black and white and is therefore the color most pleasing to the eye.[457] Such a mean, arrived at and determined by sense, is therefore the most adequate to human sensation, the best able to please, and, one might argue, the best able to convey meaning. The suitability of the color green to the senses also reveals how Crescenzi deals with color and emphasizes the importance of pleasing the sense of sight, which is also satisfied by flowering plants in the small garden of herbs.

Although these aesthetic terms and categories can be applied to Crescenzi's pleasure garden and estate, to do so

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[456] For a discussion of the relationship between inner health and outer beauty in the medieval aesthetic attitude, see De Bruyne, p. 24.
[457] For Aristotle's discussion of color, see his *Parva Naturalia*, transl. W.S. Hett (Cambridge, MA: Harvard University Press, 1936) p. 245; see also Eco, p. 46.

exclusively ignores the important differences between gardens and other works of art. Much as a work of painting and can elevate the viewer to spiritual thoughts, the garden can – as we have seen above – evoke associations of paradise and the Golden Age. Painting and sculpture, however, are primarily visual, which is the focus of much medieval aesthetic writing. The garden, by contrast, has the potential to appeal to all of the senses. In its multi-sensual appeal, the garden also runs the risk of being excessively pleasing. The sense of sight may have been considered high and mind-like, but the same did not apply to the remaining senses. Gardens, therefore, like certain forms of literature intended for pure entertainment, needed another justification.[458] This justification can be found in the importance placed upon the beneficial effects of gardens upon the health of their users. Unlike the aesthetic paradigm whereby the appreciation of beauty is justified because of its ability to convey a higher meaning, this justification is best summed up in the concept of *delectatio*, or delight. Delight, which is invoked at many places throughout Crescenzi's treatise, is able to restore and revive the mind. In doing so, delight incorporates both pleasure and profit in that the king who delights in the garden is able to be renewed in it so that he may better

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[458] In her book on *Literature as Recreation in the Later Middle Ages*. (Ithaca, NY: Cornell University Press, 1982) Glending Olson has identified this as the hygenic justification.

attend to his duties and responsibilities. Delight can have this function because of the manner in which it can relieve the effect of bad humors on the body.

This interconnection between mind and body can be traced back to the psychological implications of Aristotle's thought, which had a great influence on Avicenna and, ultimately, on Crescenzi. Thus when the mind is entertained and refreshed by the reading of literature, the viewing of paintings, or strolling in gardens, the health of the body is strengthened. Just as the mind is refreshed by entertaining and delightful sights, so too the body is refreshed by engaging in recreative activities, such as dancing, hunting, or walking. These activities provide respite from labor and cares, which in turn make it possible for people to better fulfill their duties. For the same reason that beauty did not exist for its own sake, pleasure required an added justification.

In the pleasure gardens Crescenzi describes, nature is transformed into art by various means, all the while retaining its natural forms and features. These gardens and the elements they contain have the potential to be viewed as allusions to literary, religious, and mythological themes. At the same time, they are themselves what they represent. No matter how many symbolic associations a tree may evoke, for example, in the end, a tree is a tree. A tree's value

can be symbolic, functional, nutritive, or medicinal. It can be a marker of elevated social status, or of wage labor. While some of these values, markers, and symbolic meanings are mutually exclusive, others co-exist and even reinforce one another. In the small garden of herbs Crescenzi describes, a tree can be planted in such a way that it conjures up associations with the tree of life and hence with the Garden of Eden; even so, its function is to provide shade. Symbol and function are mutually reinforcing, since the function of shade is to restore and refresh the occupants of the garden, making concrete the association of the Garden of Eden with health and renewal. But all trees are not of equal symbolic and functional value and these often shift depending on the location of a tree. In the small garden of herbs, trees may provide shade, but are not expected to yield fruit as this would interfere with the restorative features of the turf. In an orchard a tree is expected to yield fruit. Around the perimeter of an estate, groups of trees may be used to create a phalanx-like wall. Here they protect not against heat, but against intruders. When trees are planted in and around fields, the shade so coveted in the pleasure garden must be controlled to protect the fertility of the fields. In vineyards, trees are used as stakes to which vines are wedded. The fruit of trees may be eaten for their sweet taste, but they are also used to make medicine. The tree, finally, is indicative of the person who planted it

and tends it, a person who is of a different social class and status than the one who basks in its shade. Its meaning shifts depending on its location in the garden and on the situatedness of the person experiencing it.

This fusion not only of form and function, but also of function and meaning, dictates the experience and interpretation of gardens and hence the linguistic paradigm often applied in the interpretation of works of art is an inadequate means of attempting to understand the mechanisms of representation at work in the garden.[459] Furthermore, the elements of which gardens are created are in fact themselves what they represent, which goes against the basic definition of the semiotic sign, that it be non-identical with itself.[460] The garden, like Gombrich's hobby horse, is a substitution, not an imitation or symbol of the Edenic garden and its offspring: the *hortus conclusus*, the garden of love, and the *locus amoenus*. In the absence of the existence of an Eden in the world, it is recreated or replaced by the pleasure garden. The form of the garden is determined primarily by its function and the limitations set by soil conditions, terrain, climate, and the means of the owner, among others. Its form is dictated secondarily by its ability to evoke

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[459] For a convincing argument against employing a linguistic paradigm in the theoretical understanding of gardens, see Mara Miller, *The Garden as an Art* (Albany: State University of New York Press), 1993, pp. 3-5.

[460] Tzetvan Todorov, *Theories of the Symbol*, trans. Catherine Porter (Ithaca: Cornell University Press, 1982), p. 36.

associations with tropological and literary precedents, whose meanings are intimately connected to the function of the garden. Every garden is an instantiation of and a substitution for the literary, religious, and biblical gardens it evokes. Such an approach, dictated by function rather than form, makes it possible to reconcile the actuality of the garden with its symbolical meaning without either abstracting the garden completely into the realm of art or reducing the garden to its functional and physical reality.[461]

The functional aspect of the garden and the production of meaning in the garden are dependant upon its sensual or aesthetic properties. Gardens, unlike other works of art, implicate the viewer entirely, from an intellectual, sensual, and physical point of view. The physical engagement with a garden begins upon entering it and unfolds as one moves through it.[462] Intellectually, the viewer can be engaged by

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[461] This argument is inspired by David Summers' reading of Ernst Gombrich's "Meditations on a Hobby Horse" in "This is not a Sign; Some Remarks on Art and Semiotics," *Art Criticism* 3 (1986): pp. 30-44. Although Summers and Gombrich are both dealing with the problem of optical vs. conceptual images, the concepts of subsitution and "real metaphor" are useful in coming to terms with the peculiar way in which gardens are representations of the idea of the garden while being actual gardens. Substitution is in many ways a more effective term than "real metaphor," however, since metaphor implies replacement or transference and the garden is filled with items that are themselves what they represent. What is particularly significant about Gombrich's and Summers' approaches to works of art is that they downplay the importance of formal analysis in favor of what could be termed a functional analysis; rather than begin with form, they begin with function as a means of understanding a work of art.

[462] For a discussion of the physical effect and presence of gardens, see Miller, pp. 3-5.

the associative force of gardens, by their power to evoke associations with literature, religion, and memories of other landscapes and garden spaces. The level of intellectual engagement with a garden, however, is limited by the education and experience of the person who visits it. One not schooled in the classics, for example, would never think to associate a pleasant meadow or clearing with the Elysian Fields. The sensual and physical engagement with a garden, however, is more universal. Even a blind person can appreciate the sounds and smells of a garden, without being able to experience its visual aspects.

The universality of the sensual and physical pleasure afforded by the garden must, however, be qualified. The gardener or laborer, for example, will experience the beauties of a garden much differently than the king and queen, for whom the garden is a space of delight and mental and physical renewal. We can only hope that the gardener may have taken some delight in his labors, but it seems more likely that his job was filled with drudgery that would have precluded him from being able to experience the same mental relief from the garden as the king and queen. Crescenzi does not deal with this problem explicitly, although his statement about the function of the treatise being to console and delight the king and to be useful to his subjects suggests an awareness of the social implications of the pleasure garden, insofar as the treatise and the estate it describes could be

conceived as a pleasure garden writ large. The king orders the construction of the garden as a place to stage his recreative activities; the gardener labors in the garden, which makes the king's activities possible. Thus the pleasure garden, in addition to being filled with marvels and delights, has the function of constituting the social position of the people who use it, the workers who work it, and those who are excluded from it.

