54 • Mapmaking in England, ca. 1470–1650

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THE ENGLISH HERITAGE TO 1525

WORLD MAPS

There is little evidence of a significant cartographic presence in late fifteenth-century England in terms of most modern indices, such as an extensive familiarity with and use of maps on the part of its citizenry, a widespread use of maps for administration and in the transaction of business, the domestic production of printed maps, and an active market in them. Although the first map to be printed in England, a T-O map illustrating William Caxton’s Myrour of the Worlde of 1481, appeared at a relatively early date, no further map, other than one illustrating a 1489 reprint of Caxton’s text, was to be printed for several decades.

Yet England was far from being a land without maps or mapping. In the thirteenth-century Anglo-French mapmakers had created numerous ornate world maps, the outstanding survivor of which is the late thirteenth-century Hereford map. Although the creative impulse had slackened after 1300, traditional world maps continued to be created as text illustrations, notably to certain copies of Ranulf Higden’s Polychronicon. As the Aslake and particularly the Evesham maps demonstrate, large world maps were also produced for didactic and representational purposes and as aids to devotion into the early fifteenth century and probably beyond, although no late fifteenth-century examples have yet come to light. As late as the 1540s Henry VIII possessed “a mappa mundi in parcheament” in “The Removing Guarderobe . . . attendaunt at the Courte upon the kings most Roiall per- sonne where the same for the tyme shall happen to be,” suggesting that such maps continued to be used in medieval fashion into the middle of the sixteenth century as iconic backdrops, evocative of knowledge, power, and divine right, when the king appeared in public in the course of his progresses.


1. This notion is challenged in Catherine Delano-Smith and R. J. P. Kain, English Maps: A History (London: British Library, 1999), 28–29, who state that “certainly by the late fourteenth century, or at the latest by the early fifteenth century, the practical use of maps was diffusing into society at large,” but the scarcity of surviving maps of any description or of written evidence of their use makes this statement problematic. Harvey’s statement that “in the England of 1500 maps were little understood or used” (P. D. A. Harvey, Maps in Tudor England [London: Public Record Office and the British Library, 1993], 7), however, rests on an excessively restrictive definition of a map and a tendency to regard sophisticated maps drawn to scale and with conventional signs as the only true maps.

2. Tony Campbell, The Earliest Printed Maps, 1472–1500 (London: British Library, 1987), 98–99. The maps were only partially printed, the geographical information being inserted in manuscript.


4. The BL has an example of a roughly drawn sketchlike traditional world map drawn as late as 1466 (Harleian MS. 3673, fol. 84) (illustrated in David Woodward, “Medieval Mappamundi,” in HC 1:286–370, esp. 352). The numerous printed versions of Higden did not contain maps.


6. BL, Harley MS. 1419, fol. 414v.

Another *mappamundi* was described in 1547 as being in the Long Gallery at Hampton Court. This was the gallery leading to the royal chapel from the king’s private apartments. All the other pictures hanging in the gallery, without exception, judging from the description in the 1547/49 inventories of the king’s goods, had religious themes, suggesting that the “rownde mappaemundi” was placed there for the purpose, or at least the appearance, of providing religious instruction and edification for the king and his suite prior to their arrival in the chapel. Larger traditional *mappaemundi* always included references to and illustrations of biblical episodes, particularly from the Old Testament, in the appropriate locations, so they would have fitted well between the figurative pictures. The placing of one of Henry’s *mappaemundi* in this transitional location between the secular and the ecclesiastical may reflect a standard medieval practice of which modern scholars have been unaware because of the relative paucity of such locational information in early records.

From the late fifteenth century it is quite possible that in certain more cosmopolitan English homes, including some that were not so wealthy, these manuscript *mappaemundi* (a term that by the late 1540s was increasingly being used to differentiate medieval world maps from modern “maps of the whole world”) were being supplemented or replaced by single or multisheet printed maps like those acquired in the course of his travels by Christopher Columbus’s second son, Ferdinand. These maps combined traditional representations of the *oikumene*, of varying degrees of elaboration, with depictions of individual saints perhaps associated with particular shrines, such as Santiago de Compostella. In the late fifteenth century it would seem that traditional *mappaemundi* were still considered to be suitable gifts for royalty at the influential Burgundian court, as a manuscript illustration now in Lyons demonstrates. It is likely this was also the case in the English court, given the close links between the two.

### MAPS OF BRITAIN

Side-by-side with medieval world maps, it is clear that maps of England related to the Gough map survived in what were probably substantial numbers, as a few reduced-size manuscript and printed examples are still to be found. It is generally accepted that the prototype for the Gough map was created in about 1290, that it was originally intended for administrative (very possibly for tax assessment and tax raising) purposes, and that originally a number of versions were prepared combining more...
detailed coverage of certain regions (in the case of the Gough map, the area of Lincolnshire and southern Yorkshire) with a simplified coverage of routes elsewhere in the country. (A reference map for the British Isles section, chapters 54–59, can be found in fig. 54.1.) Whether the surviving maps were still being used for administrative purposes by the late fifteenth century and into the sixteenth century is unknown, but they continued to be copied. It seems quite likely that the regional maps consulted by John Leland at Merton College in Oxford in the 1530s were derived from sections of Gough-type maps, and by this period the broad lines of the image had clearly become well enough known for them to assume iconic status as the representation of England.

ROUTE MAPS

Route maps were not unknown to literate English people of the late fifteenth century, but there is no evidence that they were used as practical aids to travel, for which written directions and itineraries were the norm. Rather, route maps seem to have served spiritual and historical-commemorative functions and to have provided a framework around which mappaemundi and regional maps could be constructed. By 1470 Matthew Paris’s mid-thirteenth century itineraries of the route from London to Jerusalem and his maps of Great Britain and Palestine had probably slipped into oblivion (if indeed they had ever been much known outside St. Albans and courtly circles). European-wide pilgrimage and mercantile routes were, however, to be found within the Hereford world map and doubtless within numerous other mappaemundi that are now lost. Similarly the Gough and related maps were constructed around itineraries, including the routes taken by Edward I when inspecting the defenses of the south coast of England and when invading Scotland. The latter was also reflected in the selection of place-names and images on the map of Scotland accompanying versions of John Hardyng’s mid-fifteenth century Chronicle.

URBAN IMAGES

Medieval England had a tradition of urban depiction, often in the form of marginal decorations of Jerusalem, Rome, Constantinople, or the New Jerusalem accompanying liturgical or historical texts. The images were usually idealized and generalized, but often the architecture was distinctively northern European and on occasion the images concealed recognizable depictions of English towns, such as London, York, or Lincoln. As early as the middle of the thirteenth century Matthew Paris included recognizable plans and bird’s-eye views of Rome, Jerusalem, Acre, Lyons, and London in various versions of his itinerary of the route from London to Jerusalem that accompanied his “Chronica maiora.”

In the same years such English world maps as the Sawley (also known as the “Henry of Mainz”) and Hereford maps had the occasional realistic vignette town view or plan, most notably of Paris with the île de la Cité situated in the middle of the Seine but also, on the Hereford world map, of Lincoln on its hill. In about 1320 several recognizable views, including some oblique or bird’s-eye views, of English towns were inserted in the margins of a late thirteenth-century copy of Geoffrey of Monmouth’s “History of the Kings of Britain.” A number of plans, generally roughly executed, of single buildings, plots of land, or small groups of buildings in Exeter, London and its vicinity, and Durham survive as separate sheets or in volumes from the fifteenth century.

20. For this and the remainder of this paragraph, see P. D. A. Harvey, “Local and Regional Cartography in Medieval Europe,” in HC 1:464–501, esp. 495–96; Harvey, Medieval Maps, 8, 32, 71, 73, 81 and 87; G. R. Crone, “New Light on the Hereford Map,” The Geographical Journal 131 (1965): 447–62; Parsons, Map of Great Britain, introduction; Hindle, “Towns and Roads”; and Delano-Smith and Kain, English Maps, 32, 46, 143–45, and 148–52. I also received private communication from Daniel Connolly on Paris’s itineraries. Examples of Hardynge’s maps, accompanying recensions of the text of ca. 1450 and of ca. 1470/80 respectively, are to be found in the BL (Lansdowne MS. 204) and the Bodleian Library Oxford (MS. Arch. Seld. B.10).
22. Delano-Smith and Kain, English Maps, 181–82. Indeed, as well as the better-known bird’s-eye view of London from the north, one version of the itinerary (BL, Cotton MS. Nero D. i, fol. 183v, illustrated in Delano-Smith and Kain, English Maps, 150) contains a schematic plan of London oriented to the north, indicating its gates and London Bridge.
23. Cambridge, Corpus Christi College, MS. 66 p. 2; Hereford Cathedral.

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FIG. 54.1. REFERENCE MAP OF THE BRITISH ISLES.
Arguably of greater significance are the oblique views of Wells and of Bristol created in the mid-1460s and in about 1480 respectively, the former by Thomas Chaundler to illustrate his account of William of Wykeham’s good works and the latter by Robert Ricart to illustrate his history of Bristol, of which he was then town clerk. Both are highly selective and pictorial in style, and both show the town walls and gates. But spiritually the views belong to different worlds. The plan of Wells focuses on the ecclesiastical, showing the bishop’s palace and little of the town other than the cathedral. In contrast the plan of Bristol reflects its place as a trading emporium, the third largest town in England, dominated by merchants who even then, utilizing portolan charts from the Mediterranean, were sending fleets over the Atlantic in search of new fishing grounds. Omitting the castle, numerous churches, and the rivers Avon and Frome, the Bristol plan focuses on the four main streets converging on the market cross and shows the most prominent buildings, civil as well as ecclesiastical (fig. 54.2).

WRITTEN SURVEYS

At a local level, written descriptions of land had been the norm since at least the late twelfth century. The standardized form of a manorial survey or “extent” was set out in the statute “Extenta Manerii” of 1276, which, known from copies of the late thirteenth century onward, served as a guide. It listed what were considered the important questions to ask and the essential facts to record. The result of these questions, the terriers of estates, would normally record the extent of a lord’s land, often with long lists of abuttals, perquisites, and income, and the obligations and services of his tenants. The information was normally collected by means of verbal testimony of local witnesses and included such items as the acreages of demesnes, often with detail of its cropping, rotation, amount of seed required, and its yields of different kinds of crops. To these may be added the acreages and values of the meadowlands, pastures, gardens, mills, and woodland; descriptions would normally be followed by full details of the tenants of the manor, their land holdings, and amounts of their rents and services. To this information the surveyor (derived from a word meaning “supervisor”), who was often the lord’s land steward, would contribute his opinion or “view” about the future management of the land.

Although among these surveys there is quantifiable data about the land, there was no survey in the sense of measuring the land with the intention of producing a map of it. Measures were derived by estimation or by tradition, but they could also be derived from actual measurement of pieces of land, often gathered by individuals who by the fifteenth century were termed “measurers.” Support for the precision that they brought can be found in the earli-

26. Delano-Smith and Kain, English Maps, 183–84, referring to New College, Oxford, MS. C.288 on deposit in the Bodleian Library; Elizabeth Ralph, “Bristol, circa 1480,” in LMP, 309–16. The contemporary depictions of Scottish towns and castles on the maps illustrating Hardyng’s chronicles were symbolic, as the bulk of urban depictions would seem to have been at this time.
27. I owe this observation to W. L. D. (William) Ravenhill and express my gratitude to Mary Ravenhill and Roger Kain for allowing me to read the typescript of Professor Ravenhill’s unpublished essay, originally intended for this volume, on English urban mapping, 1470–1640. For fifteenth-century Bristol, see James Alexander Williamson, The Cabot Voyages and Bristol Discovery under Henry VII (Cambridge: Published for the Hakluyt Society at Cambridge University Press, 1962), and Kenneth R. Andrews, Trade, Plunder and Settlement: Maritime Enterprise and the Genesis of the British Empire, 1480–1630 (Cambridge: Cambridge University Press, 1984), 41–50. The Ricart plan may well have been influenced by Italian models with which Bristol had close relations (P. D. A. Harvey, “Influences and Traditions,” in LMP, 33–39, esp. 38).
28. The following paragraphs are based on information from and are largely in the words of the late Professor William Ravenhill, and I thank his widow, Mary, for allowing me to use them.
est of the surveying manuals to be published in England, John Fitzherbert’s *Boke of Surveying*, first published in 1523. Although it touches only slightly on the subject of practical land surveying and is demonstrably much more concerned with manorial law and tenancies, considering the mathematical refinements to be of less consequence, Fitzherbert’s *Boke* strongly deprecated those who “took the view” from a distant point. He emphasized the need for the lord to have a “parfyte knowledge” of his lands and warned that “if a man shall view a close or a pasture, he maye nat loke over the hedge & go his waye, but he must other ryde or go ouer, and se euer parcel thereof . . . to know howe many acres it conteyneth.” He who did otherwise was in his opinion “a diceyver, and not a surveyour.” Only through a detailed knowledge of his lands, Fitzherbert was apparently the first to argue, could a landlord maximize the income from them on which his “honour and dege” depended.31

**SKETCH MAPS OF LOCALITIES**

Some surveyors anticipated Fitzherbert’s advice, and an early stage in the transition from a purely written survey to one with a supplementary map may be detected in an interesting series of maps drawn at various scales.32 The Archer family gradually acquired a group of small freeholdings in the parish of Tanworth, lying in the heart of the Forest of Arden in Warwickshire. The sketch maps form part of a written survey of this property and were compiled by John Archer, who was in possession of the family estate between 1472 and 1519. Comparison with later maps of this area reveals that the representation tends to be schematic, and although the general relationships in terms of direction are correct, constant scale is not maintained and the representation of shape is largely absent. There seems to be little doubt that the written survey was intended to facilitate the administration of the estate. Archer took the critical mental step of clarifying the written survey and its copious statements on abuttals of each piece of land with a pictorial illustration, which performed the same function much more explicitly and realistically.33

