

28 • Maps and Rural Land Management in Early Modern Europe

ROGER J. P. KAIN

In his textbook *A Preparative to Platting of Landes* (1596), the English surveyor Ralph Agas set out three main advantages of survey by plan rather than by written description alone: to locate land precisely, to provide tools for land management, and to serve as a permanent record.¹ Some twenty years earlier, Valentine Leigh, in *The Moste Profitable and Commendable Science, of Surueying of Landes* (1577), had alluded specifically to the “profite” to be obtained from accurately surveyed property.² This chapter explores and explains the notion that profit could be gained through the management of properly surveyed, measured, and mapped lands. The large-scale, usually manuscript, maps resulting from surveying and measuring are known in England as estate maps; in France as *plans terriers*, *plans parcellaires*, or *plans de bornage*; in the German-speaking world as *Flurpläne*; and in Europe’s newly founded colonies as land plats. The chapter considers these maps not as artifacts, nor from the point of view of their survey and construction, nor as records of local topography, but rather as aids in decision making, as agents of rural change, and as exemplars of rural improvement.³

One of the questions that arise from thinking about maps as tools in rural management has to do with the extent to which a map of a single property might have exerted an influence over an area far greater than the few hectares it portrays by providing a model of a contemporary management ideal in the way that town maps may have done.⁴ As John Dee pointed out in his preface to Henry Billingsley’s translation of Euclid’s *Elements of Geometrie*, from a “plat of a Citie, Towne, Forte, or Pallace . . . the Architect may furnishe him selfe, with store of what patterns he liketh.” There is considerable relict street plan and building evidence to support Dee’s notion of the “map as model” in an urban context.⁵

Whether the idea can be applied in the rural world and to estate management is less easily documented and must remain largely conjectural. Why did some property owners in the early modern period commission maps to supplement, if not to supplant, written surveys for delineating their properties? For what purpose did a landowner spend not inconsiderable sums of money on having a map made? How might a property map have assisted with the every-

day running of an estate or with the making of improvements such as draining and enclosing? Answers to these questions are both tentative and partial. The supporting evidence is mostly circumstantial. Moreover, it comes predominantly from England, where land mapping developed early.⁶ It includes contemporary didactic literature, the maps themselves, and the documentary context in which maps are found. This last is of special importance: only by reintegrating maps and contemporary written documents can the role of maps in decision making be assessed properly. Otherwise, relatively little can usually be deduced from the surface content of an individual map about the purposes for which it was used. That it may record the state of cultivation of fields, for example, does not mean that it was used for land use management.

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Abbreviations used in this chapter include: *Rural Images* for David Buisseret, ed., *Rural Images: Estate Maps in the Old and New Worlds* (Chicago: University of Chicago Press, 1996).

1. Ralph Agas, *A Preparative to Platting of Landes and Tenements for Surueigh* (London: Thomas Scarlet, 1596), 14–15. See also Andrew McRae, *God Speed the Plough: The Representation of Agrarian England, 1500–1660* (Cambridge: Cambridge University Press, 1996), 169–97.

2. Valentine Leigh, *The Moste Profitable and Commendable Science, of Surueying of Landes, Tenementes, and Hereditamentes* (London: For Andrew Maunsell, 1577), preface.

3. Much of the first volume of the influential periodical *Annales d’Histoire Économique et Sociale* (1929) was devoted to property maps as historical sources: Marc Léopold Benjamin Bloch, “Le plan parcellaire document historique,” 60–70; idem, “Les plans parcellaires français: Le cas de la Savoie et du comté de Nice,” 390–98; Svend Aakjær, “Villages, cadastres et plans parcellaires au Danemark,” 562–75; and Walther Vogel, “Les plans parcellaires: Allemagne,” 225–29.

4. See the letter from Cressey Dymock to Samuel Hartlib in Cressey Dymock, *A Discoverie for Division or Setting Out of Land, as to the Best Form* (London: Printed for Richard Wodenothe in Leadenhallstreet, 1653), 1–11.

5. John Dee, “Mathematicall Praeface,” in *The Elements of Geometrie of the Most Auncient Philosopher Euclide of Megara*, by Euclid, trans. Henry Billingsley (London: Printed by Iohn Daye, 1570), a.iiiij recto.

6. Catherine Delano-Smith and R. J. P. Kain, *English Maps: A History* (London: British Library, 1999), 112–24.

MAPS AND PROPERTY DISPUTES

A relatively small proportion of extant premodern maps come from the Middle Ages, but they are of interest in highlighting the use of maps in property disputes.⁷ An early example is a map copied into the English Kirkstead Psalter (1224–49) depicting nine *vaccaria* (cow pastures) in Wildmore Fen, Lincolnshire, disputed by the sokes of Bolingbroke, Horncastle, and Scrivelsby.⁸ Points in dispute between the bishop of Albi and the *seigneur* of Puygouzon in the department of Tarn in France concerning the boundary between the two communities were set out in a perspective view of the property about 1314 (fig. 28.1).⁹ In 1358, a map was made of lands near Oostburg and IJzendijke, the tithes of which were disputed by the bishop of Courtrai and the abbot of St. Pieter at Ghent.¹⁰

Around the mid-sixteenth century, the use of maps to marshal evidence relating to disputes about ownership or rights to particular pieces of land increased, and from then it continued to be important throughout the early modern period.¹¹ In his influential textbook *Les quatre livres des institutions forenses, ou autreme[n]t, Pratique judiciaire* (1550 and editions to 1641), the lawyer Jean Imbert advised judges to enlist the services of a *peintre* to produce a *figure*. Then the judge “should enquire of the parties if the picture was well done, and if it is agreed, the judge should question the parties to determine the disputed territory and the respective boundaries claimed.”¹² Imbert’s advice was still being followed, it would seem, in the seventeenth century, when Jean L’Hoste noted that judges often called for a map of disputed territory to assist them with framing a fair decision.¹³

That some early modern property maps originated in connection with disputes can sometimes be deduced from associated written documents. A drawing of the Étang de Scamandre in Camargue, France, is an integral part of a document prepared by the abbot of Saint-Gilles when claiming his rights to the lake.¹⁴ Other maps that are separate from written depositions can be related to a property claim from what is said on the map itself. An anonymous “Plott of Duncton Common” (1629) has written on it “The place from whence the Tenants & Defendants carried awaie the Woods” and “The place from whence the defendants caryed away the heath.”¹⁵ Similarly, the prominence given to “mines” on a map of Fallowfield, Northumberland (ca. 1583), suggests that it may have been a product of litigation over common boundaries and mineral rights.¹⁶ Other early maps that can be assigned to property disputes in this way include some early seventeenth-century maps of Rickenbach by the German painter-cartographer Johann Andreas Rauch and a plan of the estates of Launay and Fleurigny in the department of Yonne, France. The latter was made in

1530 by “François Dubois, peintre,” on the occasion of a dispute between the *commandeur* of Launay and François Leclerc, *capitaine* of Sens.¹⁷ Between 1564 and 1586, there were a series of disputes between the lords of the Buckinghamshire manors of Wotton Underwood and Ludgershall over rights to tithes and common on “Wotton Lawnd” and other parcels of land lying between the two villages. An anonymous, undated map portrays the villages, fields, woods, and pastures of this area and bears the names of all but one of the places mentioned in asso-

7. P. D. A. Harvey, “Medieval Maps: An Introduction” and “Local and Regional Cartography in Medieval Europe,” in *HC 1*: 283–85 and 464–501; idem, *The History of Topographical Maps: Symbols, Pictures and Surveys* (London: Thames and Hudson, 1980), 84–103; idem, *Medieval Maps* (London: British Library, 1991); idem, *Maps in Tudor England* (Chicago: University of Chicago Press, 1993), esp. 79–81; Numa Broc, *La géographie de la Renaissance (1420–1620)* (Paris: Bibliothèque Nationale, 1980), 12; and R. A. Skelton and P. D. A. Harvey, eds., *Local Maps and Plans from Medieval England* (Oxford: Clarendon, 1986).

8. H. E. Hallam, “Wildmore Fen, Lincolnshire, 1224 × 1249,” in *Local Maps and Plans from Medieval England*, ed. R. A. Skelton and P. D. A. Harvey (Oxford: Clarendon, 1986), 71–81; Derek J. de Solla Price, “Medieval Land Surveying and Topographical Maps,” *Geographical Journal* 121 (1955): 1–10; R. A. Skelton and P. D. A. Harvey, “Local Maps and Plans before 1500,” *Journal of the Society of Archivists* 3 (1969): 496–97; and Harvey, *History of Topographical Maps*, 89–90.