CONCLUSION

The frontispiece of the 1495 edition of the *Liber ruralium commodorum*, printed in Italian in Venice, shows the main courtyard of an agricultural estate. (fig. 11) The main area is surrounded by a wattled fence with trees growing out of it. The main gate, which is open, is adorned with an image of the Annunciation and an unidentifiable saint. Perched on the main gate is a peacock, a symbol of eternal life often seen on the roof of the manger in fifteenth-century depictions of the Nativity. To the left of the main entrance a woman is shown holding a spindle in front of a small house with a scythe hanging above the door. Chickens peck at the ground near a fountain adjacent to the humble dwelling. To the right of the main gate is an oven guarded by a large dog. The back of the courtyard is flanked by a more substantial wall that is attached to a large house with crenellations and a tower. The main house is emblazoned with some sort of a crest. In front of the house a couple, noble in appearance, greet each other; the man's horse is tied to the wall, making it seem as if he has just arrived. Beyond the enclosed courtyard, on the left, is a large dovecote with many birds flying around it. The space to the right of the main house is more difficult to identify. It could be a vineyard, but could just as well be a small garden of herbs -

like the one Crescenzi recommends placing in the vicinity of the main house - with shady trees and an impressive pergola. In the upper right hand corner of the picture is a personification of a wind blowing healthful, fresh air over the peaceful scene.

The visual summation of Crescenzi's treatise is obviously a projection that embellishes upon its actual contents, but it is also an interesting commentary on how the treatise was viewed in the fifteenth century and how this view relates to the medieval conception of gardens. In this picture we recognize, in abbreviated form, the division of the estate into the place of the laborer and worker, represented by the woman seated in front of the humble dwelling, and the place of the master, represented by the noble couple in front of the grand dwelling that dominates the courtyard and the entire picture. The paradisical implications of the estate Crescenzi describes are addressed in the religious images on the gate. The Annunciation is a particularly relevant image, because images of the Annunciation are often set in small gardens that allude to the *hortus conclusus* and Mary's chastity.[463] Here we see the estate being equated with a smaller garden space and the pleasure garden, insofar as the *hortus conclusus* is the

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[463] Daley, pp. 267-278.

obverse of the garden of love, presided over by Venus, Mary's antetype.

The garden of love is concretely shown in the illustration accompanying Book Eight of the same Venetian edition. (fig. 12) This small garden is enclosed by a low wall and culminates in an elaborate fountain placed in the niche of a pergola constructed of living trees. At the center of the garden, on a grassy turf, stands a noblewoman holding a flower who is being serenaded by a young man seated on a wall and playing a lute. On either side of the garden space are small beds planted in orderly rows and bounded by low fences. A rabbit is shown rooting around in the soil; a symbol of fertility, a rabbit is an appropriate animal to show in the garden of love. One likes to imagine that the pleasure garden shown here is the one located to the right of the main courtyard of the estate in the frontispiece and that the man and woman in the pleasure garden are the same couple standing in front of the main house.

These images are roughly contemporary with Leonardo's statements on and drawings of gardens and garden structures, such as the elevated garden in his design for an ideal town, (fig. 1) his studies for interwoven garden walls, (fig. 2) and his designs for the gardens of the Palace at Romorantin. (fig. 3) Viewed in conjunction with Leonardo's statements on gardens, these drawings provide a clue into how Leonardo may have utilized the ideas found in Crescenzi's treatise,

especially since it was the only existing book on agriculture and gardens to deal so thoroughly with the function and creation of pleasure gardens.

In many of these drawings it is possible to recognize correspondences between Leonardo's drawings and Crescenzi's recommendations. In the ideal town design, Leonardo designates the arcaded walkways and gardens for the use of gentlemen.[464] (fig. 1) These walkways give wealthy city dwellers a chance to refresh their senses and recuperate in preparation for their duties and obligations. They are reminiscent of the elevated walkways Crescenzi recommends constructing entirely out of trees, but instead of having to go the country as the king and his entourage must, the denizens of Leonardo's ideal town need not go far to enjoy the recreation afforded by such gardens and walkways. This type of elevated garden became an integral part of Renaissance garden design, most famously in the Belvedere of the Vatican. Located directly across from the Papal apartments with views onto the main courtyard, the original function of the Vatican Belvedere was to provide a retreat for the ailing Pope Innocent VIII so that he could better perform his important duties.[465]

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[464] Emboden, p. 48.

[465] For a discussion of the function of the Vatican Belvedere, see David Coffin, *The Villa in the Life of Renaissance Rome* (Princeton, NJ: Princeton University Press, 1979), pp. 80-87.

The drawings of interwoven garden walls, which were probably originally intended for the Medici Palace, take a slightly different approach to Crescenzi's suggested garden structures. (fig. 2) Rather than being constructed of living trees, Leonardo fuses natural and artificial elements to create his own version of what Crescenzi calls a *solarium*, whose shading function is very much like a *loggia*. The advantage of using columns instead of trees is that the proprietor need not wait for the trees to grow into the desired shape, although Leonardo does describe a process whereby trees are grown in such a way as to create walls.

> Many trees planted in such a way as to touch, by the second year will have learnt how to dispense with the bark which grows between them and become grafted together; and by this method you will make the walls of the garden continuous, and in four years you will have very wide boards.[466]

In the designs for the Palace at Romorantin, Leonardo recommends that similar structures be used to create a pergola enclosing a meadow courtyard.[467] (fig. 3)

To delve deeply into Leonardo's garden designs is far beyond the scope of the present study, but even a brief treatment of the subject shows how his conception of gardens parallels some of the ideas presented in Crescenzi's treatise. In addition to the horticultural information it contains, I would like to suggest that the treatise would

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[466] C.A. 76 r.a., quoted in MacCurdy, p. 299.
[467] Emboden, p. 65.

also have appealed to Leonardo's interest in science and technology. The *Liber ruralium commodorum* was written at a time when scientific discoveries were not made in the abstract realm of the natural sciences as they would following the "Scientific Revolution" of the seventeenth century. Such discoveries, rather, were made in the context of the practical application of technology.[468] Crescenzi, for example, makes scientific observations about plant and animal life in the context of a practical treatise on agriculture. The technological advances made in the middle ages continued to play an important role throughout the Renaissance. Leonardo's imaginative inventions, in fact, could be considered a continuation of the late medieval obsession with technology. From this perspective, Leonardo and Crescenzi were both participating in the advancement of science. After the Scientific Revolution, however, which initiated the great divide between science and art, the role of technological advances changed. They were relegated to the practical realm and thereby excluded from the higher realm of science.

As far removed as the pleasure garden may seem from such lofty considerations as the history of science and technology, one of the main purposes of this dissertation has been to show how integral the pleasure garden is to

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[468] See, Frances and Joseph Gies, *Cathedral, Forge, and Waterwheel: Technology and Invention in the Middle Ages* (New York: Harper Collins Publisher, 1994); and Jean Gimpel, *The Medieval Machine: The Industrial Revolution in the Middle Ages* (London: Penguin Books, 1977).

Crescenzi's agricultural concerns, which simultaneously have political, social, and intellectual implications. From a political perspective, the agricultural estate and the pleasure garden are conceived as alternatives to urban life and its discontents. At the same time, the estate and the garden reinforce the values of the city by providing a place of physical and spiritual renewal for the class of people who run the cities. The pleasure garden and the estate as a whole also make it possible to delineate social relationships, espeically in the emphasis placed on exclusion within the estate and the implications this has for experiencing the garden either as a space of work or of leisure. This social division of the estate along the lines of labor ties into the manner in which Crescenzi's conception of the pleasure garden coincides with the changing definition of the mechanical arts, without which the garden would be impossible. The social distinctions made between the practitioners of the liberal and the mechanical arts parallels the distinction between those from whom Crescenzi's treatise provides "consolation and delight of [the] soul" as opposed to those for whom it provides "perpetual use,"[469] the master and the rustics, respectively. The ability to appreciate the beauty of the pleasure garden, finally, can be

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[469] Epistual missa ad Karolum regem secundem, 2: "..afferentem consolationem et delectationem animo Vestro et perpetual utilitatem subiectis Vestris.."

connected to the belief, rooted in Aristotelian thought, that there is much consolation and delight to be found in the earthly realm, without which the heavenly realm would be inconceivable and inaccessible. In their pleasure gardens, Crescenzi and his Renaissance heirs constructed ideal spaces, which, in striving to recreate an Edenic world without art, without strife, and without social distinctions, provide an unobstructed view into the imperfect world outside the garden walls.