Yet there was considerably more local mapping in England before 1520 than would appear from a study of manorial surveys alone. Harvey has demonstrated that throughout the Middle Ages there were pockets, particularly around the Wash and the Fens, where mapmaking activity and so, presumably, map consciousness, were greater than elsewhere.34 This activity was perhaps related to regions of higher population and relative prosperity. On the one hand, there were greater pressures on resources (primarily arable land), and more potential for conflict. On the other, there was a higher level of literacy fostered by greater numbers of monasteries and scriptoria.35 It is certainly the case that one-third of local maps created in England before 1500 originated in territorial disputes, the largest single cause.36 In most cases the maps were informal sketches. They seem to have been meant as aides-mémoire for the private clarification of issues at dispute—one, dating from the early sixteenth century and apparently relating to water rights on the upper River Derwent in Yorkshire, perhaps by one Thomas Nicholas of Bridlington, is actually in a lawyer’s notebook that is otherwise devoted to legal texts.37 By 1500 we begin to find plans elucidating disputes over property being incorporated into legal documents, although in a context that suggests continental and not English legal precedents.38 The earliest recorded example of a map, relating to ownership of a meadow in Elford in Staffordshire, actually being produced in court, however, is 1508.39

33. Harvey has suggested that sketch maps of fields in Dedham in Essex by Robert Mawe demonstrate that in some cases, sketch maps were prepared as aides-mémoire in the course of preparing written surveys (*Maps in Tudor England*, 83 and 85). However, the late date (August 1573)—within two years of the appearance of the earliest surviving estate map drawn to scale—and the cartographic sophistication of Mawe, who had links with both Thomas Seckford and Christopher Saxton (see below), make it problematic to draw conclusions from these maps for practice earlier in the century.
35. Rose Mitchell and David Crook, “The Pinchbeck Fen Map: A Fifteenth-Century Map of the Lincolnshire Fenland,” *Imago Mundi* 51 (1999): 40–50, esp. 40. Harvey, “Influences and Traditions,” 34, tellingly observes that the area of the Fens was similar to the Netherlands, where there was also a precociously early development of local mapmaking.
39. Harvey, *Maps in Tudor England*, 29 and 107. For the first recorded example of a map being specifically commissioned for production in a court of law, see figure 54.3.
A very few maps served practical, administrative functions, such as illustrating rights (e.g., hunting rights) or water-courses (e.g., the route of water pipes supplying the Charterhouse just outside the walls of London). Forty extremely rarely the sketches were akin to architectural plans, used for instance in planning a new kitchen for Winchester College in about 1390. In addition diagrams were sometimes prepared of even smaller areas like churches for ephemeral contexts, such as plotting positions and movements in religious ceremonies and in mystery and similar plays. Although generally humble in appearance, some of the surviving maps and plans are much grander and seem to have had a commemorative function, like the texts in the cartularies in which they are usually to be found.

Recent research suggests that these local, mainly legal, plans might have been much more common than has previously been thought. It could well be that several lie in bundles awaiting discovery in record offices, their relatively poor rate of survival being linked to their informal nature, which led the vast majority to be discarded once the disputes to which they related had been resolved. In certain localities, in the course of the fifteenth and early sixteenth centuries, these plans may have helped to keep alive a flickering flame of map consciousness among the clerks and lawyers who formed the bedrock of Tudor society and administration. The plans may have prepared them for the demands for more sophisticated mapping that were to come from the Court from the early 1540s and have contributed to the evolution of estate mapping. Nevertheless, these generally rough maps and their creators were probably too humble to have awoken members of the trend-setting elites, with whom they occasionally came into contact, to the practical advantages of using maps and plans in government and everyday life.

**FOREIGN INFLUENCES TO 1525**

Although these largely home-grown cartographic traditions persisted into the late fifteenth century, they seem not to have been widespread, prolific, or particularly vigorous, and any interest in maps on the part of the governing elites of late Plantagenet and early Tudor England seems to have been stimulated primarily, though not exclusively, by developments in mainland Europe. Medieval magnates, intellectuals in their entourages, royal secretaries, city merchants, and lawyers were responsive to the cultural currents coming from Burgundy and the Netherlands, from Germany and Italy. To judge from his references to Ptolemy when writing in about 1530, for instance, Sir Thomas Elyot was familiar with the printed editions of Ptolemy’s *Geography* from German or Italian presses that appeared from 1475, and it is safe to assume that numerous other intellectually interested individuals who were wealthy enough, as well as monastery and nascent college libraries, owned printed or manuscript copies of the *Geography* from an early date.

**ITALY**

In other cartographic fields, the foreign influence can be clearly demonstrated. Portolan charts were known in England from at least the 1360s, and by the end of the fifteenth century a few foreign-born chartmakers were creating portolan charts and atlases for English clients. It could well be that Andrea Bianco’s 1448 chart happened to be produced in London by chance, in the course of his travels, but Ferdinand Columbus’s biography of his father suggests that his uncle, Bartholomew, was forced to make his living in London in the late 1490s by producing charts not only for King Henry VII (Columbus actually quotes the colophon of a chart made in February 1498/9).

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43. Harvey, “Local and Regional Cartography,” 490–93; idem, *Maps in Tudor England*, 14–15; and Felix Hull, “Isle of Thanet, Kent, Late 14th Century × 1414,” in LMP, 119–26. Despite Mitchell and Crook’s insistence (“Pinchbeck Fen Map,” 44) on the purely practical nature of the Pinchbeck Fenland map, which they date to the mid-fifteenth century, its high degree of finish suggests that it was also commemorative in intention and meant for display. Its style, and particularly the use of a red background to highlight significant churches, is reminiscent of the larger mid-fourteenth-century Higden map from Ramsey Abbey in Huntingdonshire (BL, Royal MS. 14.C.IX, fols. 1v–2), perhaps reflecting a peculiarity of display maps from the Fenland area.
44. Harvey, “Local and Regional Cartography,” 498–99, appendix 20.2, gives a full list, as of 1987, of English local plans created before 1500. The mid-fifteenth-century Pinchbeck Fen map should now be added (for which see Mitchell and Crook, “Pinchbeck Fen Map,” 40–50).
45. Bendall has shown how by the late sixteenth century legal maps, drawn to scale and intended for production in court, were later used for purposes of land management (A. Sarah Bendall, “Enquire ‘When the Same Platte Was Made and by Whome and to What Intent’: Sixteenth-Century Maps of Romney Marsh,” *Imago Mundi* 47 [1995]: 34–48, esp. 42–43). On mapping the countryside, see pp. 1637–48.
49. Tony Campbell, “Portolan Charts from the Late Thirteenth Century to 1500,” in *HC* 1:371–463, esp. 374.
but also for other clients. Among them, probably, would have been the merchants of London and Bristol. The latter employed John and Sebastian Cabot in these years, and John Cabot is reported to have persuaded the king to supply a ship for his 1498 voyage to Newfoundland and Nova Scotia “by a cart & othir demonstracions Reasonable.” Other Italian mapmakers may also have been spasmodically active in England at a very early date. The inspiration for a map of London engraved on copper in 1497, which Ferdinand Columbus is said to have bought during his only visit to England in 1521–22, is likely to have been Italian. Although no example of the map is known, its appearance is suggested in what are probably derivatives reproduced as vignettes on later maps. It would rather have resembled the Francesco Rosselli view of Florence, from which the surviving Catena view is derived, in viewing London up river from an elevated point beyond its walls (in this case a fictitious one to the east of the Tower).

BURGUNDY

Of equal importance as an exemplar was the court of Burgundy. Its ceremonial and pageants provided a model for courts elsewhere in Europe from the early fifteenth century. The Burgundian-Flemish influence expressed itself particularly through the deployment of large painted cloths containing maplike images in court pageants. One, showing a figure representing Arthur, Prince of Wales, enthroned in majesty at the center of the universe, was used in the pageant celebrating Catherine of Aragon’s entry into London in 1501. A surviving account of 1514 for the cost of creating an enormous depiction of Boulogne, which Henry VIII had recently intended to capture, may be related to another set of court festivities for which other records do not survive.

The decoration of an eight-sheet woodcut map of England, printed in England and probably acquired by Ferdinand Columbus while in England in 1522, is also significant in this context, as it may well derive from a design that was first seen on a painted cloth at a court pageant. It also represents the earliest recorded instance of the printing of a multisheet map in England, presumably by a German printer briefly resident in this country. The map, which almost certainly contained a Gough-like depiction of England and part of Scotland, was replete with patriotic symbolism containing not only the royal arms, borne by angels, and St. George and the Dragon but also the depiction of “an emperor,” which was likely to have been intended to represent Henry VII or (more likely) Henry VIII wearing a closed, imperial crown in a ship off the coast of Wales. This was in line with a strong patriotic theme in early Tudor propaganda that was also reflected in designs for the coinage and was to reach its climax with the wording of the legislation passed by the Reformation Parliament of the 1530s that marked the break with Rome.

FLANDERS AND GERMANY

The realistic landscapes and townscape, frequently in bird’s-eye perspective, to be found as backgrounds in the paintings and miniatures of Flemish artists from the first quarter of the fifteenth century were probably equally influential in inclining the more sophisticated English trend-setters at court and beyond toward a quasicartographic view of their world. A panel painting of about 1460 by an unidentified Flemish artist, traditionally said to portray Jack of Kent, the mystical tutor to the Scudamore family, depicts the Scudamore’s family seat, Kentchurch Court in Herefordshire, in slightly raised perspective, in the background. In about 1480, at the time when Robert Ricart was drawing his bird’s-eye view of Bristol, a detailed oblique view of London, showing London Bridge and such principal buildings as the Customs’ House and St. Paul’s Cathedral, appeared in the background of a miniature of Charles, duke of Orleans, in the Tower, which adorned a copy of the duke’s poems commissioned in Bruges by Edward IV.

THE PENETRATION OF THE NEW MAPPING, 1500–1525

The influence of new cartographic forms from mainland Europe on the court of England increased dramatically in the opening years of the sixteenth century. In part it was a reflection of the change of generations. While people of the older generation, such as Cardinal Thomas Wolsey, were familiar with Ptolemy’s Geography, mappaemundi, 50. Ferdinand Columbus, The Life of the Admiral Christopher Columbus by His Son Ferdinand, 2d ed., trans. and anno. Benjamin Keen (New Brunswick, N.J.: Rutgers University Press, 1992), 36–37.
51. Williamson, Cabot Voyages, 220.
52. Campbell, Earliest Printed Maps, 214.
54. For a recent discussion of these maps of Florence, see Werner Kreuer and H.-T. Schulze Altcappenburg, Fiorenza, veduta della Catena: Die große Ansicht von Florenz (Berlin: Wasmuth, 1998).
55. I am grateful to Christopher Witwick, the county archivist of East Sussex, for this information, which he discovered in TNA, E 86/236, p. 398.
57. David Starkey (private communication) has, however, suggested that the imagery may be related to Charles V’s visit to England in 1522, for which see Sydney Anglo, Spectacle, Pageantry, and Early Tudor Policy (Oxford: Clarendon Press, 1969), 163, 170–206, and esp. 196–97.
59. BL, Royal MS. 16.F.11, fol. 73.
and portolan charts, the younger generation—Thomas Cromwell, Thomas Cranmer, and Henry VIII himself—had been growing up when novel types of printed map were being published, such as revised “modern” Ptolemaic maps, German route maps by Erhard Etzlaub and Georg Erlinger, and the first mass-produced maps of battles and of countries and provinces that were in the news. Albertian theories of proportion and precision of measurement were probably also reaching the desks of some English scholars from mainland Europe and particularly Germany.

Some Englishmen were more exposed to these influences than were others. Thomas Cromwell had served as a mercenary in Italy during his youth and there he would have seen the manuscript and printed regional maps and the printed plans and pictorial maps of battles and sieges that had been circulating there and in Germany in increasing numbers since the early 1490s. Such humanists as Thomas More, although he was slightly older, would have also been precociously familiar with the latest cartographic practices because their European-wide circle of correspondents included scholars like Willibald Pirckheimer who were actively involved in the creation of “new” Ptolemaic maps and atlases. Moreover, More’s and Cromwell’s legal background meant that they would probably occasionally have seen sketch maps being used to clarify problems.

The royal court was particularly open to foreign cartographic influences not only through the presence of such figures as the Munich-born mathematician and instrument-maker Nicolaus Kratzer, who was appointed court astronomer and horologer in 1519, and a succession of distinguished visiting humanists beginning with Desiderius Erasmus (repeatedly from 1499) and Baldassare Castiglione (1503), who met the young Henry VIII, but also because Henry himself was a recipient of outstanding examples of the latest mapping. In 1528, for example, he was presented with a large world map by Girolamo da Verrazzano showing the actual or claimed American discoveries of Girolamo’s brother Giovanni. We know from the inventories compiled in 1542 that he probably occasionally have seen sketch maps being used to clarify problems.

For the map mentioned in Henry’s 1547 inventory (BL, Harley MS. 1419, fol. 133v), see Barber, “Maps, Text-Readers,” 256–58, and Roberto Almagià, Monumenta Italica cartographica (Florence: Istituto Geografico Militare, 1929), pl. XIX (the earliest surviving plan of Lombardy of 1515), and for the Signot map of Italy, first printed in 1515 on the basis of a manuscript prototype dating from 1495–98, which survives in several examples, see figure 48.14 and David Buisseret, “Monarchs, Ministers, and Maps in France before the Accession of Louis XIV,” in Monarchs, Ministers, and Maps, 99–123, esp. 101–2.
and following Henry VIII’s death that Henry also received examples of the latest regional and urban cartography, as manuscript and printed wall maps, globes, or painted cloths (a cheap alternative to tapestry), which he displayed in the galleries of his palaces and particularly in his most important palace at Whitehall.  

It is quite possible that by the early 1520s copies of the new types of printed maps from Italy and Germany were beginning to circulate quite widely in England, far beyond court circles, as they were already doing in much of the rest of western Europe. They must have had a radical effect on perceptions. To see what appeared to be a startlingly realistic modern image of a country would have stirred quite different emotions from seeing an image as interpreted by a second-century, Greek-speaking Egyptian. It could well have turned the viewer’s thoughts to the practical uses to which such maps could be put. As early as 1519 Thomas More’s brother-in-law John Rastell, a printer and lawyer with a particular interest in geography, maps, and discovery, staged an entertainment—the “New Interlude and Mery of the iiiij elementes”—in which the characters displayed maps and instruments on stage as a means of popular, and royal, education as well as a way of encouraging their use in overseas navigation and discovery. The new, apparently more realistic printed maps seem also to have encouraged a desire to produce a modern image of England to replace what were recognized as the outdated images to be found on Gough-like maps, portolan charts, and on the “old” tables of Ptolemy, even if the only recorded articulation of such a desire is to be found in a letter of 1524 from Nicolaus Kratzer to Albrecht Dürer.  