9. Maurice Greslé-Bouignol, *Les plans de villes et de villages notables du Département du Tarn, conservés dans divers dépôts* (Albi: Archives Départementales, 1973), 8; the map, “La carta pentha et vehuta de la sonhoria dalby depart dessa lo pont et fazen division am Puyggozo et autras parta,” is also reproduced in Roger Allaire, *Albi à travers les siècles* (Albi, [1933]; reprinted Paris: Office d’Édition du Livre d’Histoire, 1997), 9.

10. M. K. Elisabeth Gottschalk, “De oudste kartografische weergave van een deel van Zeeuwsch-Vlaanderen,” *Archief: Vroegere en Latere Mededelingen Voornamelijk in Betrekking tot Zeeland Uitgegeven door het Zeeuwsch Genootschap der Wetenschappen* (1948): 30–39, and Johannes Keuning, “XVIIth Century Cartography in the Netherlands (Mainly in the Northern Provinces),” *Imago Mundi* 9 (1952): 35–63.

11. Marie-Antoinette Vannereau, *Places et provinces disputées: Exposition de cartes et plans du XV^e au XIX^e siècle*, exhibition catalog ([Paris: Bibliothèque Nationale], 1976).

12. François de Dainville, “Cartes et contestations au XV^e siècle,” *Imago Mundi* 24 (1970): 99–121, esp. 117.

13. Jean L’Hoste [Lhoste], *Sommaire de la sphere artificielle, et de l’usage d’icelle* (Nancy: By the author, 1629), 129.

14. Dainville, “Cartes et contestations,” 112.

15. G. M. A. Beck, “A 1629 Map of Duncton Common,” *Sussex Notes and Queries* 15 (1959): 83–85.

16. M. W. Beresford, “Fallowfield, Northumberland: An Early Cartographic Representation of a Deserted Village,” *Medieval Archaeology* 10 (1966): 164–67. Courts of law in England could require that maps be made to help resolve property disputes; see A. Sarah Bendall, “Interpreting Maps of the Rural Landscape: An Example from Late Sixteenth-Century Buckinghamshire,” *Rural History* 4 (1993): 107–21.

17. Ruthardt Oehme, “Johann Andreas Rauch and His Plan of Rickenbach,” *Imago Mundi* 9 (1952): 105–7, and Archives Nationales, *Catalogue général des cartes, plans et dessins d’architecture*, vol. 3, *Départements Oise à Réunion*, by Michel Le Moël and Claude-France Rochat-Hollard (Paris: S.E.V.P.E.N., 1972), 453.



FIG. 28.1. ALBI, DÉPARTEMENT DU TARN, FRANCE, CA. 1314. A perspective view of the surroundings of Albi, from the Verdusse gate and the Séoux bridge on the right to the church

of Saint-Geniès and the Château de Puységouzon on the left. Photograph courtesy of the Archives Départementales du Tarn, Albi (4 Edt 115).

ciated written depositions (plate 21). From such evidence, it seems reasonable to suppose that the map was made at some time during these disputes and that its purpose was to clarify the local geography in question.¹⁸

Maps have been invoked as evidence in disputes about a wide variety of pretended and defended rights. Keuning has drawn attention to a map showing the lower course of the Scheldt River from Rupelmonde to the North Sea.¹⁹ It was ordered that it be made during a hearing of a dispute in 1468 over the collection of river tolls. By the sixteenth century, water was also important in some local economies as a source of power for driving mills. For these mills to be effective, river banks and weirs had to be kept in repair, and disagreements among landowners about who should pay for this and how the flow of water should be regulated caused much litigation in which maps were sometimes presented.²⁰ For example, Christo-

pher Saxton was commissioned to map part of the Calder River in Yorkshire in 1599 and 1601, as well as mills and watercourses in Harthill, Yorkshire, in 1605.²¹ His maps

18. George Lipscomb, *The History and Antiquities of the County of Buckingham*, 4 vols. (London: J. and W. Robins, 1847), 1:61, 305–32, 586–616; Herbert Clarence Schulz, “An Elizabethan Map of Wotton Underwood, Buckinghamshire,” *Huntington Library Quarterly* 3 (1939): 43–46; idem, “A Shakespeare Haunt in Bucks?” *Shakespeare Quarterly* 5 (1954): 177–78; and Elizabeth M. Elvey, *A Hand-List of Buckinghamshire Estate Maps* (Buckingham: Buckinghamshire Record Society, 1963), 56.

19. Keuning, “Cartography in the Netherlands,” 41.

20. Sarah Tyacke and John Huddy, *Christopher Saxton and Tudor Map-Making* (London: British Library Reference Division, 1980), 50.

21. Ifor M. Evans and Heather Lawrence, *Christopher Saxton, Elizabethan Map-Maker* (Wakefield, Eng.: Wakefield Historical Publications and Holland Press, 1979), 106–8; Heather Lawrence, “New Saxton Discoveries,” *Map Collector* 17 (1981): 30–31; and Heather

were used in long-running disputes about the siting of dams for fulling mills and the right to extract water for grain mills, respectively. However, in England, and likely in other European countries as well, most disputes concerned pretended or defended rights of pasture over land formerly considered common or waste, the boundaries of which were ill defined.

It might be expected that, as the demand for land increased, so did the number of maps generated by disputes. Contemporary textbook writers were aware of this relationship between litigation and the call for maps. English authors considered the matter from two viewpoints. First, as the surveyor Edward Worsop contended, bad maps constructed by a surveyor “not well instructed, studied and exercised in the sciences of geometrie and arithmetike” would themselves be a cause of more litigation.²² Second, an accurately surveyed estate map might act as a prophylactic to ward off attempts to pretend rights at some future date. There is some evidence that, by the end of the sixteenth century, in England at least, careful management required that maps of estates be compiled. As Eden put it, “Prudence dictated that it was preferable to map estates comprehensively in advance rather than wait until an emergency compelled hasty action.”²³ It may be noteworthy in such a context that Christopher Saxton spent several years surveying the Kent and Essex estates of Saint Thomas’s Hospital; in 1588 it was ordered that “Saxton the surveyor shall goe forward to Survey or mannrs in Kente as his leysure will serve him.”²⁴ Eden has suggested that All Souls College, Oxford, may have embarked on a similar program of surveying after problems with a lease, a consequence of the fact that the property had not been properly surveyed at the time it was let.²⁵

PROPERTY MAPS AND COLONIAL SETTLEMENT

Didactic treatises published in Europe and later in the colonies adapted Old World techniques to colonial needs, advocating in particular the compass traverse method for surveying new lands.²⁶ In 1610, the English surveyor William Folkingham dedicated his *Fevdigraphia* to “all Vnder-takers in the Plantation of Ireland or Virginia.”²⁷ One of the reasons John Love gave for writing his *Geodæsia* (1688) was that he had earlier seen “Young men, in *America*, often nonplus’d so, that their Books would not help them forward, particularly in *Carolina*, about Laying out Lands, when a certain quantity of Acres has been given to be laid out five or six times as broad as long.”²⁸ Whether textbooks such as his or Folkingham’s were actually read is another matter. If they were read, their advice on instruments and techniques must have been ignored, for early seventeenth-century colonial surveyors commonly estimated angles by eye and distances by pacing or using a slow-moving boat.²⁹ Furthermore,

the actual mapping accomplished during the period and reviewed in this chapter was but a fraction of that to come in eighteenth- and nineteenth-century North and South America, South Africa, Australia, and New Zealand. The experimental use of surveys and maps in the infant colonial world is reviewed briefly in this section by reference to English colonial surveys of confiscated lands in Elizabethan Ireland and to the use of surveys in the internal colonization of Germany and the colony of Virginia in North America.

Andrews notes that even at the end of the seventeenth century, “the making of large-scale property maps could not yet be described as a regular concomitant of Irish landownership.”³⁰ The turbulent political and social history of Ireland in the seventeenth century cut that country off from the mainstream of estate mapping developments in England. But at the end of the sixteenth century, some of the earliest experiments in the use of maps as models of the spatial organization of rural settlement were made in connection with the Munster plantation.³¹

Lawrence and Richard Hoyle, “New Maps and Surveys by Christopher Saxton,” *Yorkshire Archaeological Journal* 53 (1981): 51–56.

22. Edward Worsop, *A Discoverie of Sundrie Erroums and Faults Daily Committed by Landemeaters, Ignorant of Arithmeticke and Geometrie* (London: Gregorie Seton, 1582).

23. Peter Eden, “Three Elizabethan Estate Surveyors: Peter Kempe, Thomas Clerke, and Thomas Langdon,” in *English Map-Making, 1500–1650: Historical Essays*, ed. Sarah Tyacke (London: British Library, 1983), 68–84, esp. 77.

24. Evans and Lawrence, *Christopher Saxton*, 82.

25. Eden, “Three Elizabethan Estate Surveyors,” 77. By contrast, Christ Church, Oxford, “might be seen as a laggard adopter of estate maps”; see David H. Fletcher, *The Emergence of Estate Maps: Christ Church, Oxford, 1600 to 1840* (Oxford: Clarendon, 1995), 11.