ILLUSTRATIONS

1. MS B 16r. Arcaded town designed by Leonardo.
2. C.A. 37 v-a. Studies for interwoven garden walls.
3. C.A. 76 v-b. Leonardo's project for the Palace at Romorantin
4. R.L. 12418. *Lilium Candidum*.
5. Piero de'Crescenzi, *Livre des proffits ruraux,* VIII, New York, Pierpont Morgan Library.
6. Vat. lat. 1529, 60r. *Liber ruralium commodorum*, VIII.
7. Detail from the *Allegory of Good and Bad Government*.
8. God the Father from the *Bible Moralisée*.
9. Emilia in her Garden, *Livre du Cuer d'Amours espris*, France, ca. 1465.
10. Park of Hesdin, reconstruction by Anne Hagopian van Buren.
11. Piero de'Crescenzi, *Il libro della agricoltura*, frontispiece (Venice, 1495), Dumbarton Oaks Research Library and Collection, Washington, D.C.
12. Pleasure Garden.Piero de'Crescenzi, *Il libro della agricoltura*, Book VIII (Venice, 1495), Dumbarton Oaks Research Library and Collection, Washington, D.C.

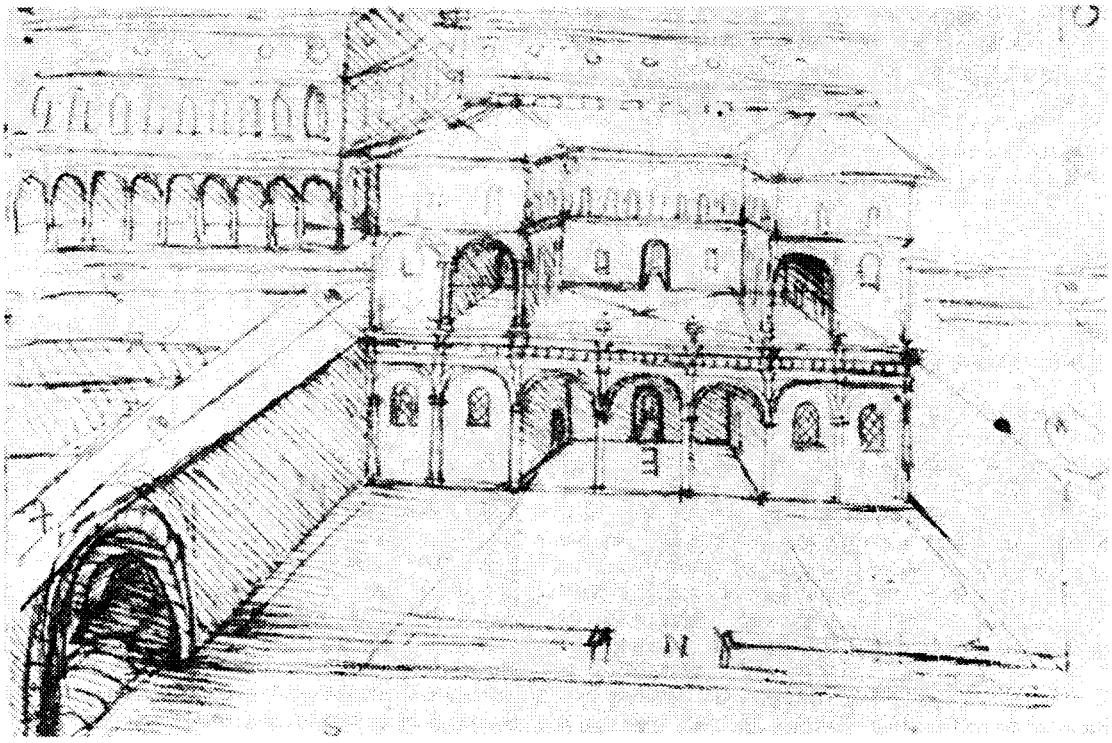
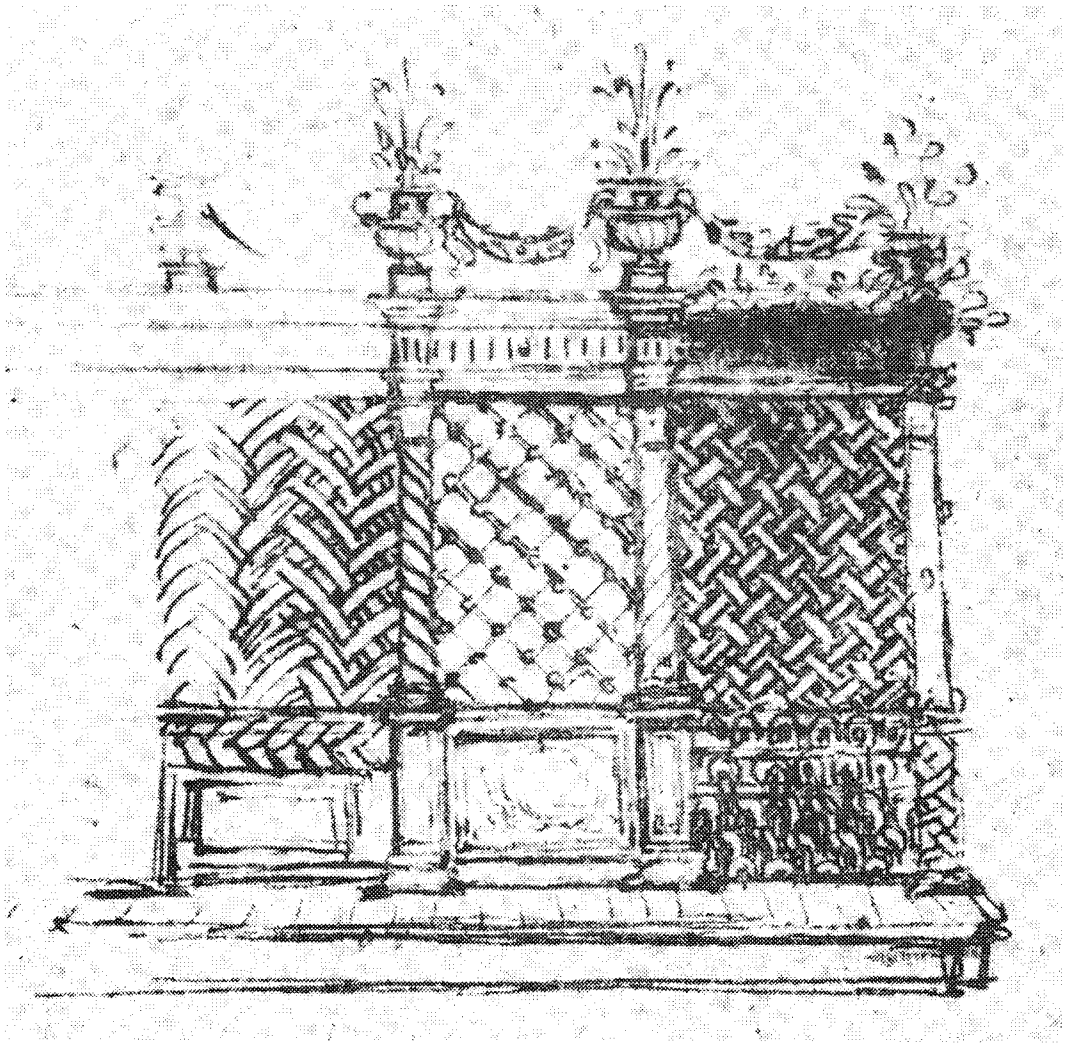