**Change, 1526–1550**

**The Beginnings: Map Use in Court and Country, 1526–1533**

In 1531 Sir Thomas Elyot, a former secretary to the Privy Council under Cardinal Thomas Wolsey and a member of More’s circle, put pen to paper on the subject of “painting,” by which term he included what today would be termed maps. In his *Boke Named the Gouernour*, which was to become an immensely influential educational classic that went through many editions, he not only repeated long-accepted maxims about the value of maps as visual aids in the teaching of scripture, history, and geography but also emphasized their value as aids for the adult governor. In addition to their utility for generals who need to visualize the camp of their enemy (a concept derived from the Roman theorist Vegetius that had become something of a commonplace in the writings of sixteenth-century humanists as Niccolò Machiavelli and Baldassare Castiglione), he wrote that maps could be adapted “to the adminiculation [support] of other serious studies and business.” They could be used as a planning tool (“Wherein, by often amending and correcting, [the governor] finally shall so perfect the work unto his purpose that there shall neither ensue any repentance, nor in the employment of his money he shall be by other deceived”), and as a means of persuasion (“where . . . that which is called the grace of the thing, is perfectly expressed, that thing more persuadeth and stirreth the beholder . . . than the declaration in writing or speaking doth the reader and hearer”). This emphasis on a map’s role as an elegant form of propaganda as well as its planning function was significant, as many of the earliest surviving utilitarian maps created for use at court combine both roles—the rough, preliminary sketches having in most cases been lost. Above all, Elyot pointed out that “in visiting his own dominions, [the governor] shall set them out in figure, in such wise that at his eye shall appear to him where he shall employ his study and treasure, as well for the safeguard of his country, as for the commodity and honour thereof, having at all times in his sight the surety and feebleness, advancement and hindrance, of the same.” Elyot was the first of several

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69. Such passing use of ephemeral items tends to go unrecorded, but in 1538, at the height of the Turkish naval war, the French ambassador found Henry VIII in his chamber with a presumably printed “map of the very place where the Armada of the Levant was” (J. R. Hale, “The Defence of the Realm, 1485–1558,” in *HKW*, 4:365–401, esp. 374, citing *Letters and Papers, Foreign and Domestic, of the Reign of Henry VIII*, 21 vols. and supplements, ed. J. S. Brewer et al. [London, 1862–1932], vol. 13, pt. 2, 289).  
75. For the quotations in this paragraph, see Elyot, *Book Named the Governor*, 23–24, 26, and 35–36.
clerks to the Privy Council who were to play a crucial role in popularizing maps and encouraging their practical use in Tudor and early Stuart England.

By the time that Elyot's book was published, English administrators were already beginning to use maps in the ways he recommended. Until the mid-1520s there is little sign of the regular use of maps for administrative purposes by government, but in 1526 an official report on Ireland referred to an accompanying "platt" to confirm its written statements, and a simple map probably with an official provenance survives from the period, concentrating above all else on a small area in the southeast of the island, or Irish Pale, where English influence was then effective. In 1527, the festivities staged to celebrate the conclusion of peace between France and England at Greenwich included a detailed, modern map of the world, naming its principal regions, by Kratzer, Hans Holbein (the younger), and John Rastell, and a "paynetyng of the plat of Tirwan . . . in grete" by Holbein and Vincenzo Volpe, ultimately derived from plats made at the time of the 1513 siege of Thérouanne.

In December 1530 the king commissioned Vincenzo Volpe, at a price of £3 10s, to prepare a map of the strategically important ports of Rye and Hastings. A large anonymous map of the River Trent and its tributaries, showing the bridges, mills, and nearby towns and castles, with notes on ownership in the case of the mills, may well have been commissioned, perhaps for presentation at court, in the context of the "Generall Acte concernynge Commissions of Sewers," passed in the parliamentary session of 1531–32. This act was intended to rectify the neglect of waterways and to ensure the repair of ruinous bridges by appointing commissioners from among the "honest and lawful men of the shire" to identify those parishes or landowners who were liable. In 1532 the corporation of Dover paid Volpe twenty-two shillings for a colored plan, illustrating a proposal to create an internal harbor, for presentation to Henry VIII. This survives, the first in a long series that sought to save Dover harbor from being rendered unusable because of the seemingly unstoppable build-up of shingle.

These signs of a growing awareness of the practical utility of maps in the late 1520s seem to have been countrywide and even international. In 1527 Robert Thorne, a Bristol merchant residing in Seville, drew a world map, closely modeled on a Spanish manuscript prototype, itself

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76. The exceptions include a now lost "carde" or map of Gascony and Guienne that was commissioned, at a price of twenty-six shillings from Sebastian Cabot in May 1512 (Williamson, Cabot Voyages, 281, referring to Henry VIII's household accounts [BL, Add. MS. 21481, fol. 92]), an anonymous untitled surviving map (BL, Cotton Roll xiii.12) of the Thames estuary from Faversham to Margate probably—though not certainly—dating from 1514, that was defensive in intention (Barber, "England I," 27–28; Sarah Tyacke and John Huddy, *Christopher Saxton and Tudor Map-Making* [London: British Library Reference Division, 1980], 11–23; and Harvey, *Maps in Tudor England*, 43–44 and 47). It has somewhat less convincingly also been suggested that it may have had a navigational purpose at a period when Trinity House had been founded for training pilots and the improvement of internal navigation (Delano-Smith and Kain, *English Maps*, 154). A third example may perhaps have been plans of Boulogne and its surrounding country, also dating from the spring of 1514, executed on several pieces of cloth and based on a survey of some kind commissioned from Calais (referred to in note 55 above citing TNA, E 86/236, p. 398), but the references are unclear and are more likely to refer to a large map-view prepared for a pageant. These seem, however, to be isolated instances, and a survey of the surviving official correspondence as calendared in Brewer et al., *Letters and Papers . . . of Henry VIII*, does not reveal any mention of maps or plats until well into the 1520s, even in the context of written descriptions of countries, or on the occupation of cities, such as Tournai, where after 1530, maps were produced (see Barber, "England I," 46 n. 15). I am grateful to John Andrews for endorsing this observation from his own researches on maps of Ireland of this period.

77. "As by the platt may appear" in BL, Lansdowne MS. 159, fol. 9 (calendared with this quotation in Brewer et al., *Letters and Papers . . . of Henry VIII*, vol. 4, pt. 3, 1077). The writer of a written "Descripicio Hibernie" placed immediately before this report and probably of the same period, attempts to confirm the truth of his written description of Ireland with the phrase "which is proved by dyvers cartes" (BL, Lansdowne MS. 159, fol. 3; for a later copy: BL, Add. MS. 4767, fol. 68). In context this remark would seem to refer to portolan charts. The first quotation, however, suggests moderate-sized manuscript maps produced for government, resembling those in the Cotton Collection of the BL. I am grateful to John Andrews for both these citations.


derived from a padrón real from the Casa de la Contratación, to illustrate a letter that he wrote to Henry VIII’s ambassador to Charles V, urging that the English should profit from the trade of the Spice Islands by “sayling Northwarde and passing the [North] pole descend to the equinoctiall line.”83 At a parochial level, on 14 February 1528, the Chamber of the Duchy of Lancaster ordered the Vicar of Bakewell and two others to express graphically, “by a cart or platt the meres and boundes” of lands in Over Haddon in Derbyshire to elucidate a dispute over common pasture rights and to send this to the Chamber “by the hand of one suche person as shall be well instructed by you to declare the same plot.” In the event, a colored map covering some eight square miles was produced, annotated with orientation expressed in words, but drawn to no consistent scale (fig. 54.3). It showed house and mills in perspective, limestone scars expressed by way of a brick-courses design and field boundaries, and is the earliest map known for certain to have been specifically commissioned for production in a court of law.84

83. Andrews, Trade, Plunder and Settlement, 169–70. It is claimed to be the earliest modern world map to have been produced by an Englishman but is known only through a printed copy published by Hakluyt in Divers Voyages, between gatherings a and b.
84. E. M. Yates, “Map of Over Haddon and Meadowplace, near Bakewell, Derbyshire, c. 1528,” Agricultural History Review 12 (1964): 121–24. TNA, MPC 59 (map); DL 1202, 12102, 1801, 319, 318Li. I am grateful to the late Professor William Ravenhill for this information. A few months later, at the turn of 1528–29, John Hasard, then bursar to Winchester College, produced a pictorial map of part of the manor.
MAPS MOVE CENTER STAGE, 1533–1550

The Impetus from Court: Defense, Dissolution, and the Mapping of the Coasts, 1533–1539

It was, however, the combination of this growing awareness of the practical utility of mapping and familiarity with the new types of map inside and outside Court, with the availability to Henry VIII and Thomas Cromwell of the wealth of the dissolved monasteries at a time of great external threat, that turned what might otherwise have been a gradual evolution in the creation and use of maps into a virtual revolution. The years 1533 and 1538–39 were particularly menacing. There seemed a real danger of François I and Charles V, with the Pope’s blessing, sinking their differences and uniting for an invasion of England. In 1533, there was a call for a survey of the country’s borders but, perhaps because of a lack of available funds, little was done and few maps were produced.85 It was a different story five years later when, with the dissolution of the monasteries in progress, Henry had hitherto undreamed of wealth at his disposal through the Court of Augmentations.86 In February 1539 at Cromwell’s instigation, the king commissioned certain “sadde [mature and trustworthy] and expert men of every shire in Ingland beyng nere the see . . . to viewe all the places amongst the secost wher any danger of invasions ys like to be and to certifie the sayd daungers and also best advises for the fortificacion thereof.”87

In the spring of 1539 this order led to the most extensive government-sponsored cartographic survey to be undertaken before the nineteenth century. The final cost by 1547—£376,500 in total 88—was far to exceed the amount that Henry was to lavish on his numerous palaces. Although the bulk went toward building the fortifications (which also benefited from the lead and stones of the former monasteries), significant sums were evidently spent on mapping. In the heated atmosphere of a major invasion scare, regional maps were produced at speed to indicate where fortifications needed to be created or improved. In April 1539, barely three months after the initial order had gone out for a survey, Cromwell was able to draw up a list of twenty-eight sites “where fortification is to be made.”89

This list led to the wholesale production of fortification plans in the course of the following decade. For the first time a sizeable body of mapping was created in the service of the state in line with Elyot’s recommendations and of a nature that has become ever more familiar in modern industrialized societies throughout the world.

The New Mapping: Boulogne, Scotland, Administration and Protestantism, 1539–1550

The pressure—and the commissioning of new maps—continued into the mid-1540s as Henry turned from defense to foreign conquest. John Rogers and Richard Lee, the king’s favorite mapmakers, found themselves drafting sophisticated maps and plans so that the king could assess alternative fortification proposals for the port of Ambleteuse near Boulogne and demarcation lines with the French in the same region while negotiating the Treaty of Camp (1546).90 Foreign chartmakers, such as the Frenchmen Jean Rotz and Nicolas de Nicolay and the Scottish highlander John Elder, were brought over to England (in the case of the French, in enormous numbers) to draw maps of English and French ports and of the hitherto almost totally unknown realm of Scotland, even if, like the chartmaker Rotz, their expertise lay in other areas or types of cartography.91 In the same period, Henry seems to have attempted to supervise from afar, by way of plans sent from the front, the course of sieges like that of Landrecy in 1543.92

From 1542 the “Rough Wooing”93 saw a sustained, though ultimately unsuccessful, invasion of Scotland in an attempt to secure the engagement of the infant Mary, Queen of Scots, to the young prince of Wales (later of Shaw Hatch, Berkshire, probably also for production in court to illustrate a dispute over rights to timber. The map is illustrated in color in Christie’s New York sale catalog 21 November 1986, lot 135, and discussed by John H. Harvey, “A Map of Shaw, Berkshire, England, of ca. 1528–29,” Huntia 3 (1979): 151–60.

85. Hale, “Defence of the Realm,” 367. A map of the River Thames, dated 1533, with soundings, on display in Alnwick Castle, Northumberland and owned by the Duke of Northumberland, may have been commissioned in this connection.


93. See most recently, Merriman, Rough Wooings.
Edward VI). The Scottish campaigns marked the most extensive use of maps in a military context to that date, with such professional mapmakers as Richard Lee, Thomas Petyt, and John Elder among the invading English forces. Henry VIII, the Earl of Hertford (later Protector Duke of Somerset), and his fellow commanders commissioned general maps of Scotland, more detailed ones like that of the master mason Henry Bullock of 1552 of the Debatable Lands that lay along the border between England and Scotland, and numerous plans of castles and strong points in the Scottish Lowlands. Battlefield sketches of individual engagements, notably the decisive English victory at Pinkie Cleugh (Musselburgh) in September 1547 (fig. 54.4), seem for the first time to have been created and used as a basis, in German and Italian fashion, for both a single-sheet copperplate news map, perhaps engraved and printed by Thomas Geminus alias Lambrechts, and a propaganda account of the Scottish campaign, William Patten’s Expedition into Scotland (1548).

Edward VI [London: Allen and Unwin, 1966], 140–41; Barber, “England I,” 42; and Hale, “Defence of the Realm,” 398), and, like his father, he seems to have been able to draw plats of fortifications (see Biddle, Colvin, and Summerson, “Defences in Detail,” 513, for Portsmouth fortifications “devised” by him in 1552; BL, Cotton MS. Aug. Lii.15 seems to have been drawn to elucidate the situation there for his visit).


97. The anonymous pictorial news map of Pinkie Cleugh, or Musselburgh, of which only one example is known, seems to be the earliest surviving copperplate map printed in England. It appears to be a compilation based on a series of drawings (now in the Bodleian Library, Oxford [Bod. MS. Eng. Misc. C.13]) by one John Ramsay, who was serving with Somerset, showing different phases of the battle (see below). The Germanic English of the print suggests that it was engraved by someone born in the Netherlands or Germany, such as Geminus or conceivably Reynier Wolfe. The drawings were discovered by Sir Charles

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**FIG. 54.4. THOMAS GEMINUS (?), MUSSELBURGH/ PINKIE CLEUGH.**

Size of the original: 31.5 × 50.5 cm. Photograph courtesy of the BL.
Somerset was as adept at the psychological use of maps. In 1548 he prominently displayed a now-lost plat (“dessaign en plateforme”) of England’s impressive new fortification of Haddington in Scotland in the chamber in which he received the French ambassador. In the same period military engineers, who moved regularly between France and Scotland, prepared detailed plats of the marches of Calais, showing bulwarks, dykes, defensive lines, mills, and boundary forts.