26. For example, Richard Norwood, *The Sea-Mans Practice, Contayning a Fvndamentall Probleme in Navigation, Experimentally Verified: Namely, Touching the Compasse of the Earth and Sea, and the Quantity of a Degree in Our English Measures* (London: Printed for George Hurlock, 1637); see also John Barry Love, “The Colonial Surveyor in Pennsylvania” (Ph.D. diss., University of Pennsylvania, 1970), 15–19.

27. W. Folkingham, *Fevdigraphia: The Synopsis or Epitome of Surveying Methodized* (London: Printed for Richard Moore, 1610), title page.

28. John Love, *Geodæsia; or, The Art of Surveying and Measuring of Land, Made Easie* (London: Printed for John Taylor, 1688), preface.

29. Carville Earle, *The Evolution of a Tidewater Settlement System: All Hallow’s Parish, Maryland, 1650–1783* (Chicago: University of Chicago, Department of Geography, 1975), 182–202.

30. J. H. Andrews, “Henry Pratt, Surveyor of Kerry Estates,” *Journal of the Kerry Archaeological and Historical Society* 13 (1980): 5–38, esp. 5; see also idem, *Plantation Acres: An Historical Study of the Irish Land Surveyor and His Maps* (Belfast: Ulster Historical Foundation, 1985), 28–51.

31. J. H. Andrews, “Geography and Government in Elizabethan Ireland,” in *Irish Geographical Studies in Honour of E. Estyn Evans*, ed. Nicholas Stephens and Robin E. Glasscock (Belfast: Queen’s University of Belfast, 1970), 178–91.

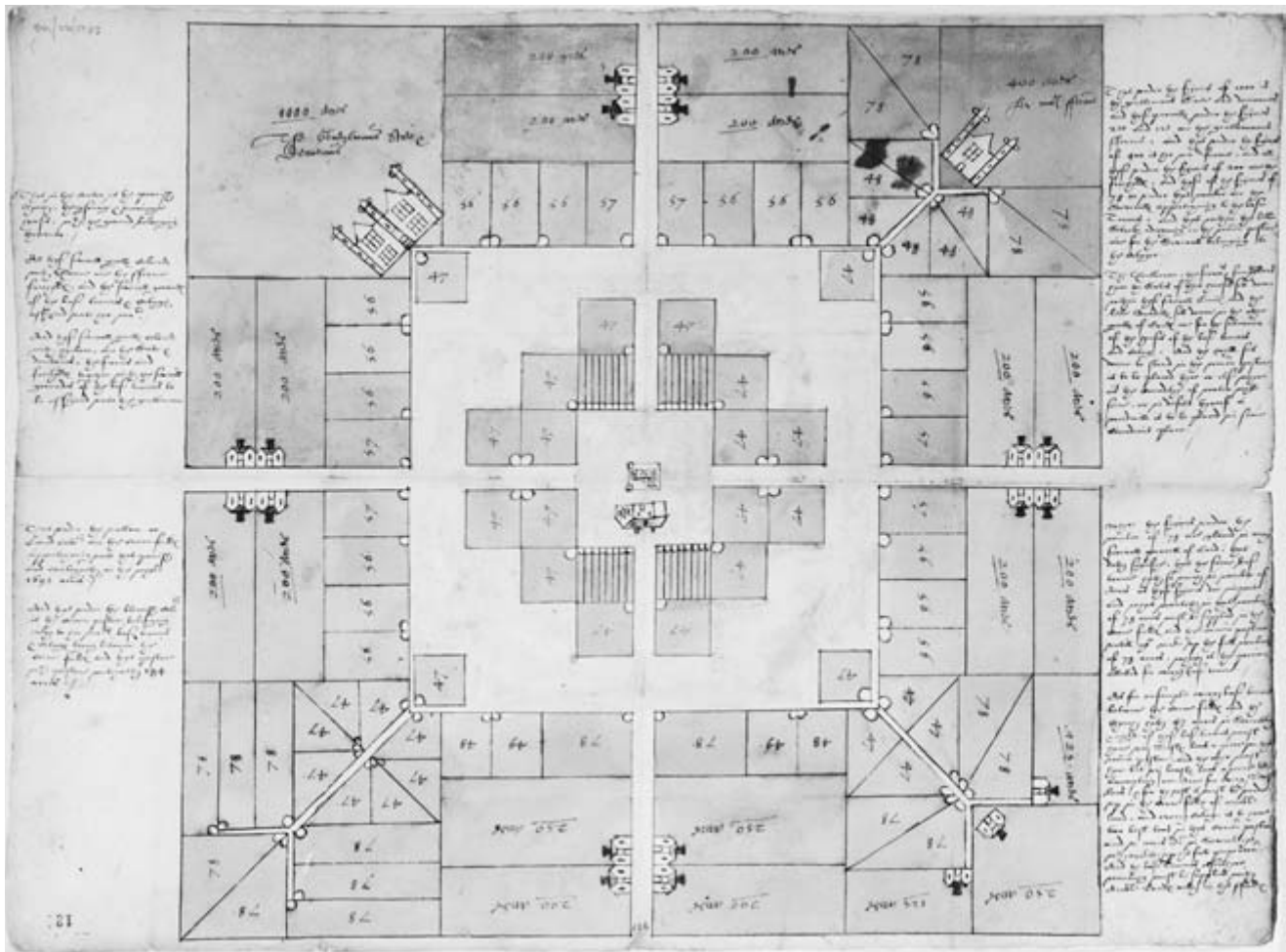


FIG. 28.2. DIAGRAM OF A SEIGNORY FOR THE MUNSTER PLANTATION, 1585–86. The map served as a model of the spatial organization of rural settlement. The numbers on

the map indicate acreages.

Size of the original: ca. 42.9 × 57.9 cm. Photograph courtesy of The National Archives of the UK (TNA), Kew (MPF 305).

Each Munster seignory (large estate) was initially intended to contain twelve thousand acres, and a plan was drawn to illustrate its division into a range of different-sized holdings for a balanced rural society (fig. 28.2). In 1585, a tiny band of surveyors set about making the surveys that were to be used to allocate confiscated lands to English settlers. The terrain was difficult, the countryside overgrown, the local population generally hostile: all characteristics, in fact, encountered later by colonial surveyors across the Atlantic. But in Ireland, as in North America, the advantage of a map, in the words of Arthur Robins, one of the surveyors, was to show how the land might “most aptest be laid out into seignories,” which helped prevent estates from becoming excessively intermixed.³² In the implementation of this ideal, there were temptations for surveyors to take shortcuts, to substitute estimates for measurements, while colonizers thought they were being cheated out of what they perceived to be

precious acres. In fact, there was no shortage of land at that time in Ireland. Little was achieved in Elizabethan Munster, but the method of plotting the results of a survey on maps was used again when almost half the country was confiscated after the 1641 rebellion. This resulted in the parish-based Down Survey (1655–57), directed by Sir William Petty.³³ The large-scale maps of the Down Survey record the boundaries of forfeited town lands and

32. Quoted in Andrews, “Geography and Government,” 189.

33. Séan Ó Domhnaill, “The Maps of the Down Survey,” *Irish Historical Studies* 3 (1943): 381–92; J. H. Andrews, *Ireland in Maps* (Dublin: Dolmen Press, 1961), 9–11; idem, “Ireland in Maps: A Bibliographical Postscript,” *Irish Geography* 4 (1962): 234–43, esp. 237–38; Alan R. H. Baker and Robin A. Butlin, “Introduction: Materials and Methods,” in *Studies of Field Systems in the British Isles*, ed. Alan R. H. Baker and Robin A. Butlin (Cambridge: Cambridge University Press, 1973), 1–40, esp. 12; and Andrews, *Plantation Acres*, 63–73.

contain an inventory of land classified as cultivable, bog, mountain, or wood.

Property maps were also associated with early programs of internal colonization in Europe. In Germany, the Reformation brought changes in landownership and displaced groups of refugees, and these changes encouraged colonization schemes. For example, Wilhelm IV, landgrave of Hesse-Kassel, acquired the lands of a Cistercian monastery that had been dissolved in 1527. In 1580, he commissioned a map of the land that was used to organize the foundation and settlement of the new village of Wilhelmshausen.³⁴

In the North American colony of Virginia, it was a legal requirement from 1642 that all surveyors “deliver an exact plott of each parcell surveyed and measured.”³⁵ This enactment coincided with a period of disputes over boundaries; from the 1640s a series of government measures was designed to tighten up surveying and land title procedures. Once land was cleared and settled and became valued as a resource in the true sense of that word, careless surveying could no longer be tolerated. When land was thought of as limitless, there was little incentive for accurate surveying. Social and economic changes in the seventeenth century enhanced the value of surveying and established a critical role for property maps in the process of land settlement. By the mid-seventeenth century, some Virginia land plats, complete with ornamentation, color coding, and use of conventional signs, seem also to have acquired the same symbolic meaning as English estate maps of this period.