Figure 1



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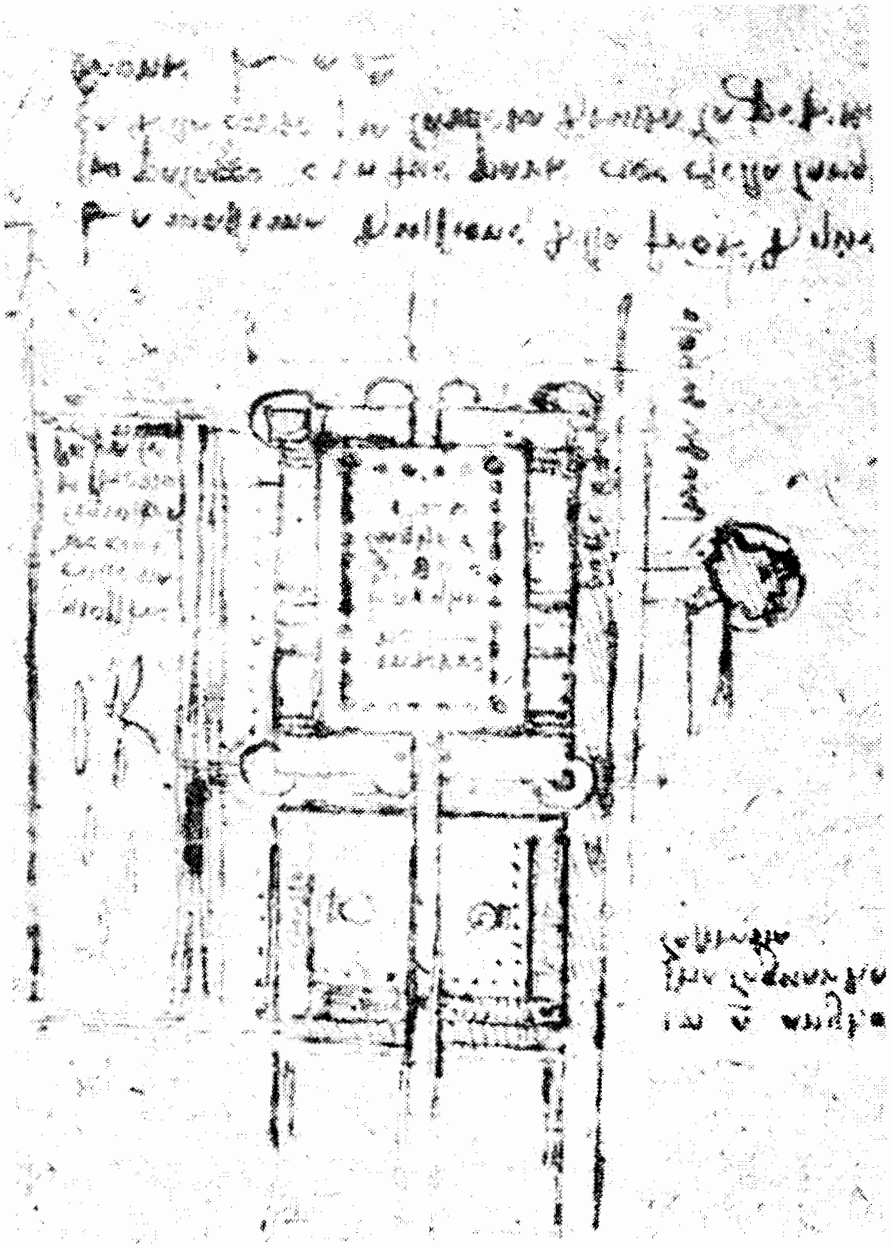