The French ultimately benefited from all the work done before 1547. Copies of the maps and plans were taken back to France by French cartographers previously in English service, like Rotz and Nicolas de Nicolay, upon their defection following Henry VIII’s death. As early as March 1548, the English Ambassador in Paris was warning that by means of the “pictures” the French “may land their men that go into Scotland easily.” Eventually the plans were used in a sort of ritualistic revenge for the 1527 celebrations in Greenwich. They seem to have provided the basis for the banners containing bird’s-eye views of Scottish towns and forts that were paraded in triumph through the streets of Rouen to celebrate Henri II’s solemn and triumphant entry into the town in 1550, following his reconquest of the Boullonois. At this point, with domestic rebellion and national bankruptcy threatening, the English government’s direct financing of mapping faltered.

By then, however, the “new” mapping had entered into the mainstream of educated English life and culture. In the course of the 1540s, maps began to play a more prominent part in domestic administration. In 1541 the mayors of leading English towns were ordered to produce plats, or small detailed plans, showing the extent of traditional liberties and places of sanctuary in pursuance of an act for their abolition. Plans survive from Southwark, Norwich, and York and although none are particularly sophisticated cartographically, they mark a milestone in both in English administrative and urban mapping. Maps were also beginning to be used for town planning purposes, and there is a surviving scale map, also of 1541, showing the layout of a proposed settlement centered around a fortified church in drained marshland in the vicinity of Calais.

In one respect, though, the middle years of the century marked the end of a cartographic chapter. There seems little doubt that in the tumultuous days of Edward VI, traditional mappaemundi fell victim to the ferocious hostility to images and idolatry in any form. While altars were being stripped it would seem that the old mappaemundi, which Henry VIII had cherished to the end of his days, were cut up and, if they survived at all, were re-used as stuffing for bindings. It is no accident that the surviving fragment of a great late-thirteenth-century world map from the College of Bonhommes in Ashridge, Herfordshire, now known as the Duchy of Cornwall world map, came to light as a binding for records of the Court of Augmentations, the government department established by Henry VIII to deal with the administration of the dissolved monasteries.

In an increasingly Protestant England, piety expressed itself cartographically through maps illustrating the literal
The Maps: The King and the Appearance of the First Scale Maps

Half of Henry's enormous military budget between 1539 and 1547 was spent on fortifying the coasts of England and Wales, but almost as much went on defending the minute area of Henry's last footholds on the Continent, the pale of Calais and, briefly in the mid 1540s, Boulogne. The remainder was devoted to the Anglo-Scottish border (a balance that was to be reversed in the next reign).  

This focus is reflected in the geographical spread of the mapping that has come down to us. The maps include regional mapping, much of it created in 1539, of the coasts around Calais, the Essex and Suffolk coast, the mouth of the Thames, North Kent, the Dorset coast between Bournemouth and Lyme, the whole of the southwest coast of England from Exeter to Land's End, and the north coasts of Cornwall and Somerset. Given the generally poor rate of survival of early modern maps and state papers, it is likely that the existing material, impressive though it is, is only a small percentage of the original total.

The plats and sketch maps created in response to Henry and Thomas Cromwell's injunctions were initially prepared locally. Stuart has found mentions in Plymouth's local records of several "plats of the Towne and porte," none of which apparently survive, being drawn up there in 1538/9. The same thing doubtless happened elsewhere, and in the process an extensive corpus of English town plans was probably created, only the ghosts of some of which now survive. It is clear, from the stylistic similarities between the surviving maps of widely separated areas, such as the coasts of Suffolk and northern Somerset, and evidence of compilation in the creation of others, that at court skilled draftsmen, who were employed in a variety of artistic and administrative work for the crown, redrew and collated into presentation maps many of the rather rough and sketchy materials that came from the provinces.

TNA in London has accounts submitted in 1546 by one John Collier, who was working in Greenwich, for plats of Boulogne that he had copied (and presumably enhanced) for the king from originals sent from France, and many of

108. For a full discussion, see Catherine Delano-Smith and Elizabeth Morley Ingram, Maps in Bibles, 1500–1600: An Illustrated Catalogue (Geneva: Librairie Droz, 1991). Significantly, as Worms has pointed out (see chapter 57, esp. p. 1697), no Bible maps were published in England under the Catholic Queen Mary, although more than sixty were to be printed in London between 1558 and 1600, reflecting the revival of Protestantism in England under Queen Elizabeth.


114. This consists of about one hundred maps of the 1530s and 1540s in the collection assembled by Sir Robert Cotton and now in the BL; maps in an atlas in the Old Royal Library, also in the BL; several maps and plans among the Cecil papers at Hatfield House, Hertfordshire; a few maps in TNA; and scattered single maps elsewhere.

115. BL, Cotton MSS. Aug. Li.8 (anonymous, “The coste of England uppon Severne,” that is, the north coast of Somerset); Li.31, 33 (anonymous, untitled map of Dorset coast from Poole to Lyme); Li.35, 36, 38, 39 (anonymous, untitled chart of the southwest coast of England); Li.53 (Richard Cavendish, untitled chart of southern Suffolk, Essex, north Kent, and the mouth of Thames); Li.57 (Richard Cavendish, untitled chart of Essex and Suffolk coasts); Li.70 (anonymous, untitled chart of Calais and environs); BL, Royal MS. 18.D.III, fols. 9v–10 (anonymous, untitled chart of Poole Harbour, Dorset). To this list, although belonging in Edward VI's reign, should be added Cotton MS. Aug. Li.71 (untitled chart of marches of Calais probably by Thomas Pettet, ca. 1550).


117. Cotton MSS. Aug. Li.8 (anonymous, “The coste of England upon Severne,” that is, the north coast of Somerset), Li.58 (untitled chart of Suffolk coast from Orwell Haven to Gorleston).
the regional maps of 1539–40 are likely to have been put together from maps sent in from the provinces in the same way. At least three highly finished plans, showing Anne of Cleves’s proposed passage to England in 1539, the 1514 attack on Brighton (plate 64), and a fort near Poole in Dorset, were drawn by Anthony Anthony, a clerk of the ordnance office at the Tower of London (as well as brewer, gunner, and chronicler), who is better known for the rolls named after him and created in 1546, depicting the ships of Henry VIII’s navy. Several of these finished, presentation maps were collaborative efforts. The ships on one of the plans of Dover harbor, for example, seem to be in a different hand and to have been added after the execution of the main part of the map. The earliest maps and plans are predominantly pictorial and naturalistic, although to a variable scale and utilizing some non-naturalistic features, such as a pink sea. They are in the Flemish style that is found, for instance, in plans of the Scheldt dating from the 1460s, and sometimes, as in the case of the “Long View” of the southwest coast of England, they give measurements in kennings, a Netherlandish measure. They intentionally exaggerate the size of vulnerable areas, such as beaches, at the expense of relatively impregnable areas, such as cliffs, with strategically important man-made features like beacons and church towers (which were frequently used as beacons), and parks where military levies and horses could be fed and watered being shown large at the expense of other, less important buildings. In flatter regions, such as Essex and Suffolk, which lay open to invasion at almost every point, efforts are made to depict towns further inland, such as Ipswich, which would have offered the first serious line of defense. The earliest of these maps were almost immediately annotated to show where new forts should be built, with comments on progress of the building works, or lack of it, being added later.

The maps foreshadowed the words written by George Rainsford in 1556 in the “Ritratto d’inghiilterra” that he prepared for Philip II. Rainsford wrote that as a result of the works of the 1530s and 1540s, the English “fear no foreign power, because the places where ships can land are well fortified and guarded, and those that are not guarded are protected by high and strong cliffs. In addition, the kingdom is strong because of the provisions it makes against unexpected attacks”—meaning beacons and musters—“so in time of danger the whole country can quickly take up arms.”

These same maps incorporate vignette oblique views and miniature plan views of the less militarily important towns and ports, doubtless derived from plats by local gentlemen. In this way it was possible to see the layouts and principal buildings of towns such as Canterbury (fig. 54.5), and of Sandwich and Rochester, Ipswich and Harwich, Lyme and Mousehole, and Exeter and Plymouth, most of which had never previously been mapped. In addition presentation maps were prepared of individual towns and small areas that were particularly vulnerable to attack, such as Brighton, where the French had landed and pillaged in 1514, Scarborough, Hull, and Mount’s Bay. The plans of individual fortifications tended to be quite different from the essentially pictorial coastal surveys that continued to be produced side-by-side with them. They survive as presentation plats of individual towns, such as Hull, Berwick, Calais, Dover, Boulogne, Newcastle, and Portsmouth, and individual strong points like Tynemouth, Carlisle Castle, Guines in the Pale of Calais, and Ambleteuse (near Boulogne).

118. I am most grateful to Margaret Condon of TNA for bringing the accounts of John Collier to my attention and to Rose Mitchell for supplying me with the reference (TNA, E 314/82). The only surviving example of a draft map and the final presentation map seems to be the sketch map of the Zuiderzee prepared by John à Borough and Richard Couch(e) in 1539 (BL, Cotton MS. Aug. Li.29; fig. 38.1) and the presentation map showing Anne of Cleve’s proposed journey by sea to England, for which see p. 1598, note 74. However, where the original mapmaker was a skilled draftsman, as Richard Cavendish was, it seems that they also prepared the finished presentation maps (see, for example, BL, Cotton MSS. Aug. Li.53, Li.57).

119. Ann Payne, “An Artistic Survey,” in The Anthony Roll of Henry VIII’s Navy: Pepys Library 2991 and British Library Additional MS 22047 with Related Documents, ed. C. S. Knighton and D. M. Leoades (Aldershot: Ashgate for the Navy Records Society in association with the British Library and Magdalene College, Cambridge, 2000), 20–27, esp. 21, and on Anthony Anthony, whom the author argues was probably not the brother of Cornelis Anthonisz., as has been widely assumed, see also C. S. Knighton, “The Manuscript and Its Compiler,” in Anthony Roll, 3–11, esp. 3–4. The plan of the fort near Poole is BL, Cotton MS. Li.29. The ships on a 1546 plan of Ambleteuse (BL Cotton MS. Aug. Li.8) and possibly the whole plan seem also to be by Anthony Anthony. It is significant that Anthony’s father was a Netherlander and that Anthony himself was considered to be one. Like Richard Lee, he was in contact with Viscount Lisle, the governor of Calais. Like Richard Cavendish, he started his career as a gunner.


121. The plan of the Scheldt is reproduced in Harvey, “Local and Regional Cartography,” 488–89; the “Long View” is BL Cotton MS. Aug. Li.33, 36, 38, 39.

122. I am grateful to Matthew Champion for this observation.


124. BL, Cotton MSS. Aug. Li.54 (contains vignette bird’s-eye views of Canterbury, Ipswich, Rochester, and Sandwich), Li.18 (anonymous, untitled pictorial map of Brighton), Li.34 (anonymous, untitled chart of Mount’s Bay), Li.1 (anonymous, untitled map of Scarborough), Li.83 (anonymous, untitled map of Hull). Several of these maps are illustrated and discussed in Harvey, Maps in Tudor England, 40, 46–47, 50, and 68. See also Peter Barber, “Preparing against Invasion,” in Tales from the Map Room, 110–11 (Brighton); K. J. Allison, “Kingston upon Hull, East Riding of Yorkshire,” in LMP 353–54; and Peter Barber, “A Revolution in Mapmaking,” in The Map Book, ed. Peter Barber (London: Weidenfeld & Nicholson, 2005), 100–101.

125. BL, Cotton MSS. Aug. Li.22, 23 (Richard Lee (?), “The Haven of Dover”); Li.26 (anonymous, untitled plan of Dover and harbor);
and scale maps, with techniques for depicting relief that anticipated contouring and hill shading, for the country

Li.59 (John Rogers, “Ambletw” [Ambleteuse]); Lii.8 (anonymous [Anthony Anthony?], “Haven Etwew” [Ambleteuse]); Li.68 (John Rogers, untitled plan of fortifications for Ambleteuse); Li.73 (John Rogers, “Haven Etwew” [Ambleteuse]); Li.81 (anonymous, untitled plan of Portsmouth); Lii.7 (Gian Tommaso Scala?), untitled plan of Tynemouth Abbey and castle); Lii.12 (anonymous, untitled plan of Guines castle); Lii.23 (anonymous, “The towe and castle of Guynes”); Lii.51 (anonymous, plan of fortifications of Guines); Lii.52 (anonymous, “The Plot of Gvins,” that is, the fortifications of Guines); Aug. I supp. 2 (anonymous, untitled plan of Guines castle); Aug. I supp. 14 (John Rogers, untitled plan of Guines castle); Li.11 (anonymous, “the castell of Carlil”) Aug. I supp. 1 (John Rogers, untitled plan of King’s manor house at Hull); Aug. I supp. 3 (John Rogers, untitled plan of harbor works at Hull); Aug. I supp. 4 (John Rogers, untitled plan of castle and blockhouses at Hull); Aug. I supp. 20 (John Rogers, untitled survey of Hull area); Hatfield House, CPM.I.65 (anonymous, plan endorsed “Plott of Tynmouth and Newcastle”); Aug. Lii.53 (John Rogers, endorsed “of Boullen wt a devyes of a campe for the wynnyng of the frenshe fortyfycan foranest bullen”); Aug. Lii.75 (John Rogers [?], “Country of Guynes and Boelenois”); Aug. Lii.77 (John Rogers, “Boleine with the French Fortresse and the Country towards Hardilo”); Aug. Lii.82 (anonymous, untitled map of country around Boulogne); Aug. I supp. 5 (John Rogers [?], untitled map of Boulogne); and Aug. I supp. 6 (anonymous, untitled fortifications near Boulogne).

126. Hale, “Defence of the Realm,” 375–77. The inventories of his goods show that Henry had all the equipment, such as rulers and dividers, necessary for mapmaking as well as for map use in his study (Barber, “England I,” 44–45). In April 1544 the Earl of Herford (later the Protector Duke of Somerset) promised that he would “accomplish the devices written in the King’s own hand in the platte of Temptallen [Tentallon Castle, East Lothian]” (Brewer et al., Letters and Papers... of Henry VIII, vol. 14, pt. 1, 432, quoted in Hale, “Defence of the Realm,” 391).