CADASTRAL MAPS IN TAXATION REFORM AND THE EVALUATION OF STATE LAND RESOURCES

During the seventeenth century, a number of European governments adopted maps as a means of assessing and recording the tax liability of land. These cadastral maps can be distinguished from estate maps by their inclusion of all the properties in a particular administrative unit, such as a parish, canton, or province, rather than only the land of an individual manor or estate. Some of the earliest state-sponsored, mapped cadastres are from the Netherlands, where maps were used in the sixteenth century in association with polder making. The proposed cadastral patterns that they displayed were used to persuade potential shareholders to invest in the projects and to allot newly formed land plots, and then they served as visual displays for those who had invested in the new land.³⁶

Rudimentary taxation cadastres are known in Hainaut from as early as 1604. In 1633, the surveyors Ange Stoedt and Jacques Michiels were commissioned to revise the cadastre of the Seigneurie de Flandre.³⁷ Large-scale maps of state and peasant holdings in central and south Swe-

den were made from the 1630s onward (fig. 28.3).³⁸ Between 1639 and 1641, in what is now Denmark, Johannes Mejer mapped sixty-three townships in the province of Åbenrå for the duchies of Schleswig and Holstein.³⁹ Such initiatives can be counted as part of the pre-history of the eighteenth-century European cadastral “take-off,” which will be examined in volume 4 of *The History of Cartography*. They can be related to the fact that, by the seventeenth century, taxes in some provinces were being more closely identified with the land that generated wealth than with the individuals who farmed the land or the communities that inhabited it. For example, a 1585 decree in the Franc de Bruges discontinued the tax on individual wealth and work and replaced this with a land tax, with the result that the *arpent* (equivalent to 1.5 statute acres) became the base unit of the levy.⁴⁰ Cadastral maps provided a parsimonious and accurate means of both fairly assessing, and permanently recording, the tax liabilities of particular pieces of land.

By the seventeenth century, the deforestation of much of western and southern Europe by agriculture and demands for fuel, building, and constructional timber was a matter of growing government concern. Even in Sweden, with her seemingly limitless softwoods, the charcoal burner had made considerable inroads.⁴¹ In England, John Evelyn lectured to the Royal Society on what he

34. R. J. P. Kain and Elizabeth Baigent, *The Cadastral Map in the Service of the State: A History of Property Mapping* (Chicago: University of Chicago Press, 1992), 132–35.

35. Quoted in Sarah S. Hughes, *Surveyors and Statesmen: Land Measuring in Colonial Virginia* (Richmond: Virginia Surveyors Foundation, Virginia Association of Surveyors, 1979), 48.

36. Kain and Baigent, *Cadastral Map*, 11–23.

37. Georges Bigwood, “Matricules & cadastres: Aperçu sur l’organisation du cadastre en Flandre, Brabant, Limbourg et Luxembourg avant la domination française,” *Annales de la Société d’Archéologie de Bruxelles* 12 (1898): 388–411, and L. Marstboom, R. Bourlon, and E. Jacobs, *Le cadastre et l’impôt foncier* (Brussels: Lielens, 1956).

38. Karl Erik Bergsten, “Sweden,” in *A Geography of Norden: Denmark, Finland, Iceland, Norway, Sweden*, rev. ed., ed. Axel Christian Zetlitz Sømme (Oslo: J. W. Cappelens, 1961), 293–349, esp. 299–300; Ulla Göranson, “Land Use and Settlement Patterns in the Mälars Area of Sweden before the Foundation of Villages,” in *Period and Place: Research Methods in Historical Geography*, ed. Alan R. H. Baker and Mark Billinge (Cambridge: Cambridge University Press, 1982), 155–63; and Elizabeth Baigent, “Swedish Cadastral Mapping, 1628–1700: A Neglected Legacy,” *Geographical Journal* 156 (1990): 62–69.

39. Aakjær, “Villages, cadastres et plans parcellaires au Danemark,” and Johannes Mejer, *Johannes Mejers kort over det Danske rige*, 3 vols., ed. Niels Erik Nørlund (Copenhagen: Ejnar Munksgaard, 1942), vol. 3.

40. Roger Schonaeerts and Jean Mosselmans, eds., *Les géomètres-arpenteurs du XVI^e au XVIII^e siècle dans nos provinces*, exhibition catalog (Brussels: Bibliothèque Royale Albert I^{er}, 1976), xxxvi.

41. Norman John Greville Pounds, *An Historical Geography of Europe, 1500–1840* (Cambridge: Cambridge University Press, 1979), 202, and W. R. Mead, *An Historical Geography of Scandinavia* (London: Academic Press, 1981), 77–81.



FIG. 28.3. GEOMETRISKA JORDEBOK MAP OF VÄVERSUNDA IN DAL'S HUNDRED, ÖSTERGÖTLAND, SWEDEN, BY JOHAN LARSSON GROTT, 1633–34. The cadastral mapping of Gustav II Adolphus's Sweden began in

1628 and was undertaken to record the nation's land resources. Size of the original: ca. 45 × 60 cm. Photograph courtesy of the Landmåteriverket, Gävle (LMV D6, fols. 35–36).

termed “this im-politick diminution of our *Timber*.”⁴² Governments commissioned surveys of their dwindling forest resources, and some of these employed a cartographic base. In Russia, the forests around Bolkhov were measured and mapped in 1647, and the program had been extended to other areas of Russia by the 1670s.⁴³ In France, a number of royal forests had been mapped by the second half of the sixteenth century; a map of the *forêt* of Chantilly dated to the end of the fifteenth century is one of the earliest produced.⁴⁴ Many of these forest maps distinguish timber from coppice trees, and old trees from young plantations, by means of color or symbol to provide an inventory of the forest resource.⁴⁵ During the seventeenth century, French woodland reserves were further

diminished and their precise extent rendered uncertain by fires, military destruction, and illicit felling. After Jean-Baptiste Colbert was given charge of Louis XIV's royal forests, he instituted a wide-ranging program of forest reform in 1662–63. One element of this program was the

42. John Evelyn, *Sylva; or, A Discourse of Forest-Trees, and the Propagation of Timber in His Majesties Dominions* (London: Printed by Jo. Martyn, and Ja. Allestry, printers to the Royal Society, 1664), 1.
 43. Leo Bagrow, *A History of Russian Cartography up to 1800*, ed. Henry W. Castner (Wolfe Island, Ont.: Walker Press, 1975), 2.
 44. François de Dainville, *Le langage des géographes: Termes, signes, couleurs des cartes anciennes, 1500–1800* (Paris: A. et J. Picard, 1964), 50.
 45. Broc, *La géographie de la Renaissance*, 135.

compilation of a complete cartographic inventory of the royal forests. The resulting maps were said to be “an exact description of the complete extent of forests, specifying their area in *arpents*, and detailing their lines of subdivision, the nature of the trees with which each is planted—whether with timber or coppice—and noting their age and whether of strong or weak, stunted growth.”⁴⁶ The maps were used to regulate the felling and sale of timber; their continued use into the eighteenth century is attested by the many hundreds of tracings, reductions, copies, and recopies that were made.⁴⁷

Experimentation with map-based taxation cadastres and these French maps of forest reserves indicate that in the seventeenth century European governments and provincial rulers not only were adopting maps for plotting national strategy and organizing fortification and warfare, but also were using large-scale maps as land inventories. But a cartographic approach was not yet an inevitable concomitant of government-sponsored rural land surveys. The parliamentary surveys of sequestered estates in map-conscious seventeenth-century England were conducted by means of written descriptions and valuations alone.⁴⁸

PROPERTY MAPS AND AGRARIAN IMPROVEMENT

Samuel Hartlib wrote of Elizabethan England that “*Ingeniuties, Curiosities, and Good Husbandry*, began to take place, and then *Salt-Marshes* began to be fenced from the Seas.”⁴⁹ On the European continent, about forty thousand hectares were reclaimed on the German coast of the North Sea in the sixteenth and early seventeenth centuries.⁵⁰ In 1545, the Venetian government instituted the *Officio dei Beni Inculti* to supervise reclamation and drainage works in the valleys of the Veneto. Maps were important aids in the planning and execution of their schemes. For example, in 1570 the cartographer Panfilo Piazzola was commissioned to compile a map of the Menago River lowlands. His map, drawn at a scale of 1:15,000, distinguishes land liable to flood from existing tilled lands, and records the pattern of land ownership (fig. 28.4).⁵¹ In England, administrators were also conscious of the value of maps in land drainage schemes. Skelton cites a number of references in sixteenth-century documents to items such as “a platt of the country” or a plot of “the drayne.”⁵²