Figure 3

Figure 4

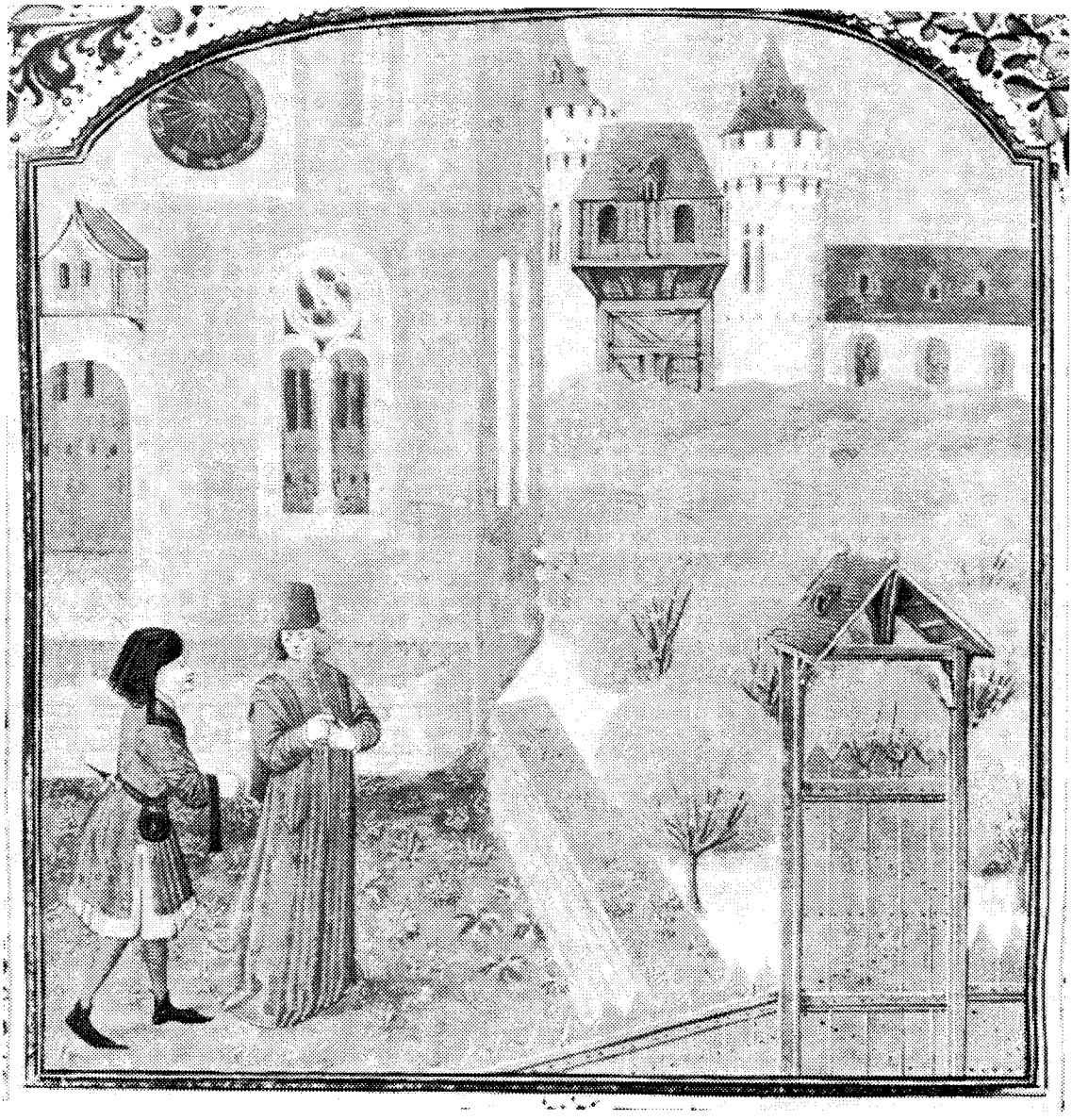

Figure 5

Figure 6

Figure 7

Figure 8

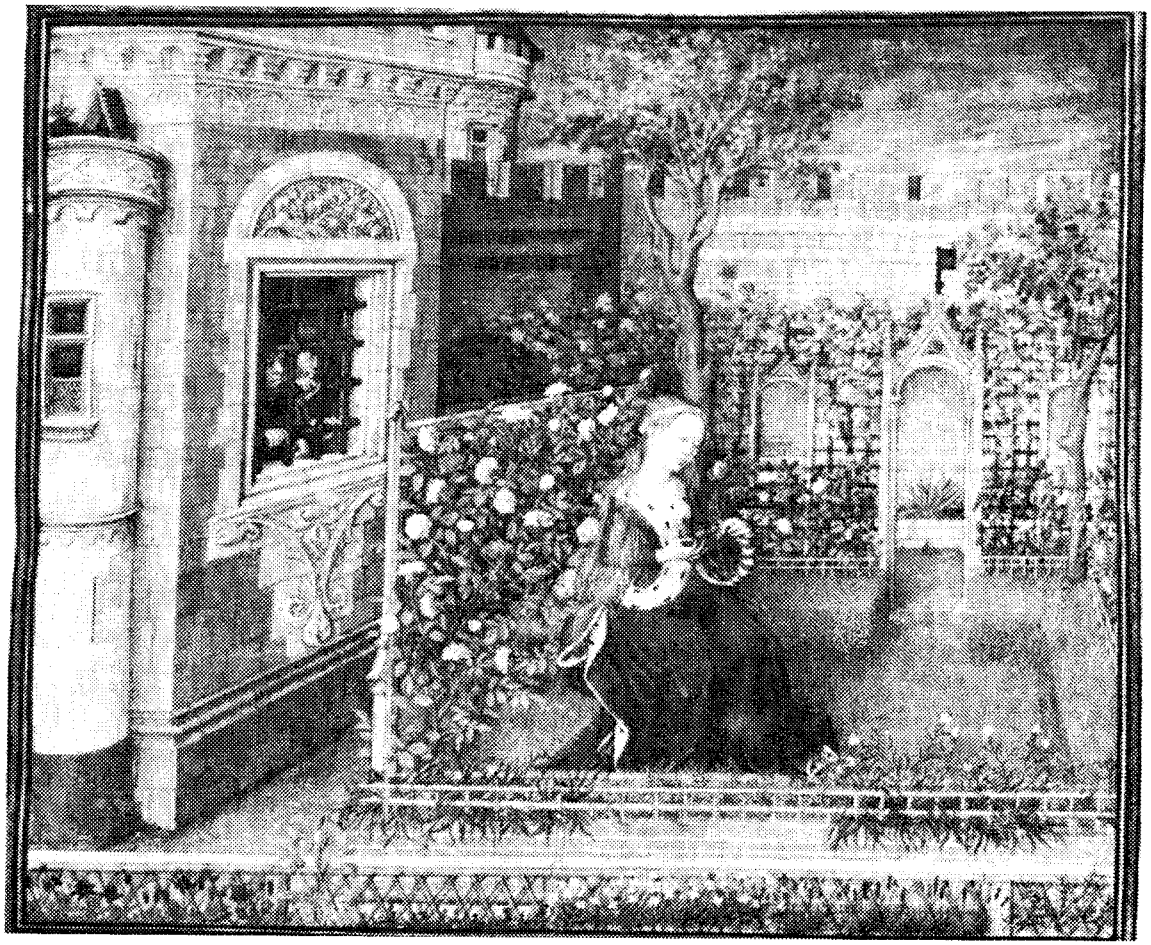

Figure 9

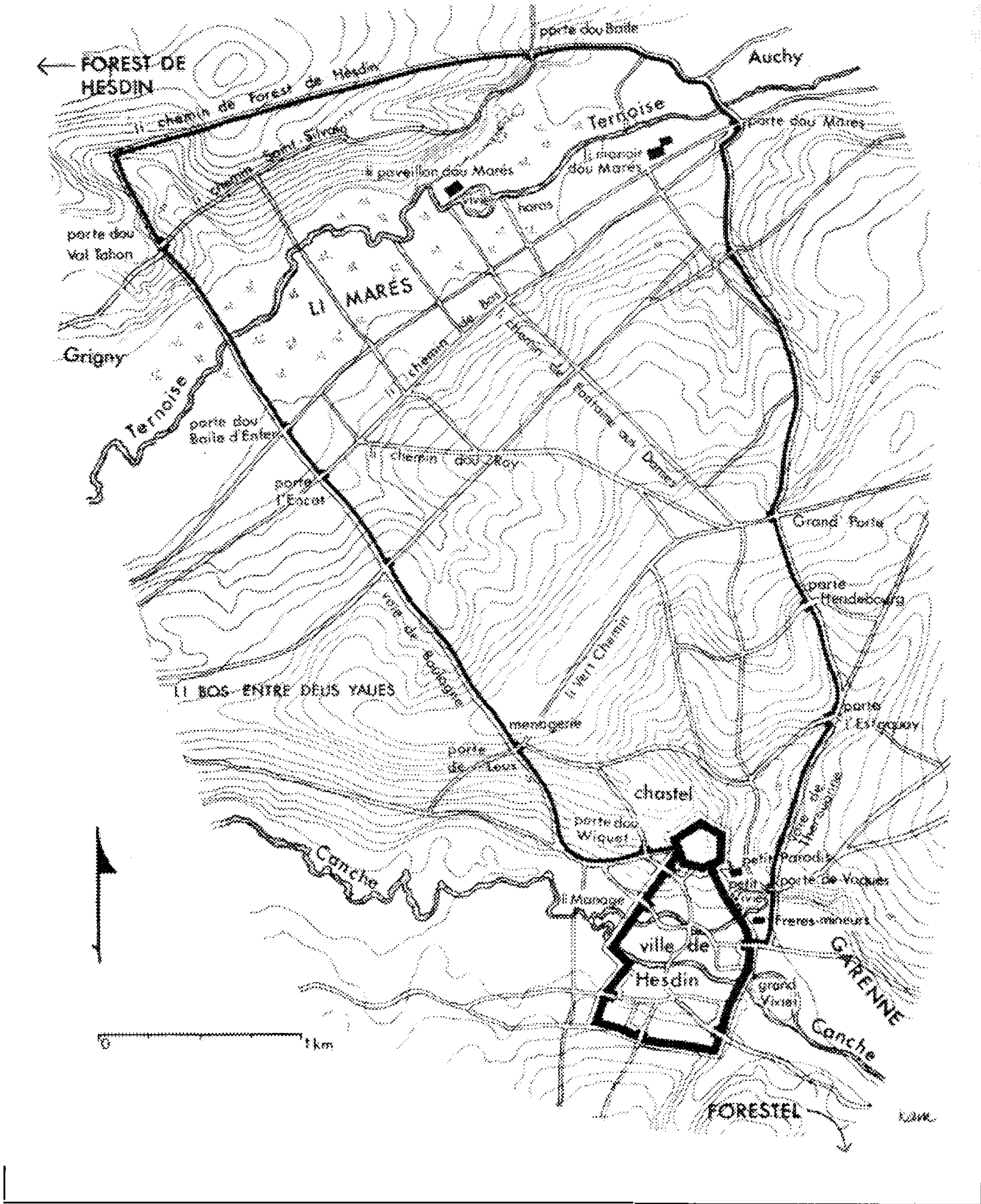
FOREST DE HESDIN
li chemin de Forest de Hesdin
porte dou Baile
Auchy
Ternoise
porte dou Mares
li manoir dou Mares
li pavellon dou Mares
haras
li chemin Saint Silvain
porte dou Val Tahon
LI MARES
Grigny
Ternoise
porte dou Baile d'Enfer
li chemin dou Ray
porte l'Escat
Grand Porte
porte Hendebourg
voie de Boulogne
li Vert Chemin
LI BOS ENTRE DEUS YAUES
menagerie
porte de Lous
porte l'Estaquay
chastel
porte dou Wiquet
Canche
petit Paradis
porte de Vaques
Li Manage
Freres mineurs
ville de Hesdin
grand Vivier
GARENNE
Canche
0
1 km
FORESTEL