128. A plan of Guines by John Rogers or Richard Lee, datable to 1540 or, more likely, 1541 (BL, Cotton MS. Aug. I supp. 14), is thought to be the earliest English topographic map drawn to scale (“The Inshe conteynyth L. fotte”) (Harvey, Maps in Tudor England, 36; Shelby, John Rogers, 5–23 and pl. 1; and HKW, 3:402, no. 10). See also Marcus Merriman, “Italian Military Engineers,” 60.


130. BL, Cotton MS. Aug. Li.84 (plan) and Lii.13 (view), reproduced in Harvey, Maps in Tudor England, 100, and Shelby, John Rogers, pls. 12 and 13.

131. BL, Cotton MS. Aug. Li.26. The compulsion to experiment can also been seen in the introduction into this plan—and another of the mouth of the Thames (Cotton MS. Aug. Li.53)—of rhumb lines and a hidden circle of compass points that are usually associated with portolan charts.
around Boulogne, which Henry had conquered in September 1544. These were the equal in quality and conception to the best that was to be found elsewhere in Europe (the plan of Portsmouth actually predated the original painted versions of Augustin Hirschvogel's ichnographic plans of Vienna by a couple of years).

They seem mainly to have been drafted by humble-born Englishmen with no formal professional engineering or cartographic training. But they were presumably familiar with Albertian principles and the basics of triangulation, as transmitted by such intermediaries as Gemma Frisius (1533) and summarized in English for them by German mathematicians and French cartographers at court. Masons like Richard Lee and John Rogers would have been familiar with measured architectural plans, and surveyor-administrators like the Suffolk squire Richard Cavendish (Caundish) (the father of the circumnavigator Thomas Cavendish and an expert in gunnery) probably had some form of mathematical training. They would also have seen German printed maps drawn to scale. It is unproven that they learned anything from the Italian engineers employed by Henry, like Giovanni di Rossetti or Gian Tommaso Scala (whose surviving work is far from impressive, despite their theoretical knowledge of and boasting about the latest Italian defense ideas). Instead they had a demanding master with an enthusiasm for maps and an eye for their potential, who pushed his servants mercilessly to meet his requirements and was prepared to reward them generously—Richard Lee married into the fringes of royalty in 1537, was knighted in 1544, and appointed receiver of the Court of Wards and Liveries—if they succeeded.

The Legacy

The importance of these Henrican maps for the future mapping of England can hardly be overemphasized. Once the immediate danger passed they continued to adorn the walls of Whitehall Palace. This was probably the case with the “Long View” of the southwest coast of England of 1539/40, which is far more faded than its companions in the Cotton Collection. Alternatively, they were placed for consultation, together with three-dimensional models (for instance, of Dover “made of earthe sette in a box of woode”) on the shelves of the little library on the second floor of the Holbein Gate in Whitehall Palace. This library was where Henry and his successors and their ministers transacted their business and where the maps and models are recorded as being in the inventories of Henry VIII's goods of the 1540s. There they remained, albeit in diminishing numbers, as a resource until their final dispersal at about the time of the Civil Wars.

Equally important is the impact that Henry's enthusiasm had on his courtiers and ministers. By the end of his reign magnates like the future Dukes of Somerset and Northumberland; wealthy courtiers like Henry Manners, second Earl of Rutland, and Sir Anthony Browne; and ministers like Sir William Paget (later Baron Paget of Beaudesert), the future principal secretary to Queen Elizabeth; wealthy courtiers like Henry Manners, second Earl of Rutland, and Sir Anthony Browne; and ministers like Sir William Paget (later Baron Paget of Beaudesert), the future principal secretary to Queen Elizabeth, were all familiar with measured architectural plans. As Harvey has written, “surviving maps that can be linked with these Italian engineers were nearly all picture-maps as before, often quaint and following rules neither of perspective nor of scale... Only two, by Giovanni di Rossetti, showing fortresses at Arders in Picardy and at Broughton Craig in Angus, seem to be drawn to scale” in 1547. “By then English engineers were fully familiar with the idea of drawing plans to a consistent scale” (Harvey, Maps in Tudor England, 28–29).

132. BL, Cotton MS. Aug. Lii.77, by John Rogers. A scale plan by Rogers of the same area of about the same period (1546) (Cotton MS. Aug. Lii.75) uses other techniques to depict physical relief, demonstrating again the level of experimentation at that time. The plans are reproduced in Tyacke and Huddy, Saxton and Tudor Map-Making, 12–13, and Shelby, John Rogers, pls. 14 and 20.

133. Shelby, John Rogers, 131–35, 147–48, and 152–57, and Merriman, “Italian Military Engineers,” 60–61. For German advances in the making of scale plans after 1500, see Pinto, “Ichnographic City Plan,” 47–48, who points out that the creator of the first ichnographic plan of Vienna, Boniface Wohlmuet, who worked with the artist Augustin Hirschvogel was, like Lee and Rogers, a stone mason by training.

134. Compare Merriman, “Italian Military Engineers,” 57–67, who does not take into account the influence at court and in the field of south Germans like Kratzer, of what English engineers had seen of modern Italian work in France (for which see Hale, “Defence of the Realm,” 385–92), nor the influence of German military engineers and mapmakers in northern Italy, while conflating knowledge of theories of fortification with mapmaking skills. As Harvey has written, “surviving maps that can be linked with these Italian engineers were nearly all picture-maps as before, often quaint and following rules neither of perspective nor of scale... Only two, by Giovanni di Rossetti, showing fortresses at Arders in Picardy and at Broughton Craig in Angus, seem to be drawn to scale” in 1547. “By then English engineers were fully familiar with the idea of drawing plans to a consistent scale” (Harvey, Maps in Tudor England, 28–29).


138. The pictures and other works of art seen at St. James's Palace and in Whitehall by the Duke of Saxe-Weimar in 1613 include several items from Henry's collections and maps and views that recall similar items mentioned in the inventories of 1542, 1547, and 1549, such as a large view of Antwerp, “sketches of several castles and palaces in England,” “a large sea-chart of the whole world drawn with the pen on parchment,” and “Palestine painted in colours on a large table” (William Brenchley Rye, England as Seen by Foreigners in the Days of Elizabeth & James the First [London: John Russell Smith, 1865], 159–67).
Mary, had become equally familiar with the potential of maps as instruments of defense, administration, and propaganda as well as of learning. This was doubtless also beginning to be true of the gentry in their localities.139

Consolidation, 1550–1611: An Overview

The extent and limits of map consciousness

By the 1550s the new consciousness of the utility of maps and familiarity with them was spreading across the educated classes. Wealthy young men who were soon to make names for themselves had grown up surrounded by an ever-increasing variety of maps and globes, particularly those whose parents were associated with the court.140 It became almost instinctive for many of them to create and use maps to analyze problems, to plan, and to display and propagate ideas that had a spatial dimension. As the sixteenth century progressed there was a gradual spread of literacy, nurtured by the increasing availability of cheap printed texts. As a result, the number of people who could make sense of maps, and the potential market for maps, grew. It came to embrace gentlemen, merchants, numerous substantial yeomen, and some urban craftsmen. The rate of growth was uneven, however. Levels of literacy varied enormously from group to group and from county to county, with women and the poor generally remaining illiterate.141

After 1550 better-off English citizens could easily acquire Flemish, Italian, French, and German sheet maps, foreign-printed books illustrated with maps or, after 1570, the often-reprinted atlases of Abraham Ortelius and the town books of Georg Braun and Frans Hogenberg that appeared from 1572.142 Indeed, as Worms has suggested, the relative availability of maps produced by Ortelius and Braun and Hogenberg—as well as their visual appeal—may have helped to spread an awareness of maps beyond the court, local administration, and the universities. He has also pointed out that English tracts on the use of maps, such as Certaine Briefe and Necessarie Rules of Geographie, Serauing for the Understanding of Chartes and Mappes, appeared shortly after the appearance of Ortelius’s atlas.143 By 1600 maps, atlases, globes, and charts had become part of the fabric of the everyday life of the wealthy and middling sorts: so common indeed that Shakespeare or Donne could confidently derive allegories from them in their plays and poems without fear of being misunderstood.144

Yet there were groups and individuals, even among literate groups, who managed perfectly well without maps or charts, and it would be wrong to assume that by 1550 or even by 1603 an awareness of the practical advantages of maps was universal. Then as now there were people who lacked the visual sense necessary to appreciate and use maps. It is quite likely that Elizabeth I herself belonged in this category.145 There is also evidence that before 1560 many mariners still failed to appreciate the advantage of charts over traditional methods of navigation, using plumb lines and the like. This was gradually to change in the following decades, partly under the influence of educational tracts. Particularly influential were Richard Eden’s The Arte of Navigation (1561), a translation of Martin Cortés’s Breue compendio de la sphera y de la arte de navigar (1551), which had been presented to Stephen Borough in 1558 during his visit to the Casa de la Contratación (one of the easily overlooked benefits stemming from Mary’s marriage to Philip II), and William Bourne’s A Regiment for the Sea (1576).146 No

143. See chapter 57 in this volume. The author, D. P., may have been David Powell, the domestic chaplain to Sir Henry Sidney, one of the leading cartographic patrons of the age.
144. Victor Morgan, “The Literary Image of Globes and Maps in Early Modern England,” in English Map-Making, 46–56. Worms has questioned the extent to which map use had penetrated into wider society, but Shakespeare presumably assumed his imagery would be comprehensible even to poor theatergoers.
doubt the increasing employment aboard English ocean-going ships of foreign-born pilots who used charts also served as an example to the English crews.\footnote{147} Nevertheless, the ignorance of even the basic notion of maps and scale that John Norden put into the mouth of his honest yeoman in *The Surveyor’s Dialogue* (1607) was probably drawn from life and demonstrates the limits of map consciousness at the end of Elizabeth’s reign. The reprinting of the text well into the next reign suggests that this ignorance and scepticism continued into the following decades. Worms has also questioned the extent to which the miniature atlases of Pieter van den Keere and John Bill were actually used for the purpose of travel. Even under Charles I, maps were not necessarily generally used in everyday life, even by the literate. Worms has pointed out that the missionary tone adopted by Lewes Roberts in *The Merchants Mappe of Commerce* (1638) suggests that many merchants were doing good business without using maps, “delightfull, profitable and necessary” though Roberts thought them.\footnote{148} Awareness of the cartographic dimension did not necessarily guarantee the appearance of maps. Raphael Holinshend intended maps by Reyner Wolfe, the queen’s printer, to accompany his *Chronicles* that were published in the 1570s, and William Camden wanted maps to illustrate his *Britannia*, but in the end Holinshend’s book appeared without maps, and it was only in 1607 that the *Britannia* appeared with county maps supplied by William Kip and William Hole after Saxton and Norden.\footnote{149} But for all these limitations, the fact remains that by 1600 the majority of reasonably educated English people were familiar with maps, and many had an appreciation of the concept of angular measurement and sometimes even a theoretical knowledge of the techniques required to achieve it.\footnote{150}

**MAP TYPES**

Bendall’s detailed analysis of local mapmakers and the types of map that they were creating, undertaken in the course of her extensive work on compiling a revised dictionary of local mapmakers in Great Britain, reveals significant changes in the types of map being produced after 1550. Before that date over 60 percent of the admittedly small number of named local mapmakers were engaged in planning fortifications, harbors, or in military survey work for departments of state, such as the Office of Works or the Board of Ordnance. Between 1550 and 1603, although the absolute numbers of named military mapmakers increased somewhat, the fraction of fortification and harbor plans fell back to 30 percent.\footnote{151} In contrast, the percentage of private large-scale local mapping rose dramatically. Even before 1550, although on the basis of a minute sample, such efforts constituted 25 percent of overall mapping activity. At the very least, it serves as a reminder that property (at that time in the context of legal disputes) was central to English mapping from the start of the sixteenth century. This figure rose to 40 percent of a much larger sample after 1550. A reflection of the level of governmental, corporate, and private concern with Ireland is shown in the percentage of mapmakers engaged in mapping plantations there. From none before 1550, the fraction rose to 6 percent under Elizabeth I.\footnote{152} Bendall gives the surprisingly high value of 25 percent for urban mapping under Henry VIII, but the sample was minute and the urban mapping was to a large extent an incidental off-shoot of defense planning and harbor improvement, as with the repeated mapping of Dover, Berwick, Calais, Carlisle, and Portsmouth. Although the fraction fell to 15 percent under Elizabeth I, it in fact represents a far higher total number and a context that was predominantly civilian—whether the mapping was motivated by reasons of administration, civic pride, antiquarianism, or a combination of all three.


\footnote{150} Cormack, *Charting an Empire,* 117–28.

\footnote{151} A. Sarah Bendall, *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 Eden (London: British Library, 1997), 1:59–65. The following is based on an analysis of the detailed figures that she gives on the backgrounds, families, patrons, principal occupations, map types, etc., of the surveyors included in the Dictionary. The exclusion of anonymous mapmakers, whose work was frequently private in nature, taking the form of sketches in notebooks, probably leads to some exaggeration in the percentage of official mapmakers before 1550.

After 1550, as Worms and Luborsky and Ingram have demonstrated, a growing number of books printed in England were illustrated by maps. Until the 1570s such illustrations, which were sometimes to be found in tispieces, were exclusively woodcuts, although after that date copperplate engraving came to predominate. Most of these earlier examples seem to have accompanied bibles or technical handbooks, such as William Cuningham’s Cosmographical Glasce, although from the 1580s they seem increasingly to have been found illustrating travel or news accounts. A considerable number of these maps were not original in terms of their geographical content, being a close copy of what is probably a second edition of 1555, showed no originality in geographical content, being a close copy of what is probably a second edition of 1555, showed no Geminus’s map of Spain, known from a single copy of survived, the number was probably never considerable. Although more were created than the handful that has production of Robert Thorne’s world map of 1527.

After 1550 a few wall maps were published in England. Although more were created than the handful that has survived, the number was probably never considerable. Geminus’s map of Spain, known from a single copy of what is probably a second edition of 1555, showed no originality in geographical content, being a close copy of a map published by Hieronymus Cock in 1553. Similarly the woodcut, so-called Agas map of London, originally published in about 1562, but known only from early seventeenth-century states, is copied from the lost soc-called Copperplate map of London of about 1557–59, which was published and probably also engraved in the Netherlands. In contrast the Anthony Jenkinson/Climent Adams map of Muscovy of 1562, of which there is only a sole survivor, and Saxton’s wall map of England and Wales of 1583 are original works of cartography, suggesting a slowly growing independence of spirit and confidence on the part of English mapmakers and publishers when they had a degree of official support and the technical means to undertake such ambitious projects.