In the seventeenth century, in much the same way as maps proved useful for planning the alignment of new drainage channels and associated works, they were used, albeit in more limited contexts, for planning irrigation projects. Managing water meadows to promote early grass growth for overwintered stock is one of the six “improvements” discussed by Walter Blith in his *English Improver* (1649). Blith counseled his would-be improver to

“Plot out thy Land, into such a Modell or Platforme as thou mayst be sure that all thy Land thou designest to this Improvement, may not faile therein” and “Take a most exact Survey of thy Water, not by the Eye onely.”⁵³

If the use of maps in water management programs was a general phenomenon throughout Europe, the employment of maps by sixteenth- and seventeenth-century enclosers of formerly open-field arable and meadow land was effectively restricted to England and Wales. It might seem obvious that maps should have been used to assist with the reorganization and reallocation of thousands of land parcels and then to record the postenclosure cadastre. In practice, however, most land was satisfactorily enclosed with only a written *terrier* to place a particular strip in the context of its furlong and field. The extent of English land affected by enclosures in the sixteenth century and the early seventeenth, and thus the scale of the mapmaking opportunity, should also not be overestimated; enclosures may have affected only about 3 percent of agricultural land.⁵⁴ However, the message promulgated by sixteenth- and seventeenth-century English surveying textbooks is a clear one: enclosure was a distinct agricultural improvement and could be done better with accu-

46. Louis de Froidour, *Instruction pour les ventes des bois du roy*, 2d ed. (Paris: Chez Brunet, 1759).

47. Roger Hervé, “Les plans de forêts de la grande réformation Colbertienne, 1661–1690,” *Bulletin de la Section de Géographie* 73 (1960): 143–71; Henri de Coincy, “Les archives toulousaines de la réformation générale des eaux et forêts,” *Le Bibliographe Moderne* 21 (1922–23): 161–82; François de Dainville, *Cartes anciennes du Languedoc, XVI–XVIII^e s.* (Montpellier: Société Languedocienne de Géographie, 1961), 66–72; and *De l’île-de-France rurale à la grande ville*, exhibition catalog (Paris: Bibliothèque Nationale, 1975).

48. Sidney Joseph Madge, *The Domesday of Crown Lands: A Study of the Legislation, Surveys, and Sales of Royal Estates under the Commonwealth* (London: George Routledge and Sons, 1938), 133–40.

49. Samuel Hartlib, *Samuel Hartlib, His Legacy of Husbandry*, 3d ed. (London: Printed by J. M. for Richard Wodnothe, 1655), 41, quoted in H. C. Darby, *The Draining of the Fens*, 2d ed. (Cambridge: Cambridge University Press, 1956), 28.

50. Wilhelm Abel, *Agricultural Fluctuations in Europe from the Thirteenth to the Twentieth Centuries*, trans. Olive Ordish (London: Methuen, 1980), 104.

51. Silvino Salgato, “Il governo delle acque nella pianura Veronese da una carta del XVI secolo,” *Bollettino della Società Geografica Italiana* 117 (1980): 327–50.

52. R. A. Skelton and John Newenham Summerson, *A Description of Maps and Architectural Drawings in the Collection Made by William Cecil, First Baron Burghley, Now at Hatfield House* (Oxford: Roxburghe Club, 1971), 53.

53. Walter Blith, *The English Improver; or, A New Survey of Husbandry* (London: Printed for J. Wright, 1649), 24, and idem, *The English Improver Improved; or, The Survey of Husbandry Surveyed* (London: Printed for John Wright, 1652).

54. R. J. P. Kain, John Chapman, and Richard R. Oliver, *The Enclosure Maps of England and Wales, 1595–1918: A Cartographic Analysis and Electronic Catalogue* (Cambridge: Cambridge University Press, 2004).

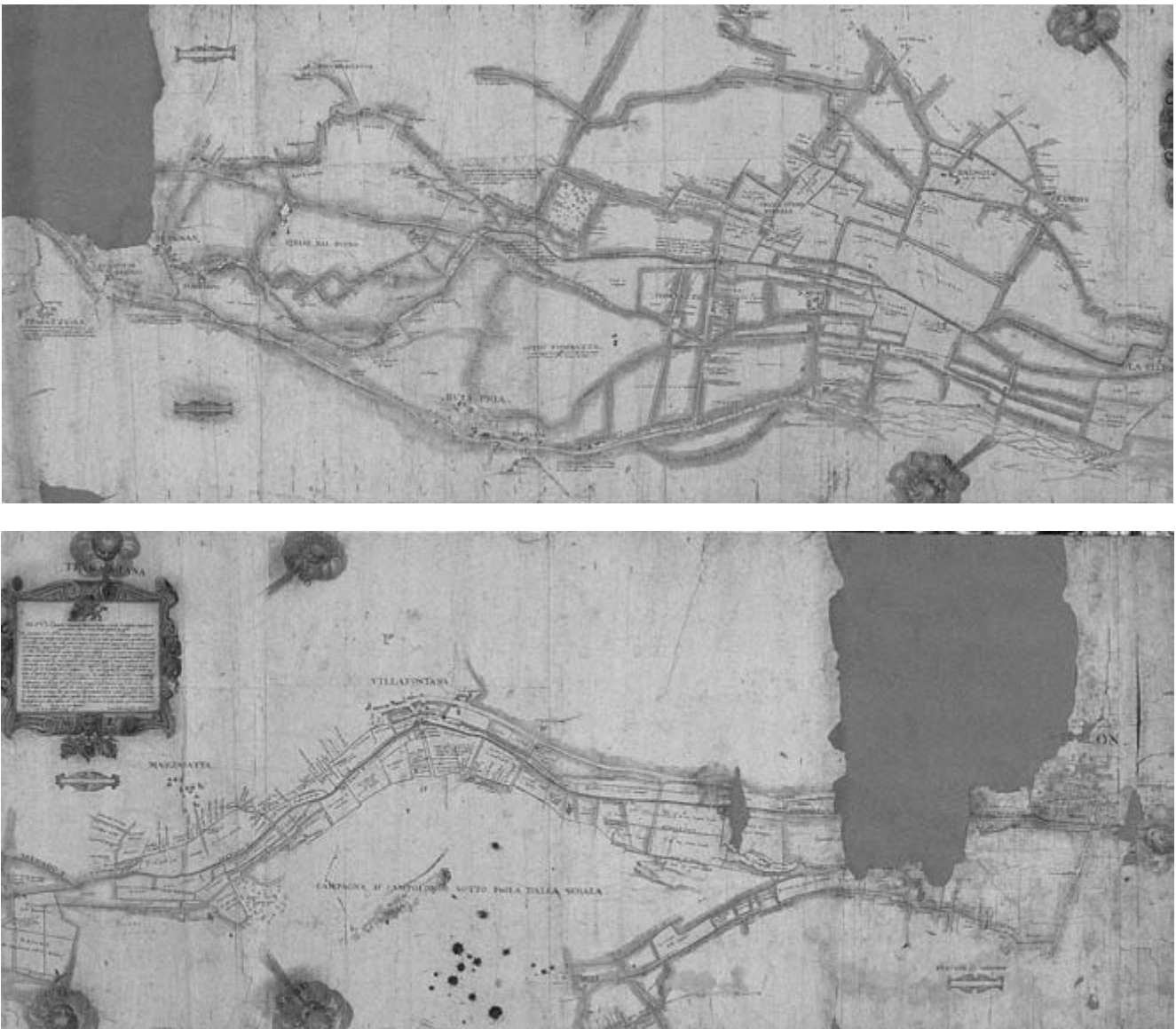


FIG. 28.4. MAP OF THE MENAGO RIVER LOWLANDS IN THE VENETO, ITALY, BY PANFILO PIAZZOLA, CA. 1570. This long map, shown here in two parts, distinguishes land liable to flood, the existing tilled lands, and land ownership.

Size of the original: ca. 66.5 × 303.8 cm. Photograph courtesy of the Archivio di Stato, Venice (Provveditori sopra Beni Inculti, disegni Verona, 126/107/7).

rate measurement and maps. In Darby's words, land surveyors were the "great panegyrist of enclosing."⁵⁵

One of the most potent contributions that surveyors made to agricultural improvement in the early modern period stemmed not so much from the maps that they made as from the dissemination of wisdom distilled from their practical experience in different rural economies. In this sense, the surveyor was much more than a mechanical measurer and mapper of landed property.⁵⁶ Circumstantial evidence of the relationship between surveying and agricultural improvement appears in figure 28.5, which records the intensity of surveying activity in En-

glish counties between 1470 and 1640.⁵⁷ The contrast between the grass growing in the west and northwest parts

55. H. C. Darby, "The Agrarian Contribution to Surveying in England," *Geographical Journal* 82 (1933): 529–35, esp. 530. See also McRae, *God Speed the Plough*, 135–68.