Figure 10

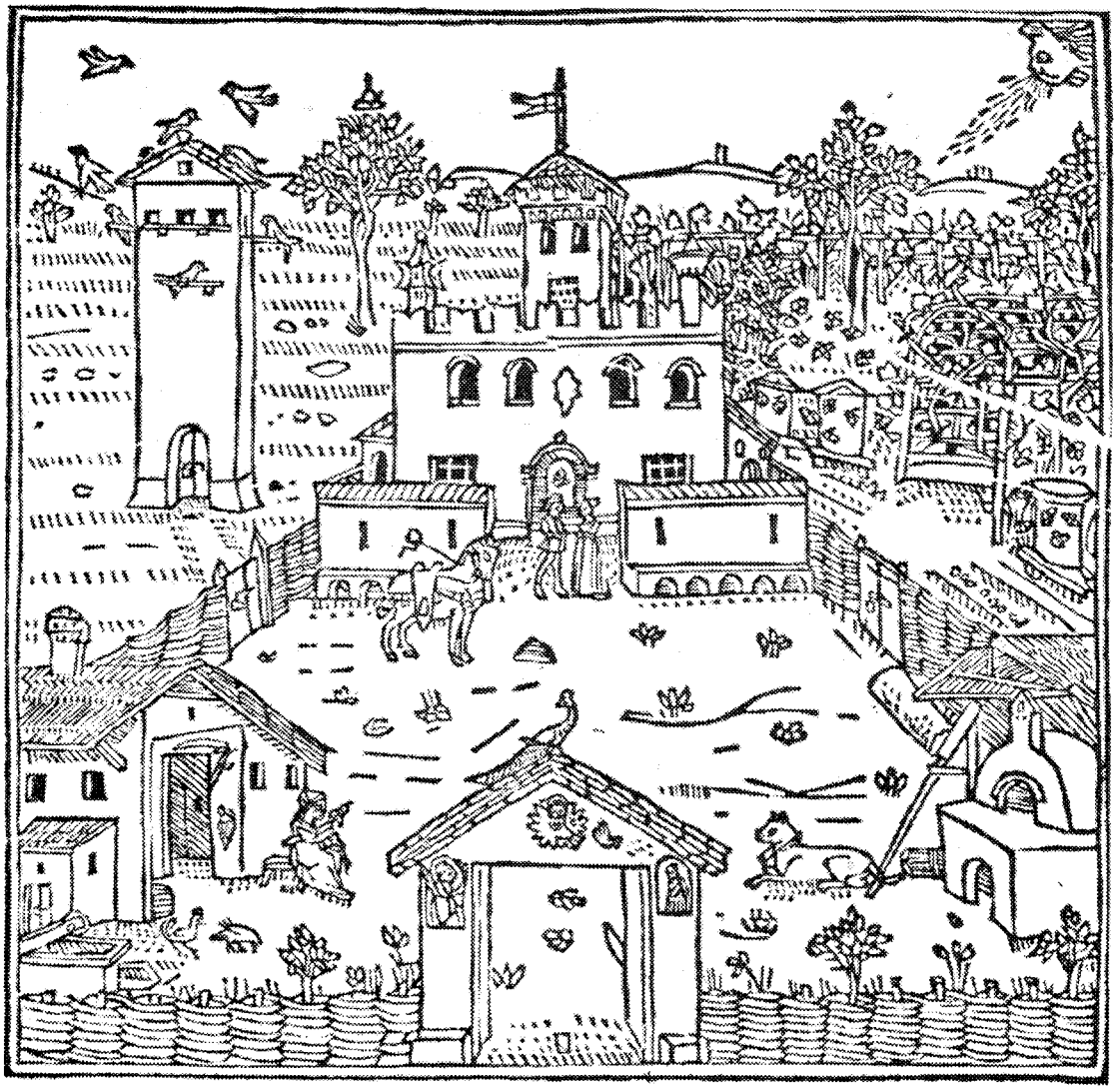

Figure 11

Figure 12

APPENDIX: TRANSLATION[470]

ON MAKING GARDENS (*VIRIDIARIA*) AND DELIGHTFUL THINGS SKILLFULLY FROM TREES, PLANTS, AND THEIR FRUIT

PREFACE

In the previous books, trees and herbaceous plants[471] have been discussed according to how they are of use to the human body; but now the same ones must be discussed according to how they give pleasure (*delectatione*) to a rational soul[472] (fem.*animae rationali*) and consequently preserve the health of the body, since the humoric state (*complexio corporis*) of the body is always closely related to the disposition of the soul (masc. *animi*).

1. ON SMALL GARDENS OF HERBS

1. Certain gardens may be made only of plants, others with trees and yet others of both. When consisting only of plants they require fine and compact soil, so that they may yield fine and delicate plants that greatly please the sight (*que maxime visum delectant*). Therefore, the place which is

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[470] I would like to thank Jamie Woolard for helping me to prepare this translation.

[471] Henceforth I shall translate the word "herba" simply as "plant," but it is important to distinguish between herbaceous plants and vines and trees insofar as this fits into Crescenzi's morphology of the plant world, which he outlines in book two.

[472] The dictionary translation of "anima" is breath or air. I have opted to use the translation of the related masculine version of the word, "animus," in this instance because of Crescenzi's own use of "rationali" to qualify "anima." Another possible translation would have been "sprit," whose root is also related to breath, insofar as breath was considered a force that underlies all life.

prepared for such a garden should first be freed of weeds (lit. plants and roots that are impure and large), which is difficult to do, unless first, after the space has been cleared of roots, it is well leveled and then the space is thoroughly soaked with scalding water, so that the remaining roots and seeds lying hidden in the ground will be altogether unable to sprout. And then the whole plot should be filled with a fine turf of thin grass, and the turfs themselves completely compressed with wooden mallets and the blades of grass trodden underfoot, until hardly any of them are visible. Then it [the grass] will burst forth gradually like hair (*capillariter*) and cover the surface like a green cloth. 2. The site of the garden should be of such a measure as may suit those plants that are expected to exist in it. Along the edge of the garden should be planted fragrant herbs of all kinds, such as rue, sage, basil, marjoram, mint, and the like, and also flowers of every type, such as violet, lily, rose, gladiola, and the like. Between these plants and the level turf raise and form [another] turf in the fashion of a seat, flowering and pleasant (*florens et amoenus*). Plant trees or train vines on the turf against the heat of the sun; the turf will have a pleasant and cool shade from their leaves, in the manner of an overhang. Shade more than fruit is sought from those trees, and therefore they should not be dug or manured, activities that might harm the turf.

3. But care must be taken that the trees are not exceedingly thick or too many in number, which by removing air damages health; and this is because a garden needs free air and excessive shade breeds impurities. Furthermore, the trees should not be noxious, such as nut trees and some others, but sweet, fragrant in flower (*dulces aromaticae in flore*) and pleasant (*iocundae*) in shade, such as vines, pears, apples, pomegranates, laurels, cypresses, and the like. Behind the turf there should be a great number and variety of medicinal and aromatic herbs, since they not only delight by their odor, but their flowers also refresh the sense of sight by their variety (*flores diversitate reficiunt visum*). Disperse rue among them in many places, because it is of beautiful greenness (*pulchritudine et viriditatis*) and it drives poisonous animals from the garden because of its bitterness.
4. There should be no trees in the middle of the turf, but this level place itself should rather enjoy free and pure air, since that air is healthier, and also since spiders' webs stretched from one branch to another would block the way and poison the faces of those passing through, as would be the case if the garden or the turf had trees planted in the middle of it. And, if possible, a very pure spring (*fons purissimus*) should be diverted into the middle of the garden, because its purity produces much pleasantness (*quia ipsius puritas multam affert iocunditatem*). The garden should be open to the north and the east because of the health and

purity of these winds. It should be closed in the direction of the opposing winds, namely the south and west, on account of their violence, impurity, and unhealthy quality. Although the northeast wind may hinder the fruit, it marvelously (*miro*) preserves the spirits (*spiritus*) and ensures health. For delight (*delectatio*) and not fruit is sought in the garden.

2. ON LARGE AND MODERATE GARDENS OF PERSONS OF MODERATE MEANS

1. Let the space of the earth set aside for the garden be measured according to the means and rank of persons of moderate means, namely, two or three or four or more *iugera* or *bubulcae*. The space should be surrounded with ditches and hedges of thorns and roses, and moreover, in warm places a hedge of pomegranates should be made and in cold places of nuts or plums and quinces. Again, plough the space and make it flat on all sides with a rake or with hoes; afterwards, mark out the entire space where trees are to be planted with a cord. Plant in it lines of pears, apples, and in warm places of palms and of lemons. Or plant lines of mulberries, cherries, plums, and lines of such noble trees as figs, nuts, almonds, quinces, and pomegranates, each one clearly in its own line or row according to type.

2. The lines or rows should be spaced twenty feet apart more or less, or forty feet or more, according to the will of the master (*pro domini voluntate*). The large trees should be

spaced in a line twenty feet from the other and the small trees should be spaced ten feet from each other. Noble vines of different types that provide delight and utility (*quae delectationem et utilitatem afferent*) may be planted between the trees. Hoe the lines of trees so that the trees and vines will grow stronger, and treat the intervals as meadows and weed (lit. clear them of impure and large plants) them often. Mow the meadows of the garden twice a year, so that they may remain beautiful. Trees should be planted and shaped, as was stated above in Book V, in rows of each kind. Again, pergolas (*pergularia*) formed in the manner of a house or a tent should be made in the most suitable part [of the garden].

3. ON GARDENS OF KINGS AND OTHER ILLUSTRIOUS AND WEALTHY LORDS

1. Because such persons by reason of their riches and power are able to satisfy their own will in all earthly things and nothing is wanted by them for the most part, except the labor of setting workers to task, they should know they are able to make gardens having many delights (*multam delectationem*) in this manner. They should, therefore, choose a flat place, not marshy nor screened from the flow of good winds, in which there is spring flowing through the place. And the spot should be twenty *iugera* or more, according to the will of the master. It should be surrounded by suitably high walls and in the northern part it should be planted with a grove of

various trees, in which wild creatures (*animalia sylvestria*) placed in the garden may flee and hide.

2. In the southern part there should be built a handsome palace (*palatium speciosum*), in which the king or queen may linger when they wish to escape from heavy thoughts (*graves cognitiones)* and to renew the spirit (fem. *animamque*) by means of joys and solaces (*gaudiis et solaciis renovatere*). For from this area it [the palace] will create shade for the garden in the hot season and its windows facing onto the temperate garden will enjoy a view unhindered by the heat of the sun. An enclosure for animals (*vivarium*), which is discussed above, should be made in another part of the garden; in this *vivarium* should be made a fish pond in which various types of fish are raised; and hares, stags, roebucks, rabbits, and similar non-predatory beasts should be put in it.

3. And above certain bushes placed near the palace, a kind of house should be made which has a roof and walls densely woven from thick boughs, into which are placed pheasants, partridges, nightingales, blackbirds, goldfinches, linnets, and all other kinds of singing birds. In the garden there should be rows of trees spaced far apart from the palace to the distant grove, so that the animals placed in the garden may be seen easily from the palace.