One area of mapmaking that languished until the closing years of Elizabeth’s reign was chartmaking. In April 1547 the Portuguese émigré chartmaker Diogo Homem, was able to get away with charging one hundred gold ducats for one of his atlases “hauing respect . . . to the wante and lack of expert lernyd men in that faculte of makynge of cartes or mappes, and the scarcyte and price of suche cartes withen this realme of England.” Merchants and all other Englishmen who appreciated the value of charts had largely to depend on foreign-made charts or on the work of such émigrés as Homem or the Portuguese pilot Simão Fernandes, regardless of their sometimes questionable characters. After 1590 the situation improved. Chartmaking in the docklands lining the Thames east of the Tower of London was one of the few areas of intense cartographic activity in early Stuart England, even if the products were heavily dependent in content and appearance on Dutch work.
Henry VIII’s death when, according to figures supplied by Bendall, the degree of direct crown support for mapmaking dropped from 65 percent to barely 16 percent, reflecting the crown’s growing difficulty in maintaining its income and influence in an increasingly wealthy and diversified society. Indeed further figures, giving percentages for total cartographic activity that are over 100 percent, suggest that several mapmakers employed by government were counted twice because they also did significant amounts of work for private and corporate patrons, and these numbers are borne out by research into particular instances.161

These bald figures, however, conceal the continuing importance of crown and government, at least under Elizabeth. Although no longer so active—or wealthy—as under Henry VIII, after 1550 the crown continued (frequently in collaboration with local authorities) to commission the mapping of English forts and fortified harbors, such as Dover, Berwick, Portsmouth, and Plymouth, and of exposed estuaries, notably the Thames, Severn, and Humber. Similar, and sometimes even greater, attention was paid to strategically important overseas regions, like Normandy, Brittany, and the Netherlands, where English forces were active at times of tension, particularly in the 1560s, 1580s, and 1590s. Spanish and Spanish-American ports received spasmodic attention. Above all and throughout the reign, there was Ireland. Native-born engineers, such as Sir Richard Lee (who only died in 1576), Rowland Johnson, Richard Popinjay, Paul Ives (Ivy), Robert Adams, Simon Basil, and Richard Bartlett featured prominently with—mainly in the first decade of the reign—a few foreign engineers, such as the Italians Giovanni Portinari, Archangelo Arcano, Jacopo Aconcio, and Robert Lythe, who may have been Flemish, and, between 1585 and 1602, one sole foreigner, Federigo Genebelli.162

Among the royal engineers, Robert Adams, the son of Clement Adams and, like him, associated with the Dudley family,163 was particularly noteworthy. He briefly served as surveyor of the queen’s works and produced jewel-like plan views of Dutch “cautionary” towns like Flushing that were temporarily under English administration (1585).164 Maps showing the defenses along the Thames and Elizabeth I’s progress down the river in August 1588.165 He also produced official commemorative maps of the Armada that were to be engraved by Augustine Ryther,166 and other, lesser-known maps illustrating episodes of the ensuing war (plate 65). Nor was his servant, Simon Basil, much less skilled.167

In the later sixteenth century, mapmakers associated with other fields of cartography were drawn into royal service as circumstances required. The hydrographer William Borough prepared maps of Cádiz to commemorate Drake’s attack on the principal Spanish Atlantic port in 1587168 and charts of the approaches to the coasts of Kent and Sussex and of the Thames at a time of renewed

161. For example, Bendall, “Romney Marsh,” 37–38, shows that the royal military engineer Federigo Genebelli was also employed by the local authorities in Rye to prepare drainage maps between 1585 and 1591.


165. BL, Add. MS. 44839, illustrated and discussed in Rodríguez-Salgado, Armada, 256. There is a little-known but somewhat less elaborate version in the BL’s King’s Topographical Collection (K Top. 6.17) that may have belonged to Elizabeth I herself, as many of the maps in this collection stem from the private libraries of early British monarchs.

166. Reproduced in Rodríguez-Salgado, Armada, 243–48.

167. Basil’s map of Ostende of about 1590 (Hatfield House CPM.II.46) is reproduced in Rodríguez-Salgado, Armada, 131.

168. TNA, MPF 318, illustrated and discussed in Rodríguez-Salgado, Armada, 106–7.
threats of invasion in the following decade. Ralph Treswell, who is more associated with the preparation of estate and property plans, provided a map of Brittany at the time of the English campaign in support of Henri IV in 1594. Antiquaries could also be called on. George Owen of Henllys prepared a detailed plan of Milford Haven in 1595 for the queen at the request of the lord lieutenant of Wales, the Earl of Pembroke. William Lambarde provided his own map of the beacons in Kent in 1585 (fig. 54.6), which was to be published as an illustration to the second edition of his Perambulation of Kent (1596). Many who would not have regarded themselves primarily as mapmakers, such as the Welsh soldier Walter Morgan Woulphe, serving in the Netherlands in the 1570s and throughout the 1580s, another soldier, John Thomas, serving in Ireland in the 1590s; the East Anglian squire Sir Edmund Yorke; and even commanders like Sir John Norris and Humphrey Gilbert, also contributed. Nor were they all lacking in technical knowledge, even if they could not always apply it: an annotation on one of Yorke’s maps of the coastal defenses of Weybourne in Norfolk reads plaintively, “Reason would a Scall. but tyme permits not . . . Mad in hast this fyrst of May. 1588.”

In other mapping fields, such as hydrography and national and county mapping, the crown provided indirect

FIG. 54.6. WILLIAM LAMBARDE, MAP OF THE KENT BEACONS, 1585.

Size of the original: 32.3 × 54.5 cm. Photograph courtesy of the BL (Add MS. 62935).

169. BL, Cotton MS. Aug. Li.17, reproduced in Rodríguez-Salgado, Armada, 209.
171. B. G. Charles, George Owen of Henllys: A Welsh Elizabethan (Aberystwyth: National Library of Wales Press, 1973), 154–58. Pembroke’s letter to Owen of 1 November 1595 gives a good idea of the expectations of central government as well as the cartographic sophistication of administrators by the 1590s: “I pray you be very careful to make your scale perfect for thereby shall I be able to know the true distance of places which unknown will either make void or make fruitless all our endeavours. First take truly the breadth of the entrance of the haven. Secondly the distances of one place to be fortified from another. Thirdly what place every fortification may annoy. Forget not to note in how many places you shall conceive fortifications to be needful” (George Owen, 154).
172. See Rodríguez-Salgado, Armada, 148, and Barber, “England II,” 74.
174. For example, a pictorial plan of the storming of Enniskillen Castle (“Eneskilin Castell”), 1593, BL Cotton MS. Aug. Lii.39 (reproduced in Harvey, Maps in Tudor England, 63).
176. Hatfield House, CPM.II.56; Skeleton and Summerson, Description of Maps, 52 (no. 54); and reproduced Rodríguez-Salgado, Armada, 148–49.
support through the supply of patents, passes, and rewards, although the bulk of the costs seem to have been borne in a semiprivate capacity by courtiers, officeholders, or administrators.177

Ministers, Courtiers, Administrators, and the Gentry

Perhaps the crown’s most significant contribution, however, was its continuing ability to force the national cartographic pace by example and by exerting pressure to produce maps on those with whom it came into contact. Because of his obvious importance and the extent of his surviving archive, there has been a tendency since the appearance of Skelton and Summerson’s pioneering catalog of his maps and architectural plans, to attribute the increasing use of maps by government solely to William Cecil, Lord Burghley.178 Undoubtedly he did play a major part. Whether in his roles as master of the Court of Wards (1561–98), principal secretary (1550–53, 1558–71), or as lord treasurer from 1572 until his death in 1598, his subordinates realized that he expected to be presented with maps to clarify problems with a spatial element. The plentiful annotations on maps that passed through his hands reveal the type of information that he sought to draw from them, be it the arms and men available to potentially traitorous magnates on the Scottish borders, the appropriate spread of loyal justices of the peace in more settled areas, troop movements, the course of a foreign siege, or the appropriate location of forts in Ireland. He also made several sketch maps himself.179 Moreover, in a semiofficial and private capacity he was a considerable patron of cartography: Bendall has estimated that 2 percent of the English local maps by named mapmakers created under Elizabeth I were commissioned by him.180

Other national leaders played no less important roles in this respect, however. The Dudley family—John, Viscount Lisle, Earl of Warwick and eventually Duke of Northumberland, the son of Henry VII’s hated minister and Edward VI’s senior counselor between 1551 and 1553; John’s son, Robert, Earl of Leicester; and, as a practitioner, the latter’s illegitimate son and namesake Robert Dudley—were cartographically interested both before and after Cecil.181 Moreover, Burghley had colleagues like Sir Francis Walsingham, Elizabeth’s spy master and principal secretary from 1573 to 1590; Sir Christopher Hatton, the lord chancellor from 1587 until his death in 1592; and Charles Howard, Lord Howard of Effingham and later first Earl of Nottingham, the lord high admiral, who seem to have been just as cartographically aware and dependent on maps for the efficient execution of their duties.182 At the end of Elizabeth’s reign, her favorite Sir Walter Raleigh was an avid user of maps, whether of the Roanoke Colony in the 1580s, or in the 1590s of Guiana and of his Irish estates at Mogeely and Inchiquin, as well as drawing maps himself.183

Beneath these favorites and ministers were figures of the second rank like Sir Henry Sidney, the Duke of Northumberland’s son-in-law and brother-in-law to the Earl of Leicester, whose career, whether in connection with the Muscovy Company in the 1550s and early 1560s or as lord deputy of Ireland and president of the Welsh Marches for most of the time from 1565 until his death, was marked by sponsorship of such significant mapping ini-

178. Skelton and Summerson, Description of Maps.
181. Barber, “England II,” 66–67 and 74. The extent of the earl of Leicester’s cartographic interest and sophistication can be judged from the maps, charts, and globes listed in the inventories of his goods at Kenilworth and his London home, Leicester House. They included maps by Ortelius and Saxton, and a map of Denbighshire almost certainly by Humphrey Lhuyd, as well as charts, maritime atlases, and Wagenaer’s Spieghel der zeevaerdt. He also possessed manuscript plans of forts in the Channel Islands. The relevant inventories are listed and discussed in Simon Adams, “The Papers of Robert Dudley, Earl of Leicester III: The Countess of Leicester’s Collection,” Archives 22, no. 94 (1996): 1–26. See also Adams, Household Accounts, 256 and 259; William Herle to Leicester, 1582 (BL Cotton MS. Galba C. VII, fol. 256); William Burde to Leicester, 6 September 1583 (Oxford, Bodleian Library, Tanner MSS. 79, fol. 207). I am most grateful to Simon Adams for these references and for providing me with transcripts of the inventories and letters. William Cuningham dedicated his Cosmographical Glasse, Conteyning the Pleasant Principles of Cosmography, Geographie, Hydrographie or Navigation (London: Ioan Daij, 1559) to Leicester and lauded his scientific interests.
183. Barber, “England II,” 88 n. 36. The Mogeely map of 1598, now in the National Library of Ireland, which has been attributed to John White working from a survey by Francis Jobson or Thomas Harriot, is reproduced in J. H. Andrews, Irish Maps (Dublin: Eason, 1978), 10 (no. 12), and discussed in W. A. Wallace, John White, Thomas Harriot and Walter Raleigh in Ireland (London: Historical Association, 1983), who attributed it to White and Harriot. Wallace also discusses the map of Inchiquin of 1589 by Thomas Harriot, now in the National Maritime Museum in London. For the Roanoke maps, see John White, America, 1585: The Complete Drawings of John White, ed. P. H. Hulton (London: British Museum Publications, 1984), 10–11 and 20. For maps by Raleigh, see BL, Add. MS. 17940A (fig. 59.8, Guiana) and Add. MS. 57555 (a commonplace book containing sketch maps of eastern Mediterranean coastlines, illustrating a gazetteer prepared in connection with the preparation of his History of the World). Another map of Guiana of about 1595–96, related to Raleigh’s and possibly once owned by him before passing into the hands of the “wizard” Earl of Northumberland, was sold at Sotheby’s in London on 29 November 1990 (lot 219). Raleigh is also said to have owned the roteiro by João da Castro of 1543 now in the BL (Cotton MS. Tiberius D. ix ) (Cortesão and Videira da Mota, Portugaliae monumenta cartographica, 1:137–44, pls. 66–68, and see João de Castro, Le rouetier de Don Joam de Castro, trans. Albert Kemmerer [Paris: P. Geuthner, 1936]).
tivatives as Jenkinson’s and Adams's original printed map of Muscovy (1562 and later) and Robert Lythe’s survey of Leinster and Munster (1568–71). There was also George Carew, Baron Carew of Clotpton and (1626) Earl of Totnes, diplomat, president of Munster, governor of Guernsey, and master-general of the ordnance, who avidly collected maps of Ireland, some of which were ultimately to be published in Pacata Hiberniae (1633).

The queen’s representatives in the English counties also played their part. In 1587 the deputy lieutenants of Sussex, Sir Thomas Palmer and Walter Covert, commissioned Nicholas Reynolds of London—presumably the engraver of Jenkinson’s and Adams’s map of Muscovy (1562) and Saxton’s map of Hertfordshire—to survey that county’s coastline. The charts were intended to anticipate not only invasion but also rebellion: as well as showing the coastline they also indicate the homes of prominent Catholic families who lived near the coast, such as the Gage family of Firle Place.

At a third, still lower level, were courtiers and administrators, such as John Blagrave’s patron Sir Francis Knollys, the master of the household and a privy councillor under Elizabeth I, and a bevy of clerks to the Privy Council. Starting with Sir Thomas Elyot, these included Anthony Ashley, who at the request of Christopher Hatton translated Wagenaer’s Spieghel der zeevaerdt into English as The Mariners Mirrour (1588), and William Waad, who financed the Middlesex volume of Norden’s Speculum Britanniae (1593). Lawyers working at the fringes of government (e.g., in the Court of Wards or in the courts of law, like Thomas Seckford and Sir William Cordell, the master of the rolls) were also, as we shall see, active patrons of mapmakers. These people, collectively, set the tone for the administration, local as well as central.