56. P. D. A. Harvey, "English Estate Maps: Their Early History and Their Use as Historical Evidence," in *Rural Images*, 27–61, and Delano-Smith and Kain, *English Maps*, 117–18.

57. The map was included in Elizabeth Baigent and R. J. P. Kain, "Cadastral Maps in the Service of the State," paper presented at the 14th International Conference on the History of Cartography, Uppsala and Stockholm, 14–19 June 1991.

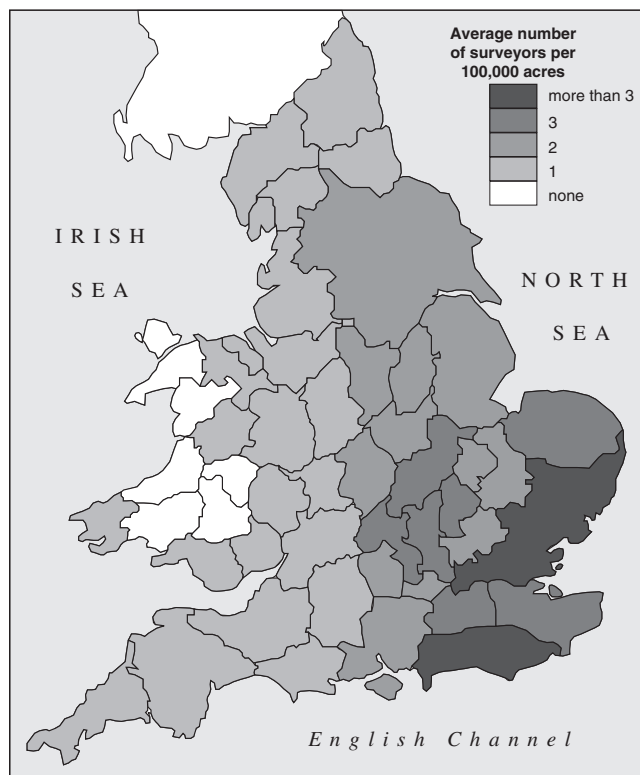


FIG. 28.5. SURVEYING ACTIVITY IN ENGLAND AND WALES, 1470–1640. Compiled with the assistance of Rodney Fry and Sarah A. H. Wilmot, University of Exeter, from entries in Peter Eden, ed., *Dictionary of Land Surveyors and Local Cartographers of Great Britain and Ireland, 1550–1850*, 4 vols. (Folkestone, Eng.: Dawson, 1975–79).

of England and the mixed farming in the south and east parts of the country is mirrored in this map of surveying activity.⁵⁸ It can be argued that it was market opportunity that encouraged agricultural improvement and that agricultural improvement, in turn, generated commissions for estate maps. It is for such reasons that Adams explains the lack of Scottish estate surveys in this period: “There was little agricultural improvement to require plans [because] the traditional infield-outfield system remained wholly unchanged until the eighteenth century.”⁵⁹ Despite the presence of vast landed estates, Buisseret says that “it seems virtually certain that no estate maps were drawn in Spain before the eighteenth century.”⁶⁰ The explanation given is the absence of a sense of capitalist production until this late date.

Although English writers on surveying discuss agricultural improvement, the three principal seventeenth-century English farming textbooks do not include mapping in their agenda for agricultural improvement. They focus instead on matters such as the cultivation of new fallow crops, marling and manuring, convertible husbandry, and stockbreeding.⁶¹ The only explicitly agricultural textbook to include surveying instructions was Richard Surflét’s

translation (1600) of Charles Estienne’s and Jean Liébault’s *L’agriculture et maison rustique*.⁶² The authors accepted that land surveying belonged more properly to the “Geometrician” than to the husbandman, but, so that the master of “this our Countrie Farme should not be ignorant of anything which may serue for the enriching his house,” they provided “certaine rules of Measuring, [which are] very common with vs here in France, and wherewith the Farmer, in case of necessitie, and for his commoditie, may helpe himselfe.” Survey by chain and “Squire” is described, the instruments are illustrated, and a surveyor and his assistants are shown at work in the field. For work requiring a greater degree of accuracy than their simple methods could provide, the authors said the farmer “must haue recourse vnto the professed skillfull in measuring.”⁶³

From what has been said, it might be thought possible to point to a causal relationship between surveying and mapping and agricultural improvement. It is more difficult, however, to document instances of maps’ actually being used in the everyday running of an agricultural estate. That some maps were used frequently in estate offices can be substantiated by the nature of the wear and damage that they have suffered. Harvey deduces that an Elizabethan map of manors in north Dorset was probably drawn for the use of the occupants of Sherborne Castle, “for the map is rubbed at this point, as though from frequent handling.”⁶⁴ In 1593, William Cecil (Lord Burghley) added notes about land use and tenure to an estate map of Cliffe Park, Northamptonshire.⁶⁵ Christo-

58. Delano-Smith and Kain, *English Maps*, 118–19.

59. Ian H. Adams, “Large-Scale Manuscript Plans in Scotland,” *Journal of the Society of Archivists* 3 (1967): 286–90, esp. 286. See also Ian H. Adams, “Economic Progress and the Scottish Land Surveyor,” *Imago Mundi* 27 (1975): 13–18, and idem, “The Agents of Agricultural Change,” in *The Making of the Scottish Countryside*, ed. M. L. Parry and T. R. Slater (London: Croom Helm, 1980), 155–75.

60. David Buisseret, “The Estate Map in the Old World,” in *Rural Images*, 5–26, esp. 6.

61. Gervase Markham, *The English Husbandman: The First Part, Contayning the Knowledge of Euery Soyle within this Kingdom . . . Together with the Art of Planting, Grafting, and Gardening after Our Latest and Rarest Fashion* (London: Printed by T. S. for John Browne, 1613); Blith, *English Improver and English Improver Improved*; and Hartlib, *Legacy of Husbandry*. See also George Edwin Fussell, *The Old English Farming Books from Fitzherbert to Tull, 1523 to 1730* (London: Crosby Lockwood, 1947), and Erik Kerridge, *The Agricultural Revolution* (London: George Allen and Unwin, 1967).

62. Charles Estienne and Jean Liébault, *Maison rustique; or, The Countrie Farme*, trans. Richard Surflét (London, 1600); see Bibliothèque Nationale, *Les travaux et les jours dans l’ancienne France*, exhibition catalog (Paris: [J. Dumoulin], 1939), 63–73.

63. Estienne and Liébault, *Countrie Farme*, quotations on 651 and 663.

64. P. D. A. Harvey, “An Elizabethan Map of Manors in North Dorset,” *British Museum Quarterly* 29 (1965): 82–84, esp. 83.