4. In this garden there should also be a palace with walks and bowers (*palatium cum caminatis et cameris*) made from

nothing but the trunks of trees, in which the king and queen could be with the barons and lords when it is not the rainy season. And a palace of this type will be able to be made easily (*commode*) in such a manner: The whole space of the walks and bowers should be measured out and demarcated and, if it pleases, fruit trees which will grow easily such as cherries and apples should be planted in place of walls; or, what is better, willows or elms or birch trees should be planted there, and their growth should be overseen for several years, both by grafting and by stakes, poles, and ties, to such an extent that walls and a roof might be formed from them.

5. The aforesaid palace or house may be made more quickly and easily of wood, and vines may be planted around it on all sides and cover the entire structure. Large shelters of dead wood or living trees covered with vines can be made in the garden itself. Furthermore, much pleasure (*delectationem*) will be provided if marvelous (*mirabiles*) and various grafts are made on the same trees in the garden, which the attentive cultivator of the garden is able to know easily from what is said extensively in the second book.

6. Moreover, it behooves one to know what kinds of trees and plants should be placed in such a garden, each one separate and distinct from the other, so it is not found to have any fault. In such a garden, therefore, the king would not only take pleasure (*delectetur rex*), but sometimes, after he has

performed serious and obligatory business, he would be renewed in it (*renovetur in* eo), glorifying God on high, who is the origin and cause of all good and legitimate delights (*qui omnium bonarum et licitarum delectationum principium est et causa*).

4. ON THOSE THINGS WHICH ARE ABLE TO BE MADE FOR THE SAKE OF PLEASURE IN THE FORTIFICATIONS OF ESTATES (CURIARUM) AND GARDENS

1. Walls of living trees resembling fortification walls or phalanxes or palisades with towers or defensive towers can be made appropriately around the land (*tumba*) and the estate (*curia*),[473] or around the garden in this way: if the soil agrees with them, plant willows or poplars abundantly on the top of the embankments surrounding the space that has been thoroughly freed from thorns and old trees; or plant elms, if they prefer such soil, at a density of one foot or less and placed in a straight line. When they are fully strengthened, prune them close to the ground and in the following year transplant the offspring of the [original] shoots in the spaces every four fingers between the lines of trees, and train them directly upwards by means of stakes and props, until they have grown eight or ten feet. At that height, after they have will have filled out a fair amount, they should be pruned.

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[473] Crescenzi uses these words interchangeably throughout the treatise, especially in book one.

2. Below the site of the wall, along a distance of five feet, more or less, plant similar plants standing ten feet apart at the same time as the previous ones. When they will have reached the instructed height, prune them and, with the help of props, bend them towards the nearest of the outer plants and likewise the outer ones towards them. And do this so many times in a given year until a kind of sturdy lattice frame (*cratia*) has been made, above which people are able to linger safely. Then the outside part should be set out to grow in the fashion of a wall placed above a pasture; this can be pruned at an appropriate height in any year, with the crenellated shape (*merlorum*) placed atop the wall and maintained in such a manner.

3. Around such a wall, at the corners and elsewhere, if it pleases (*placuerit*), four trees can be planted and trained directly upwards, then pruned individually at ten feet and bent toward each other with the help of long props, and something like sunny terraces (*solaria*) can be made from them. Again, they can be raised up on high and shaped in the same fashion, and finally bent down from above in the manner of the roofs of a house, or formed with crenellations. A *solarium* of the aforementioned trees will stand best above the outside door of the house and in front of the same. In the estate or gardens a house can also be made with living columns, which are themselves already sizable and optimally transplanted at the best size. The beams are fixed above them

and covered by a roof of reeds or chaffs, although a tree branch might still project from each of the columns out above the roof; these branches will always keep the column itself from drying out [by keeping it alive] and will protect the house itself marvelously (*mirabiliter*) from summer heat.

5. ON THOSE THINGS WHICH ARE ABLE TO BE DONE IN AGRICULTURAL FIELDS FOR THE SAKE OF PLEASURE

1. In fields the beauty of the site itself delights most of all, especially when there are not several irregular small fields, but when a great number are gathered into one, without gaps and having straight borders. And therefore any attentive paterfamilias ought to acquire fields near his own, rather than buy them elsewhere. He should also sell small fields in other places and exchange the superfluous and winding parts of the fields with his neighbors and make his own field even with his neighbor's. He should surround the entire place with ditches and hedges of living thorns with suitable trees mingled throughout and spaced equally, and dig small drains, which are necessary in the plains, that run straight from within, inasmuch as it is possible, always preserving the utility of the fields.

2. Utility should take precedence over delight in the fields (*servata semper utilitate agrorum, delectationum enim utilitas praeceere debet in agris*), although in gardens the opposite must be *preserved (licet in viridariis oppositum sit*

servandum); and therefore whatever activities performed in them promise a greater yield of fruit are better and ought to be practiced more. Further, he should see to it that, as far as possible, streams of water run down through the fields, on which the streams might be able, when there is need, be made to flow, and from the fields, when it is necessary, to be diverted. Suitable paths should also be made through the large fields, by which the paterfamilias on horse and on foot and farmers with wagons or oxen might be able to reach all parts of the fields with ease (*commode*). All of these things truly delight with utility (*haec enim omnia plurimum cum utilitate delectant*).

6. ON THOSE THINGS WHICH PROVIDE PLEASURE WITH RESPECT TO VINES AND THEIR FRUITS

1. It delights most of all to have beautiful vineyards bearing grapes of different types laid out toward the east on the plains or on small hills, and therefore the master should take care to plant them in a well suited place and to train them in fertile places on trees and pergolas (*pergulariis*), but in infertile places to arrange them close to the ground in straight lines, and also to sow in them grapes of many good types and to attempt (*expiri*) marvelous graftings on the same ones, which the ancient authorities and especially Palladius, proclaim it is possible to make.

2. One of these methods is to plant a grape vine near a cherry tree or another tree, and when it will have wedded itself completely [to the tree] and is thriving, the tree should be bored through with a sharp hover and the vine pushed through the opening, and the opening closed up with wax or dirt on each side, so that the sun or the rain or the wind might not hinder the joining together. After that, when the wood of the vine will have been joined completely with the wood of the tree, the vine should be cut close to the bark of the tree, so that from then on it is fed by the sap of the tree. For thus the grape is made to ripen at the same time as the fruit of the tree.

3. There is a certain way of making a theriac grape and a nutmeg vine or a clove or a laxative or a grape of another quality. It is made thus: a shoot that is to be planted is cut in one part and after the pith has been removed, theriac or moss, or a powder of cloves, scammony or of another substance should be put in its place. Then, carefully bound up with a cord, it should be entrusted to the earth. When this is done, the grape which is borne will retain the peculiar quality of the substance that has been placed in the vine. Indeed, if a shoot is taken from this vine and planted, it will not retain the potency of the mother plant. It is necessary therefore to renew the strength of the weakened sap by a constant infusion of the theriac or of another substance. But I think that the same thing can be

accomplished in a shorter time, if the shoot of the hanging grapes is cut open just as the grapes begin to ripen and it is bound up after the substance has been inserted.

4. There is a certain beautiful type of seedless grape (lit. a grape that lacks a seed at its interior); it is made thus according to the Greek authors, whom Palladius cites. However much of the shoot that is to be planted lies hidden in the earth, so much of it we ought to split open and, after all the pith has been removed, we ought to bring together again carefully the hollowed-out parts of the split section, and to tie together the split parts with a cord and to plant it. And they maintain that the cord ought to be made of papyrus and thus placed in the moist soil.

5. Some carefully embed the bound-up shoot, as much as has been hollowed out, within the bulb of the *squilla*; thanks to which all plants, they maintain, are quite readily able to take root. Others hollow out the fruit-bearing shoot of the pruned vine while still on the vine itself at the same time at which they prune the vines. Without cutting it open, they remove the pith from the top as far down as they can, and then they tie it to a reed-prop, so that the shoot might not be able to fall over. Then, they pour new wine, what the Greeks call *opos Quirenaicos*, that has been reduced from the consistency of water [to that of reduced new wine] on the hollowed-out part. They repeat this every eight days, until new shoots of the vine appear.

6. So that vines might bear bunches of black and white grapes, the Greeks order this to be done. If there are white and black vines close to one another, when they are pruned, join together the divided shoots of each thus, so that by lining them up you can unite the middle buds of each. Then you will tie them with papyrus drawn tightly and you will take care to smear them with soft, damp earth, and to water them every fourth day, until a growth of new leaf should sprout. Thus with time you will be able to produce this type on many branches.