Ministers, courtiers, and royal deputies beyond the court not only acted as patrons and role models. Continuing the pattern set in Henry VIII’s last years, they also compelled provincial administrators to adopt a cartographic mode of operation. There was an increasing assumption that whenever there was a spatial aspect to the matter in hand, communications with court—whether as responses to ministerial requests or as pleas for support—should be expressed or illustrated cartographically. Proposals from the mayor and burgesses to the Privy Council for improvements to the harbors of Dover in 1552 or Great Yarmouth two decades later were accompanied by maps. Dispatches from Normandy and Brittany, Ireland, or the Netherlands, sketching the course of campaigns in the 1580s and 1590s; proposals relating to the drainage of Romney Marsh; and accounts of the estates of minors that were being administered by the Court of Ward or of the confiscated estates of traitors like the earls of Arundel had maps enclosed with them. Episcopal lands administered by the court in the intervals between bishops—a finance-raising maneuver of which Elizabeth was particularly fond—similarly got mapped. Nor was this all. Burghley and Walsingham, Sidney and Hatton carried their cartographic inclinations into their private lives. Like other leading merchants and country gentlemen and indeed the queen herself, they invested heavily in the voyages of discovery and pillage led by Gilbert and Frobisher, Drake and Raleigh. They were closely involved with the great trading companies, and as shareholders in both contexts, they expected the instigators to express their ideas for voyages through charts and to be kept informed of progress in a similar fashion, be

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185. Andrews, Irish Maps. See also Skelton and Summerson, Description of Maps, 9, 10, 17–18, and 20. Carew’s Irish maps are now split between Trinity College, Dublin, Lambeth Palace Library, and the National Maritime Museum in London, where they are embedded in the map collection of the late seventeenth-century administrator and master-general of the ordnance, George Legge, Lord Dartmouth.

186. BL, Add. MS. 57494, discussed in Helen Wallis, Raleigh & Roanoke: The First English Colony in America, 1584–1590, exhibition catalog (Raleigh: North Carolina Department of Cultural Resources, 1985), 93. An eighteenth-century copy is to be found in the BL, King’s Topographical Collection, 42.10a.


191. BL, Add. MS. 69824 (Dover) illustrated, but without the accompanying contemporary note referring to the Privy Council, in Barber, “England II,” 60; BL, Cotton MS. Aug. Li.74 (Great Yarmouth), illustrated in Tyacke and Huddy, Saxton and Tudor Map-Making, fig. 16.

192. Barber, “England II,” 60–61, 74, and 76. For examples of sketch maps sent from foreign campaigns, see BL, Cotton MS. Aug. Li.92 (siege of Nijmegen, 1586); Cotton MS. Aug. Li.90 (siege of Rouen, 1591); and Cotton MS. Caligula E.x.1.276 (Brest, 1594).


194. For instance, BL, Royal MS. 18.D.III, fols. 42–43 (maps of the former Fitzalan lordships of Clun, Oswestry, and Purslow, created following the forfeiture of the Earl of Arundel’s lands in 1584), and BL, Cotton MS. Aug. Li.82 and Hatfield House, CPM.II.48 (land in Wainfleet, Lincolnshire administered by the Court of Wards on behalf of a minor, ca. 1580). See also Skelton and Summerson, Description of Maps, 54–55 (no. 60).

195. For example, see the fine, if damaged, map of the Seven Marshland Lordships (now BL, Add. MS. 71126) that was probably commissioned by the crown through Lord Burghley in about 1582, at a time when it was administering and receiving the revenues of the bishopric of Ely. See Valentine Bolam and Jayne Thorpe, “The Charles Lynn Marshland Map,” in Old Fenland Maps: Exhibition Catalogue (with Biographical Sketches of the Cartographers) ([Tring, Hertfordshire, Eng.]: [Map Collector Publications], 1993), unpaginated [30–36].
they charts of Virginia by Thomas Harriot and John White or of the frozen north by William Pet and Charles Jackman or William Borough. From the 1580s they also used maps as a tool of estate management.

Cumulatively these pressures from the center and the force of example locally could not but implant an awareness of the practical utility of maps among sizeable portions of the gentry families who provided the justices of the peace, through whom the country was largely administered. This awareness led them to commission mapping or to undertake it themselves in their private sphere. The process by which mapmaking spread from court elites to universities and country squires can sometimes be illustrated through the sequence of master-apprentice relationships. Thomas Clerke, a one-time member of Burghley's household and the pupil of his steward, Peter Kempe, who made maps, worked for All Souls' College, Oxford, after 1589. There he trained Thomas Langdon, who himself trained a series of local mapmakers whose work for the gentry is now spread throughout English local record offices.

**Corporate Bodies**

After 1550 corporate bodies and private individuals took the place of the crown as the principal direct patrons of mapmakers. The corporate bodies came in a variety of forms. Most notable were perhaps the mayor and burgesses of cities, major towns, and ports. The attractive but anonymous picture map showing the town and defenses of Great Yarmouth in about 1585 is probably by a local artist and may be copied from a painting that once adorned its town hall. Trading companies also proved to be active patrons of mapmaking. The Muscovy Company's patronage of Sebastian Cabot in the 1540s and of Chancellor, Jenkinson, and Stephen and William Borough in the next decade—frequently at the prodding of the crown—anticipated the large-scale cartographic activity and patronage of the Dutch East India Company. Corporate patrons also included Trinity House, which commissioned several surveys of the mouth of the Thames, and even merchants of the Hanseatic League, who seem to have been the patrons of the Copperplate map of London that was probably created between 1557 and 1559. Other corporate bodies were the livery companies of the City of London, who were particularly involved in the Ulster plantations as well as the mapping of their extensive English estates; corporate landowners, such as the Oxford and Cambridge colleges; and hospitals, such as Christ's, St. Thomas's, and St. Bartholomew's in London. Their patronage was not confined to maps alone: Stephen Borough persuaded the Muscovy Company, for instance, to finance Richard Eden's translation of de Medina's *Arte de Navigar*.

**THE PRACTITIONERS**

**Foreigners, Nobles, and Gentlemen**

Bendall has demonstrated that there was a dramatic increase in the number of named local mapmakers after Henry VIII's death, rising from about twenty in 1550 to about 220 in 1600. This figure is a considerable underestimate of the total number of map and chartmakers active in England in this period. It does not include the numerous anonymous local mapmakers, especially those who prepared maps and sketch maps for legal purposes; the native-born chartmakers who, as Tyacke has demonstrated, began to be active particularly in the docklands east of the Tower of London from the 1590s; or the numerous curious, pious, and mathematically or historically inclined individuals from all literate groups who spent time making their own maps of the world beyond the British Isles as sheet maps or to illustrate texts. It also omits the engravers who cut these maps onto western plantations as well as the mapping of their extensive English estates; corporate landowners, such as the Oxford and Cambridge colleges; and hospitals, such as Christ's, St. Thomas's, and St. Bartholomew's in London. Their patronage was not confined to maps alone: Stephen Borough persuaded the Muscovy Company, for instance, to finance Richard Eden's translation of de Medina's *Arte de Navigar*.
plates or wood blocks for the books and their publishers, discussed by Worms. Nevertheless, for all the caveats, Bendall’s figures provide a basis for at least a preliminary analysis of mapmakers.203

Before 1550 a significant fraction of the exceedingly few mapmakers who are known as individuals were foreign-born (21 percent) and military engineers (25 percent), with, implicitly, the native born mapmakers being predominantly masons or gunners (about 20 percent). No less than 14 percent of the named mapmakers belonged to the nobility under Henry VIII and, at 6 percent under Elizabeth I and 3 percent under the early Stuarts, the actual number probably increased slightly. Given the small size of the titled nobility before 1603, these numbers suggest that a high percentage of the aristocracy made maps. In the course of the later sixteenth century there was an increase in the number of mapmakers from the gentry, whose negligible number before 1546 swelled to 7 percent under Elizabeth before falling back in percentage (although perhaps not in number) to 2 percent between 1603 and 1625. These percentages could probably be accounted for in large part by the high rates of literacy among such groups and their receptiveness to the recommendation of drawing and mapmaking in fashionable schoolbooks;204 their exposure to pressure from the crown to provide maps; the increasing interest in mathematics, descriptive geography, and chorographical literature at the universities that some of them attended, albeit often briefly;205 and the growth of mapping as an element in estate management after 1570.206

Humanists, Mathematicians, and Instrumentmakers

In parallel with developments elsewhere in Europe, from the late 1540s an influential group of well educated, well connected, internationally connected, and interconnected young humanists much influenced by the concepts of Neoplatonism began making their mark as mapmakers. Their passionate, shared patriotism found expression in antiquarian and linguistic pursuits and the desire to apply Euclidean geometry and mathematics in a practical context, including through maps, in the service of their country. A significant number of mapmakers before 1547 (18 percent of the total) were authors and academics. Under Elizabeth I, at 9 percent, these categories constituted a higher fraction than did military engineers (5 percent) of the total number of mapmakers, although in reality the boundaries between such groups were permeable. Several authors and academics, such as Thomas and Leonard Digges, were also trained engineers, mathematicians, and, moreover, members of the gentry. Nevertheless, if authors, mathematicians, and schoolmasters are grouped together, the total percentage of learned men who made maps under Elizabeth I more than doubles.

A prominent group among the humanist mapmakers were those who, like Ortelius in Flanders, combined philology and antiquarianism with a neoplatonist interest in mathematics. The Welshman Humphrey Lhuyd, a member of the bibliophile Earl of Arundel’s household, and Laurence Nowell, the young Earl of Oxford’s tutor, both sought to demonstrate the antiquity of their different peoples by creating geometrically precise maps of Wales and England, respectively, with place-names in Welsh and Anglo-Saxon.207 Early in the following century Sir Walter Ralegh sought, by writing place-names in Greek, to add authenticity to his sketch maps of classical antiquity in the commonplace book he used when preparing his History

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203. This is derived from Bendall, Dictionary, 1:11–17. The conclusions in the following paragraphs are drawn from an analysis of the more detailed information given by Bendall, Dictionary, 1:39–63. And see chapters 57 and 58 in this volume.


205. Cormack, Charting an Empire.

206. Bendall, Dictionary, 1:19 and 29, and see later in this chapter.

of the World. In the same years another Welshman, George Owen of Henllys (ca. 1552–1613), drew a detailed map of his home county of Pembrokeshire to accompany his 1603 Account of Pembrokeshire (fig. 54.7), a study that, under the influence of his acquaintance William Camden’s Britannia, took a critical view of the traditional accounts derived from the writings of Geoffrey of Monmouth and of Giraldus Cambrensis while remaining anxious to emphasize his country’s antiquity and continuing fertility and importance.

Side-by-side with these humanist mapmakers were the mathematicians and instrumentmakers who run like a seam through the period. Thomas Geminus, Edward VI’s tutor (and Burghley’s brother-in-law) Sir John Cheke,

208. BL, Add. MS. 57555.
209. Charles, George Owen, 155–59. The papers of George Owen, with the text of the Description of Pembrokeshire, which was only finally published in 1897, are now in the National Library of Wales in Aberystwyth. Owen also advocated the use of scientific methods in agriculture and was one of the earliest writers to take an interest in geology.
Leonard and Thomas Digges, William Cumingham, Humfrey Cole, his pupil Augustine Ryther, William Bourne, Thomas Harriot, Ralph Agas, Edward Worsop, Thomas Hood, Edward Wright, Emery Molyneux, Charles Whitwell, and above all John Dee were all capable of turning their hands to instrumentmaking or mapmaking\(^\text{210}\) (although no certain examples of, for instance, maps by Thomas Digges now survive). The work of the mathematicians, whether local, colonial, or in the form of world maps, was accomplished, easily bearing comparison with the best work being done in mainland Europe. Edward Wright’s world map of 1599, for instance, was one of the earliest to use Geradurdes Mercator’s projection in his Certaine Errors of Navigation.\(^\text{211}\) These men enjoyed the trust of the leaders of the country, regularly meeting them, as Dee and Walsingham’s diaries show, and dedicating their works to them.\(^\text{212}\)

Yet for all that, and the vehemence of their arguments for the practical benefits that would accrue to the country through the adoption of their ideas, be they for relatively sophisticated surveying methods or instruments or—as urged by Stephen Borough in 1558 and again in 1563 by John Dee—for the creation of an English equivalent of the Casa de la Contratación,\(^\text{213}\) one gains the impression that by and large the theorists were treated with benevolent condescension.\(^\text{214}\) Judging from the contents of the shelves of Hatfield House to this day, their tracts and proposals seem mainly to have been relegated to the library rather than placed for action in the study.\(^\text{215}\)

Burghley received Dee’s constant flow of proposals with a genuine but noncommittal interest, except on the rare occasions when they sat neatly within the context of official policy.\(^\text{216}\) It was a similar story in the 1590s, when Burghley was the recipient of tracts and advice on land surveying from Ralph Agas.\(^\text{217}\) However, the mathematicians were only too happy to oblige on the numerous occasions when they were approached by ministers to undertake surveys or provide maps and plans or written advice on specific issues, in line with Burghley’s dictum that “the practick part of wisdom is the best.”\(^\text{218}\)

In the later 1580s and throughout the 1590s the mathematicians came into their own. There were four principal reasons for the change. In part it was because their patrons included such men as Sir Walter Ralegh; Henry Percy, the “wizard” ninth Earl of Northumberland; and the merchant Sir William Sanderson, who combined sophisticated scientific knowledge and enormous personal wealth with real influence with the queen and her advisers.\(^\text{219}\) It gave the mathematicians the opportunity to demonstrate some of their skills, as did Thomas Harriot, utilizing the talents of the artist John White, in the highly skilled mapping of the first Virginia colony of the early 1580s, and in the next decade Edward Wright and Emery Molyneux through their maps and globes. A second factor was the approach and outbreak of war with Spain, which increased the need for their engineering and navigational skills and for accurate maps and charts of the areas of conflict. To some extent this need loosened the governmental purse strings. Of equal significance was the presence in England from the
late 1570s until the 1590s, when they moved to the Northern Netherlands and particularly Amsterdam, of numerous skilled and intellectually curious engravers and mapmakers from Antwerp; notable among them were Jodocus Hondius, Pieter van den Keere, William Kip, and, more briefly, Theodor de Bry.220 Last, and fortuitously, in view of the immigration of the Flemish engravers, was the opening, as Worms has shown, of the first copper mills in England, which lessened English mapmakers’ and engravers’ dependence on imports and presumably lowered the price of copper and was followed by the appearance of the first rolling presses in England.