65. Eden, “Three Elizabethan Estate Surveyors,” 70.

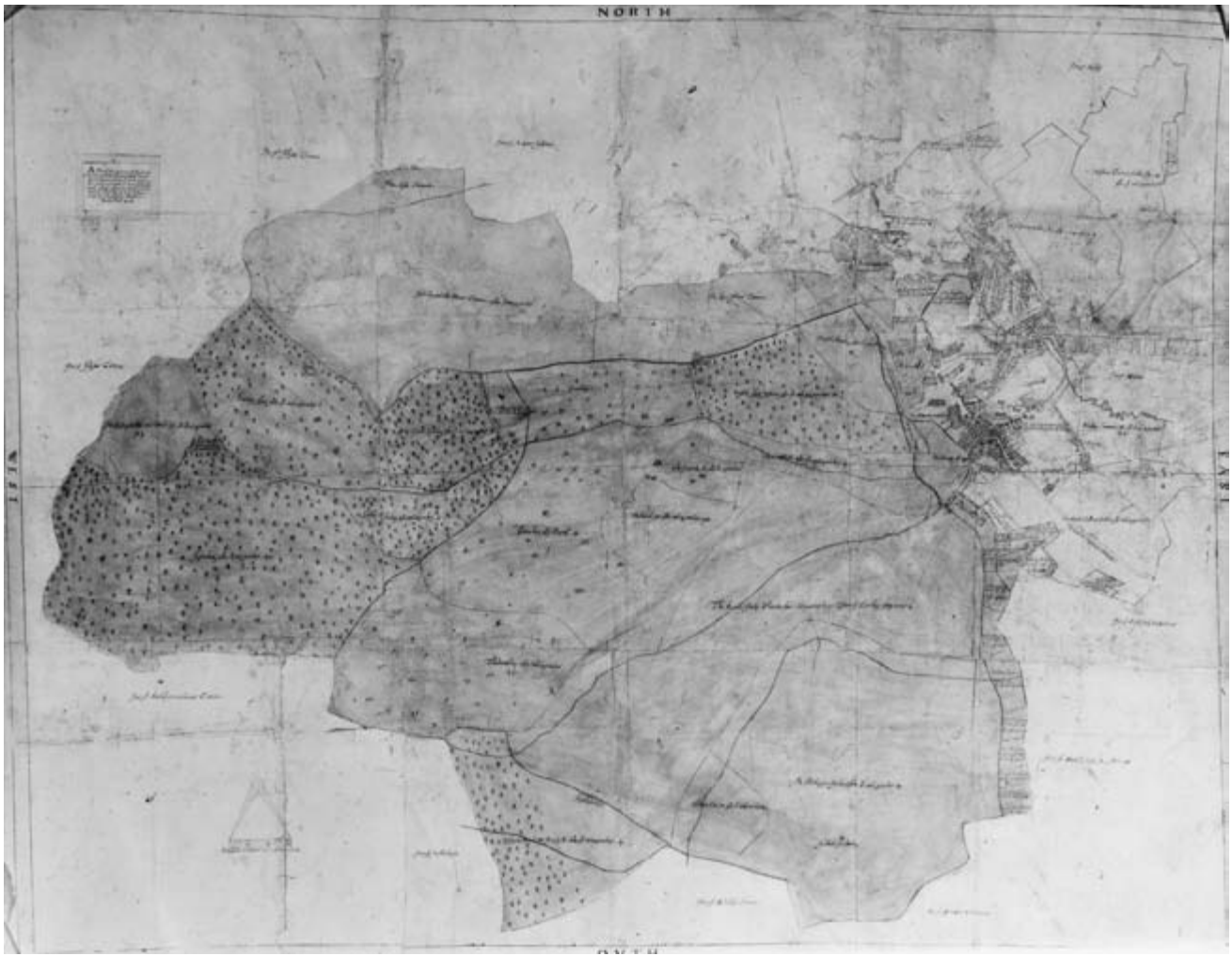


FIG. 28.6. SPOFFORTH, YORKSHIRE, ENGLAND, BY CHRISTOPHER SAXTON, 1608. "A Plat of the Mannor of Spoforde [Spofforth] Wherein all the Demanes and Wood groundes are colored with Grene, the Inclosures and Commonfeilds with red, the Common with yelowe and the Freholders Left White. Made by Christofer Saxton A. nno Dni:

1608." A, M, and P are used to indicate arable, meadow, and pasture land, and symbols are found in some fields, perhaps indicating land quality.

Photograph courtesy Collection of the Duke of Northumberland, Alnwick Castle (MSS. X.II.6.34, no. 3).

pher Saxton's map of Saint Thomas's Hospital manor of Aveley in Essex has "suffered the effects of use possibly in the field, as indicated by the heavy folding."⁶⁶ The fact that a new copy of Saxton's map was needed in 1782 indicates that the original map was still in use some two centuries later. Similarly, Thomas Langdon's map of Salford in Bedfordshire (1596) was still being used in the All Souls College estate office in 1769.⁶⁷ Sometimes the old maps provided a base on which to plan later changes. When the manor of Wotton Underwood in Buckinghamshire was about to be landscaped in 1649, the park and avenues leading to a new house were set out on a map superimposed over the soon-to-be-changed landscape.⁶⁸ Perhaps one of the clearest instances of the use of a map for management in the early seventeenth century comes

from the estates of the earl of Northumberland. Christopher Saxton's map of the property at Spofforth, Yorkshire, names the tenants and records the use of most of the fields either by name or by means of an initial letter code. Saxton also used symbols on the map, probably to indicate relative soil quality field by field (fig. 28.6).⁶⁹ These maps, together with others of the duke's properties

66. Tyacke and Huddy, *Christopher Saxton*, 48.

67. M. W. Beresford, *History on the Ground: Six Studies in Maps and Landscapes*, rev. ed. (London: Methuen, 1971), 90.

68. Elvey, *Buckinghamshire Estate Maps*, 56.

69. G. R. Batho, "Two Newly Discovered Manuscript Maps by Christopher Saxton," *Geographical Journal* 125 (1959): 70–74, and R. A. Butlin, "Northumberland Field Systems," *Agricultural History Review* 12 (1964): 99–120.

made by his estate surveyor Robert Norton in the early seventeenth century, were an integral part of the program of estate management and were not inconsiderable in terms of annual estate expenditure.⁷⁰ In 1609, Henry Percy, ninth earl of Northumberland, wrote to advise his son on estate management, setting out as a first principle the necessity to “understand your estate generally better than any one of your officers. . . . I have so explained and laboured by books of surveys, plots of manors, and records, that the fault will be your own, if you understand them not in a very short time better than any servant you have.”⁷¹

PROPERTY MAPS: A RESPONSE TO THE INCREASING FISCAL AND SYMBOLIC VALUE OF LAND

A number of instances of the use of large-scale property maps have been identified in this chapter, albeit from a possibly unrepresentative sample of countries. In no case, though, was the employment of a map absolutely indispensable. Land title could be granted without a map, and in North America it was. Property taxes could be collected without a cadastral map base, and in Europe it had been for centuries; in some countries, they continued to be so levied well into the modern period. The buying and selling of land; its drainage and improvement for tillage or pasture; and its enclosure, valuation, and day-to-day management had been, and continued to be, carried on successfully without maps. The stewards of medieval estates had done all these things without maps, and many of their successors worked without maps throughout the early modern period. As has been shown, maps may be aids for decision making and may serve as records, but why their use became so widespread and commonplace that in many regions they survive in vast numbers, despite their fragility and heavy use, is a question that still has to be answered.

Part of the explanation for the making of maps of rural property surely lies in the rising monetary and symbolic value of land itself in the sixteenth and seventeenth centuries. Demand for land as a factor in production and as symbolic space may well have been the motor that drove the early modern European property mapping revolution as feudalism gave way to capitalism and the associated commodification of land. Several factors of production were involved. Throughout western Europe, the sixteenth century was characterized by agricultural expansion. In most places, this had halted by about the middle of the seventeenth century, from which point some sectors experienced crisis, recession, and an actual contraction.⁷² The early modern period was also a time of price inflation brought about by the interaction of increases in money supply and population growth and the concomitant de-

mand for more food and goods. Land was a profitable investment, and rent tended to increase faster than production or prices. Investment in land was also a means of social advancement, a way by which an urban merchant or manufacturer could approach, if perhaps not attain, the noble status to which he aspired. In England's Tudor and Stuart age of mansion building, the possession of land was a prime indication of social status as the non-pecuniary aspects of land owning became more highly valued.⁷³ There was plenty of land in Europe for aspiring social climbers to buy, not the least from aristocrats whose extravagances at the royal court of France had proved too much for their estate revenues.⁷⁴ In Saxony, “mine-owners, merchants, cloth manufacturers, even university professors and upper civil servants were buying farms or sometimes knight's estates.”⁷⁵

Increasing rents made imperative a clearer and more accurate delineation of property boundaries. Containing the measured acreage of each field, perhaps an indication of land use, and the name of each tenant either on the face of the map or written in an attached table of explanation, estate maps were probably not sufficiently sophisticated to be of great use in the context of making detailed husbandry decisions related to planning crop rotations or even which fields to make arable or pasture, but they could be used to assess and fix a rent per acre on a particular parcel of land.⁷⁶ A map might also reveal tenants' concealments or infringements, matters that in the past might have been overlooked but that, with the rising value of land, could no longer be afforded. The quest for survey and map accuracy brought about by increasing land values was a spur that improved instruments and the technical execution of surveys. Where land was plentiful and its monetary value insignificant, as in colonial Virginia, there was at first no inducement to sharpen accuracy or to discontinue the use of what were, by European standards, outdated methods and obsolete equipment. But in England, as Thompson has said, “to be in possession of a factual record which could be used to halt any stealthy renegeing on their obligations on the part of tenants, became a burning issue to sixteenth-century land-

70. G. R. Batho, “The Finances of an Elizabethan Nobleman: Henry Percy, Ninth Earl of Northumberland (1564–1632),” *Economic History Review*, 2d ser., 9 (1957): 433–50.

71. Quoted in Batho, “Manuscript Maps,” 72.

72. B. H. Slicher van Bath, *The Agrarian History of Western Europe, A. D. 500–1850*, trans. Olive Ordish (London: Edward Arnold, 1963), 206–20.

73. Peter J. Bowden, “Agricultural Prices, Farm Profits and Rents,” in *The Agrarian History of England and Wales*, ed. H. P. R. Finberg (Cambridge: Cambridge University Press, 1967–), 4:593–695, esp. 674.

74. Gaston Roupnel, *La ville et la campagne au XVII^e siècle: Étude sur les populations du pays dijonnais* (Paris: Armand Colin, 1955).