7. A certain expert (*expertus*) told me that he had grafted a white shoot of a vine and black one onto a row of buds on a single vine, only the outer layer of the buds having been removed from around the middle, and that these had taken hold quite well. This can be done in either of two ways. After two shoots have been taken and split open, then the buds have been joined together, and the shoots have been bound up into a single shoot, [then] it [the bound shoots] should be grafted [onto the vine]. Or, it can be done by splitting two buds open, joining them with a small piece of wood, and then grafting them in the place of a bud. It is also very pleasing to have vines of different colors and tastes (*colorum et saporum*) and therefore the attentive paterfamilias should gather certain grapes at the right time so that he might have sour wine, and other well-ripened ones

so that he might have powerful wine, and others barely ripened so that he might have sweet wine.

8. Also, he should make wines of different colors with coloring agents that do not spoil the taste. And he should make those of different tastes with substances that are fragrant and add new flavor. They should be added to some part of the unfermented wine in the cauldron and cooked down over the fire until the wine has been infused thoroughly with that taste and odor. And then it should be poured into a vat, in which there is a similar wine or one of another type.

9. Indeed, it is good to have medicinal wines which a person whose body is susceptible to some illness might use. In fact, this will be done when simple or composite medicines that have the power of protecting against that illness are mixed with wine in the aforementioned manner. He should also take care to have always in the country house new wine, raisins, vinegar and similar things, which he should according to the ways described in book four above. For it greatly pleases the spirit (masc. *animum*) to find readily the aforementioned items, both when one seeks them for oneself and for one's friends. If a bunch of grapes is put into a small vase of clay or glass after it has flowered, it is said that one seed results from the entire bunch.

7. ON THOSE THINGS WHICH ENHANCE PLEASURE WITH RESPECT TO TREES

1. Among those things which please the paterfamilias, it is to have in his place an abundance and variety of good trees, and therefore he ought to see to it that wherever he has found outstanding trees bearing fruit he moves them from that place to his [estate], and plants or makes grafts from the same; and he should not arrange them haphazardly, as nearly all people do, but in harmonious rows, especially for such rare types of large trees, so that their branches may spread out without hindering the fertility of the fields with excessive shade. Those small trees truly which grow naturally, he is able to place more densely and to shape each type according to its own nature.

2. Furthermore, he should put the larger ones in the northern and western parts, but the smaller ones in the east and the south. For in this manner the crops, which flourish in an open field, suffer less harm. Moreover, on the same or on different trunks, he should make marvelous and diverse grafts, which have proven to be quite marvelous to those who experiment in such matters; for many types of pear trees apple trees, citrus trees, medlar trees and service trees and the like of can be grafted onto the same trunk.

3. Also, the apple is grafted onto the willow and the poplar and the vine onto the elm and the mulberry, as Palladius says. And if the peach is grafted onto the thorny beech,

fruits that are larger and better than the others will sprout forth, as Albertus says. And if the almond and peach are grafted onto a plum tree with their buds joined together, their fruits will have the flesh of peaches and their pits will be transformed into the nature of the almond. And the mulberry can be grafted onto the elm, but it will bring forth barren growths.

4. Maritalis claims that white seeds are made in pomegranates if you mix a fourth part of gypsum with potter's clay and chalk and you apply this type of soil to the roots for an entire three year period. The same writer says that its fruits grow to a marvelous size if a clay jar is buried near the pomegranate tree, which encloses a flowering branch [that is still attached to the tree] tied to a stake so that it might not spring back. Then the enclosing pot is protected against the intrusion of water. In autumn, when it has been opened, it will reveal a the size of the jar. It is asserted that this can also be done quite readily from the month of May or June. Varro, however, outlines the procedure in another way, saying: if you will have put unripe pomegranates, which are still clinging to the branch, down into a bottomless jar, and if you will have put it thus in the soil and covered it around the branch so that the outside air might not blow on it, then fruits will be taken out which are not only perfect in form, but also bigger than had every hung on the tree.

5. In order that one fig tree might bear different fruits, you will bind to one other and intertwine two branches of black and white [figs] between each other by means of a rope in such a way that the seeds might be compelled to mix. Planted thus, and manured and watered, when they will have begun to produce, fasten the developing buds to each other by means of some adhesive; then the unified bud will bring forth two colors of figs, which it divides in their union and joins in their division.

You will preserve roses that have not yet bloomed, in this way: you will store them away in a tender reed which is still standing, but cut open in such a way that you allow the part to be cut to come back together again. At the same time you should cut back the reed to the point where you wish to enclose the roses. Some cover them over and store them out of doors, buried and well protected in a rough vessel.

6. In order to produce cherries without pits, Martialis says to do the following: you will cut the young tree down to two feet and split it open all the way to the root, you will then take care to scrape the pith of each part with an iron tool, and immediately you will tie each of the parts by means of a string and smear the highest part with dung and also the parts of the side about to be divided. And after a year the pruning mark mentioned above will have healed. Onto this tree you will graft the young shoots that have not yet borne fruit and from these fruits without pits will be produced .

If a small branch of a cherry tree is cut and scammony is put in the place of the pith, the fruit of that branch in that year will acquire the property of loosening, and if moss is put on the same place, it will acquire its odor and thus also with other substances and fruits. And if a blue color or another is put in it, it will take on that color.

7. According to the assertions of the Greeks "a marked peach" will be produced if you bury its pits and if, after six days when they have begun to sprout, you open them and remove the seeds, and mark on them with a red pigment soon after, you plant the bound up centers inside the pits. Peaches without pits result if the peach tree and the willow are planted close to one another. Then, after the willow has been bent like a bow, it is bored through in the middle and the peach tree is put through the opening, and the opening is completely sealed with wax or mud. And then the earth should be piled all the way up above it. When a year or two have passed, the wood of the peach and the willow will have been united, and the peach should be cut off under the bow of the willow, so that it is nourished from the sap of the willow alone.

8. ON THE PLEASURE OF GARDENS AND HERBS

1. Since it delights greatly to have a garden that is well arranged and cultivated by appropriate industry, the paterfamilias should take care to have the garden in rich and

loose soil. For which, if it is possible, a spring or a stream should flow down through the separate parts, so that the garden can be watered in time of great heat. There he should raise all types of good plants both for eating and for medicine, each one according to what its nature requires, in regular, square plots made uniformly with a stretched-out line, and of customary width, as is related extensively in the sixth book. He should keep it well manured, so that it might not appear worn out from exhaustion of the soil.

2. And so that it might delight more, unusual things (lit. of no use) are cultivated in it. For certain natural things can be grown in it that seem to some to be miraculous things. For if you hollow out a round ball of goat manure carefully with an awl and put into it the seed of lettuce, nasturtium, colewort, radish and then place the rolled ball of dung into a small hole of well-tilled earth, that the radish puts out its efforts toward the root, while the other seeds emerge on the surface as uniform lettuce, but one preserving the taste of each plant [below the surface].

3. If you plant many seeds of leeks, that is, the seed of several beds of leeks, tied into one bundle, a huge leek will grow from all of them. Also, if you put the seed of a turnip in the top of this, without using a tool, and plant it, it is caused to grow much, or if many seeds have been placed into one small opening, all of the shoots will grow together into one large leek. If you put less than two palms of water in a

small open vase under a small cucumber or a small citrus or a gourd smaller than two palms, such will be made. Some will insert the flower of the cucumber with the top of its little vine stalk - cut off as Albertus understands it - in a reed, having pierced through all of its knots beforehand, and there a very long cucumber will grow. It fears olive-oil such that, if you place oil near it, it will bend away just like a bow. Whenever (lit. however many times) it thunders, it shakes from fear. If you enclose its flower in a clay mold and also tie it right on the vine, then whatever face the mold had, whether of a man or an animal, such a one you will produce in the shape of the cucumber. This is all asserted by Gargilius Martialis.

4. Martialis declares a marvelous thing about basil, which sometimes displays purple flowers, sometimes white ones, and at other times pink ones; and if it should be sown often from that seed, it will be transformed sometimes into wild thyme, at other times into an aromatic herb (mint or watercress). Hermes, however, says that a gourd planted in the ashes of human bone and watered with oil bears fruit on the ninth day. And what is miraculous: the seeds produced in the upper part of the vessel of the gourd make long and slender gourds, but those which are produced in the middle make thick ones, and those which lie at the bottom make wide ones.

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