75. Abel, *Agricultural Fluctuations*, 132.

76. Delano-Smith and Kain, *English Maps*, 121–24.

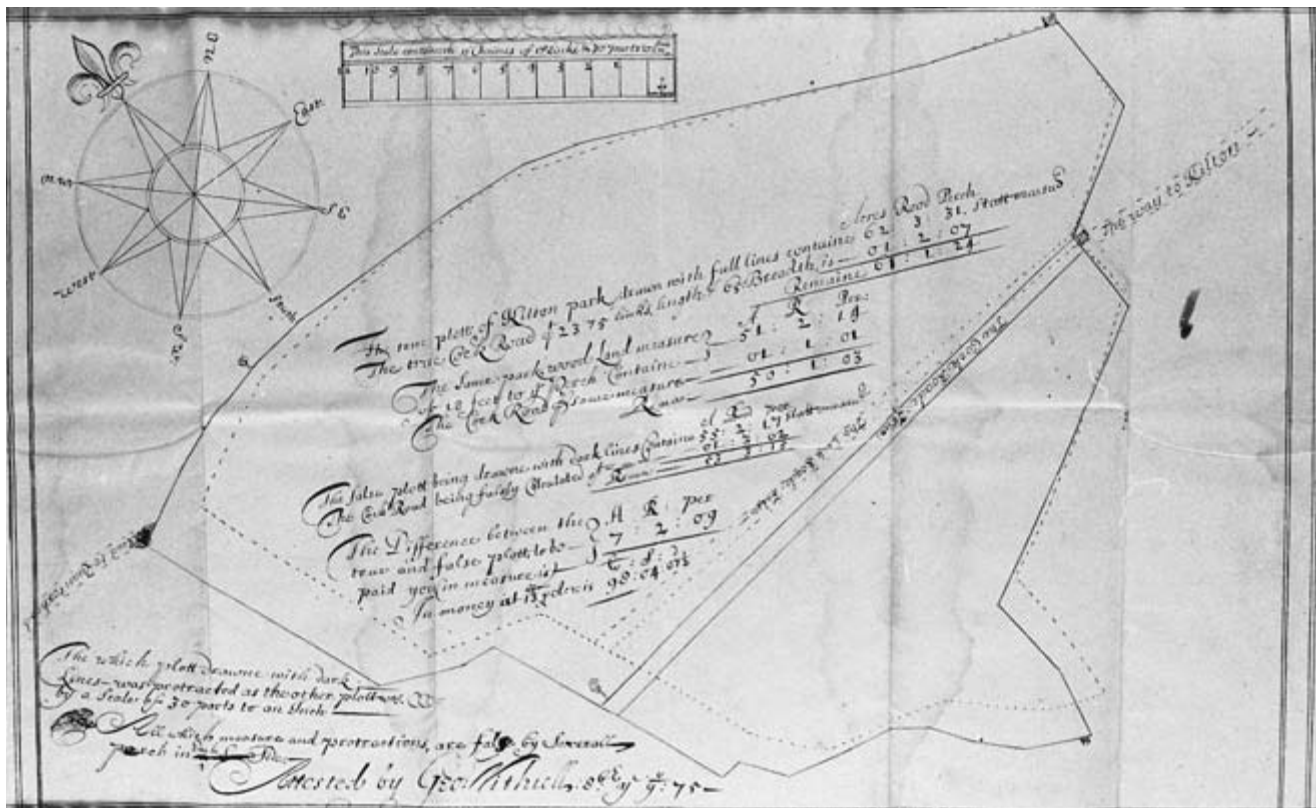


FIG. 28.7. KILTON PARK, SOMERSET, ENGLAND, BY GEORGE WITHIELL, LATE SEVENTEENTH CENTURY. This map was used to clarify acreages and boundaries so as to maximize the estate's rental income.

Size of the original: 26.4 × 41 cm. Photograph courtesy of Somerset Archive and Record Service, Taunton, from the Luttrell Family Manuscripts (DD\2/6/33).

lords because they wished to screw up their money incomes in order to keep pace with a soaring cost of living and an even more soaring standard of living that social pressures enforced on those with aspirations to gentility.⁷⁷ The tools for calculating and recording such rent increases included surveyors and the property maps they produced. If either or both were expensive, the cost could be expected to be quickly amortized by the higher rent that would result from a landowner's full knowledge of his property. It is likely that William Fowler's maps of the Bridgwater estates in Shropshire, made in 1650–51, were used in this way as part of a concerted effort to find money from the estate to pay off debts.⁷⁸ The "true plott" of the Luttrell property at Kilton Park in Somerset by surveyor George Withiell from the west of England led to the recovery of over seven statute acres, worth £98, which had been concealed by the old "false plott being drawne with dark lines" (fig. 28.7).⁷⁹

In the final analysis, property maps were constructed, to use Valentine Leigh's phrase, for the "profite" they might bring. There can be no doubt that one element of that profit was reckoned in money, but a property map, in the manner of landed property itself, represented sym-

bolic values as well. A landed estate with its fields, woods, mansion, farms, and cottages was the entrée to landed society. An estate map was a touchstone to the rights and privileges that came with the possession of land. It could be considered, as Harley said, "a seigneurial emblem, asserting the lord of the manor's legal power within the rural society. For him, the map was one badge of his local authority."⁸⁰

77. F. M. L. Thompson, *Chartered Surveyors: The Growth of a Profession* (London: Routledge and Kegan Paul, 1968), 16.

78. A. D. M. Phillips, "The Seventeenth-Century Maps and Surveys of William Fowler," *Cartographic Journal* 17 (1980): 100–110.

79. J. B. Harley and E. A. Stuart, "George Withiell: A West Country Surveyor of the Late-Seventeenth Century," *Devon and Cornwall Notes & Queries* 35 (1982): 45–58, esp. 49.

80. J. B. Harley, "Meaning and Ambiguity in Tudor Cartography," in *English Map-Making, 1500–1650: Historical Essays*, ed. Sarah Tyacke (London: British Library, 1983), 22–45, esp. 37. See also A. Sarah Boddall, *Maps, Land and Society: A History, with a Carto-Bibliography of Cambridgeshire Estate Maps, c. 1600–1836* (Cambridge: Cambridge University Press, 1992), 177–84, and idem, *Dictionary of Land Surveyors and Local Map-Makers of Great Britain and Ireland, 1530–1850*, 2d ed., 2 vols. (originally comp. Francis W. Steer and ed. Peter

At a further level of abstraction, some of these maps were regarded as minor works of art. Maps had a role to play in decoration, even if not produced for that purpose alone or used solely to that end. “Your plot,” William Leybourn wrote, “will be a neat Ornament for the Lord of the Mannor to hang in his study, or other private place, so that at pleasure he may see his land before him.”⁸¹ The key to understanding the property mapping revolution in the early modern period is the word “land.” None of the maps referred to would have been needed had land still meant in the Renaissance what it had meant in the Middle Ages. Because in the new capitalist economy land was counted as individual pieces of specific acreage with monetary value instead of as the source of rights or produce as in a feudal society, it is easy to understand why landowners came to desire a map of their property and how, as society became more commercially and cash orientated, socially ambitious, and litigious, surveyors improved their skills and techniques to keep up with the new demand for maps, whatever the underlying motive (fiscal or symbolic). In the final decades of the fifteenth century and at the start of the sixteenth, such maps, although not unknown, had been a rarity and surveying had been a self-conscious,

nascent profession. By 1678, however, the English surveyor John Holwell was sufficiently confident of the standing of his profession that he could begin his *Sure Guide to the Practical Surveyor* with the declaration “I shall not trouble my self to Write any thing in Commendation of the Art, its use being sufficiently known.”⁸²

Eden) (London: British Library, 1997), 1:31–32, where Bendall discusses one such man who bought himself into the landowning classes, Sir William Courten, and the elaborate, highly decorated map of his Laxton, Nottinghamshire, estate—“an announcement of his social standing”—made by Mark Pierse in 1635; see plate 69.

81. The wording first appeared in William Leybourn [pseud. for Oliver Wallinby], *Planometria; or, The Whole Art of Surveying of Land* (London: Printed for Nathanael Brooks, 1650), 173. It is also found in William Leybourn’s enlarged work, *The Compleat Surveyor: Containing the Whole Art of Surveying of Land* (London: Printed by R. and W. Leybourn for E. Brewster and G. Sawbridge, 1653), and quoted in David Buisseret, “Introduction: Defining the Estate Map,” in *Rural Images*, 1–4, esp. 3. See also Victor Morgan, “The Cartographic Image of ‘The Country’ in Early Modern England,” *Transactions of the Royal Historical Society*, 5th ser., 29 (1979): 129–54, who quotes John Dee on the display of maps on p. 148.

82. See the preface in John Holwell, *A Sure Guide to the Practical Surveyor, in Two Parts* (London: Printed by W. Godbid, for Christopher Hussey, 1678), A3 verso.