There followed, as Worms has also demonstrated, a sudden and sustained increase, admittedly from a rather low base, in the publication of relatively well-produced maps and mapviews. These were often engraved by foreign engravers, such as Hondius, but also by an increasing number of Englishmen (most notably Augustine Ryther and Benjamin Wright) on the basis of work by such cartographers as Robert Lythe, John Norden, and Baptista Boazio.221 Perhaps the most dramatic consequence, apart possibly from the publication of The Mariners Mirror in 1588, whose maps were probably engraved in London by Flemish engravers, was the production by Emery Molyneux in 1591–92 of the first surviving printed globes to be produced in England. Financed by William Sanderson, created on the basis of work by Edward Wright, engraved by Jodocus Hondius, and publicly blessed by the queen herself, these globes, with their 52-cm diameter, were the largest terrestrial and celestial globes to have been created anywhere up to that date, according to Hondius.222 It seemed briefly that England might become a major player on the international cartographic scene.

Yet even in this period maps by Englishmen or foreigners in English service, like Baptista Boazio, illustrating texts by other Englishmen continued to be published abroad. Sometimes, as in the case of Walter Bigges’s account of Francis Drake’s voyage to the West Indies in 1585 (with illustrations after bird’s-eye views by Boazio, published in Leiden in 1588), the reason seems to have been predominantly political: between 1585 and 1588 Elizabeth had refused to further enflame the already strained relations with Philip II by allowing publication in England. In other cases, however, the reason seems to have been partly intellectual and partly political and commercial, as with Theodor de Bry’s publication of Harriot’s Briefe and True Report . . . of Virginia, published in Frankfurt in 1590 and illustrated with John White’s maps and drawings. The publication formed part of de Bry’s America series and the centrality of Frankfurt, where he had recently arrived from England, in a network of commercial routes that covered all of western and central Europe, promised greater sales and thereby more effective propaganda against Philip II, with whom England was now openly at war.223

The later 1590s and the first years of the seventeenth century, as Worms has shown, were to see the gradual disappointment of hopes of England becoming a center point for cartography in Europe. The copper mills closed. As the tide of war in the Netherlands turned in the nascent Dutch Republic’s favor after 1591 and Dutch commerce began to spread around the globe, bringing wealth and self-confidence in its wake, Jodocus Hondius and Benjamin Wright were attracted to Amsterdam, to be followed in 1596–97 by Emery Molyneux. The second editions of his globes were to be published in Amsterdam in 1603.224 Following the peace with Spain in 1604 Cath-

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221. For Norden, whose incomplete series of Speculum Britanniae volumes appeared in this decade, and Smith, whose county maps were also published at the turn of the century, see below. For Lythe, whose mapping formed the source for Hondius’s rare Descriptio, see Jodocus Hondius, Hyberniae novissima descriptio, 1592, intro. J. H. Andrews (Belfast: Linen Hall Library, 1983); for Boazio, whose mapping covered Drake’s and Essex’s voyages as well as Ireland and the south coast of England, see Lynam, “English Maps and Mapmakers,” 75–78; Sir Francis Drake: An Exhibition to Commemorate Francis Drake’s Voyage Around the World, 1577–1580 (London: British Museums Publications for the British Library, 1977), 108–9, and Andrews, Shapes of Ireland, 57–88.


olic Europe offered refuge, with career opportunities, to some of England’s cartographic seedcorn, such as the Earl of Leicester’s illegitimate son Robert Dudley and the engraver Benjamin Wright. Dudley and Wright were eventually to make their names in Italy as the creator of the Arcano del mare and the engraver of Giovanni Antonio Magini’s authoritative maps of Italy, respectively.

**Mapping the Country, 1550–1611**
the modern beginnings to 1573

The desire to create a modern map of England and Wales was one of the earliest cartographic expressions of patriotism. First enunciated in 1524 by Nicolaus Kratzer in a letter to Albrecht Dürer, the initial impetus was scientific rather than antiquarian. With its grid of latitude and longitude and its adoption of a Donis-like projection, the Cottonian map of England, Wales, and Ireland of about 1534–1546, which was probably displayed in one of Henry VIII’s palaces (very possibly Hampton Court, which is named on it),225 was a new Ptolemaic map of the type that Kratzer had wanted to create. It contained more accurate coastlines, particularly for Scotland, than were to be found on old Ptolemaic maps, had a text panel giving detailed measurements for the islands, and contained many place-names that were not to be found on the Gough map, on which it was otherwise based.226

Between 1535 and 1543 the antiquary John Leland toured England and Wales in the service of Henry VIII, and his written Itineraries have since justifiably earned him the title of “father of English topography.”227 In his tract The New Year’s Gift (1546), he promised Henry VIII that within a year he would “have this yowr worlde... sette forthe yn a quadrate table of silver,” although he qualified this by adding that he would not himself be doing the drawing (his own surviving cartographic work is confined to sketch maps)228 but that he intended to put “such a description... of your realume yn writing, that it shaul be no mastery after for the graver or painter to make a like by a perfecte exemple.”229 The proposal came to nothing, as shortly afterward Leland descended into insanity. His copious papers, however, had come into the possession of William Cecil by 1557 and were made available to such scholars as the Gelderland-born Reyner Wolfe, the queen’s printer. Wolfe had an interest in mapmaking that went back to at least the late 1530s and was engaged in drawing or commissioning maps of the English “provinces” at the time of his death in 1573 (fig. 54.8).230

The same months of 1546 that saw Leland holding out the prospect of an accurate map of Britain also saw the publication in Rome of George Lily’s one-sheet map of Great Britain and Ireland. The first “modern” printed map of the British Isles was a product of much the same spirit of antiquarianism and patriotism.231 Lily was a member of the household of Reginald, Cardinal Pole, the humanist scholar and cousin of Henry VIII who had taken refuge in Rome and become the leading opponent of Henry’s innovations in religion after 1534. Lily had belonged to Thomas More’s circle, and his father William, the first high master of St. Paul’s School in London and a leading humanist and Latin grammarian, had been one of More’s closest friends.232 The map was intended to accompany Paolo Giovio’s Descriptio Britanniae, Scotiae, Hiberniae et Orchadum (Rome, 1548), to which Lily himself was to add an epilogue containing biographies of eminent Englishmen. The map was influential, providing the model, for instance, for the form of the British Isles in the Terza Loggia in the Vatican,233 but it was very much...
The map of an exile containing information and coastal shapes for England that were outdated by the 1540s.²³⁴

The map was reprinted in London, using the original plate, by Thomas Geminus in 1555, following Lily’s return to London in the previous year in the suite of Cardinal Pole, now his cousin Queen Mary’s Archbishop of Canterbury.²³⁵ The weaknesses of the map were, however, almost certainly realized by Lily and his patrons as soon as they saw the fruits of the intense cartographic activity that had taken place during the years of their absence from England.²³⁶ The inventories taken of Henry VIII’s possessions in 1542, 1547, and 1549 mention several maps of England, and it is likely that they included some with improved coastal outlines, particularly for the Bay of Cardigan and Morecambe Bay areas.²³⁷ Following Henry’s

²³⁴. The outlines for Scotland, by contrast, were more modern. It has been suggested that these were derived from Scottish clergymen and laymen, like John Elder, who were in Rome in the late 1530s (Tyacke and Huddy, Saxton and Tudor Map-Making, 7–8).

²³⁵. Shirley, Early Printed Maps of the British Isles, 28, and Karrow, Mapmakers of the Sixteenth Century, 253. The sole known example is now in the BNF (Rés. Ge C 5177).

²³⁶. The enormous amount of mapping that took place can be judged from the fact that despite the probably considerable rate of loss, the decade 1537–47 accounts for just over one-third or about 100 of the 250 maps comprising the single largest surviving collection of Tudor official or governmental manuscript maps, the Augustus series of the manuscript collection of Sir Robert Cotton, now in the BL, which ranges in date from about 1450 to 1630.

²³⁷. For the inventories, see Hayward, 1542 Inventory, and Starkey, Inventory. See also Brewer et al., Letters and Papers . . . of Henry VIII, vol. 14, pt. 1, 151–53, for commissions of early 1539 for the mapping of the coasts of North and South Wales. Special attention was clearly paid to the landing place in 1485 of Henry Tudor, Henry VIII’s father, at Milford Haven near Cardigan Bay on a now-lost map that probably formed part of the “survey” of the area that was commissioned in February 1539 by Thomas Cromwell from Lord Ferrers. Milford Haven was subsequently listed in Cromwell’s “Remembrances” of March–April 1539 as one of the places “where fortification is to be made” (Hale, “Defence of the Realm,” 370, and Biddle, Colvin, and Summer-
death the contents of his private library suffered from extensive pilfering by courtiers and ministers. John Dudley, Earl of Warwick and later Duke of Northumberland and the Earl of Arundel, came into possession of relatively accurate plans of Scottish ports and fortresses and probably also of other maps of which they commissioned copies. It is possible that the detailed map of England that Somerset’s brother, Sir Thomas Seymour, was reported to have used in 1549 to show Sir Thomas Sharington “how strong he was, how many men he was able to make, how far his lands stretched, and how they lay between his houses of Bromham and Holt [in Wiltshire] ... what shires and places were for him ... where he was the judge of his friends, and where lay the lands of the protector and Lord Warwick,” may also have come from Henry’s library. The Henrican maps and charts were certainly available to Humphrey Lhuyd, who was employed in the Earl of Arundel’s household from 1553, and to Laurence Nowell. It can be assumed that these materials were used by them, supplemented when necessary by their own researches when drawing up their improved maps of the British Isles in the early 1560s.

There can be little doubt that dissatisfaction with the Lily map led to governmental support for the renewed, systematic mapping of England and Wales under Philip and Mary. In 1561 Elizabeth I requested the dean and chapter of Durham Cathedral to allow one of its prebendaries, John Rudd, two years’ paid leave to “travayle by his own sight to view and considere divers parts of our . . . Realme” so as to perfect a “platt of this our Realme” that he had already for some time been at “some payn in making.” Rudd had been drawing maps since at least 1534, when he sent a new Ptolemaic map of the Holy Land to Roland Lee, bishop-elect of Chester, as a means securing his release from solitary confinement by currying favor with one of Thomas Cromwell’s associates. Since 1540, he had been a royal chaplain (clerk of the closet) to Henry VIII and as such, he probably had access to the royal library. It seems likely, although documentary proof has remained elusive, that the mapping Rudd did prior to 1561 had a royal connection of some sort. It could be that the Yorkshire living that he received late in 1554 and in 1557 and 1558 after conforming to Catholicism under Philip and Mary may have been rewards connected with this work.

Close examination of the content of Mercator’s multisheet wall map of the British Isles published in Antwerp in 1564 provides further evidence of official encouragement of mapping of England, Wales, and Ireland in the mid-1550s. The omission of the bishoprics, such as Gloucester, Oxford, and Westminster, created by Henry VIII from the spoils of the monasteries; the inclusion of even insignificant palaces, such as Copped Hall in Essex, that were of personal significance to Queen Mary; and evidence of influence, particularly in the idiosyncratic mapping of Scotland, of the work and interests of Philip II’s chief British propagandist John Elder make it difficult to avoid the conclusion that Mercator’s work is largely derived from a survey undertaken by Elder and Rudd. This survey was undertaken at the royal command, after 1554, with particular royal sensibilities in mind and with full access to the latest official mapping. The survey, however, was left incomplete, perhaps because Elder took his material with him on his departure for France in 1556, and his colleague or replacement, John Rudd, was not able to complete the work. This would help explain the absence from the Mercator map of the sizeable townships of Philipstown and Maryborough in Ireland, created in 1556.

From 1558 the new government, led by William Cecil, made a serious effort—as far as its resources allowed—to complete this work. However, the emphasis had altered. Henceforth the national survey was not to be encompassed in a single map. It would consist of a general map of the queen’s realms, including Ireland, accompanied by more detailed maps of the individual provinces, although for some time Cecil (created Lord Burghley in 1572) seems to have been undecided as to whether these would be the counties or other, larger units of government. As we have seen, Reynner Wolfe was engaged in some form of English provincial mapping at the time of his death in 1573, and Laurence Nowell, in his letter to Cecil of June 1563, also ...
mentioned that he intended to create maps of the English provinces. It is clear from Nowell’s letter that Cecil’s wish for a new map of the queen’s realms was well known and that there were already several mapmakers vying for Cecil’s favor. Such was surely the background to the little map, or “general description,” of England, Wales, and Ireland that Nowell must have presented to Cecil shortly afterward. This map seems, despite some recently expressed doubts on the subject by Klein, to contain portraits of an impatient Cecil sitting on an hourglass and, possibly, of Nowell, of whom no firmly attributable portrait exists.

It is not known why Cecil did not avail himself of Nowell’s offer. The answer may lie partly in his realization that the map did not contain anything that was really new, although it may seem radically novel to later viewers because of the paucity of other surviving maps of that time. He may also have anticipated problems with Nowell’s academic and rather unstable temperament that was to lead him to leave England for what seems to have been a rather reckless, ill-directed tour of Europe in 1567. Another problem, however, may have been one of finance. By the 1550s the crown was encountering increasing financial problems and was no longer in a position to subsidize mapmaking on the scale that had been possible for Henry VIII after 1535. After 1561 Rudd had obtained an indirect subsidy from Durham Cathedral, and it is possible that earlier on he and Elder had also received private financial support, perhaps—given Elder’s admiration for Cardinal Pole, Rudd’s clerical status, and Lily’s position in Cardinal Pole’s household—from the revenues of the archbishopric of Canterbury. Nowell would have had no such support unless from the Court of Ward, for whom, as tutor to the young Earl of Oxford, he was indirectly working.

**SAXTON’S SURVEY, 1573–1583**

_The mapping of England and Wales between 1573 and 1578, the atlas of 1579, and the wall map of 1583 have bestowed almost mythical status in the English-speaking world on Christopher Saxton as “the father of English cartography.” Wonder has been expressed at his ability to survey such a vast area in an impeccably scientific manner in so short a time. The atlas has been judged exceptional in terms of the development of English book production and publishing. It has been acclaimed as the first English county atlas and indeed as “the first national atlas to be produced in any country.”

Although Saxton’s achievement was epoch-making in an English context and the place of the atlas in the history of the book in England was exceptional, the reality behind his work and its context in the Europe of his time belied the heroic assumptions implicit in the traditional image. Far from being the first initiative of its kind, it had antecedents stretching back, as we have seen, for decades. Far from being dependent purely on Saxton’s surveying skills, his maps were almost certainly compiled in large part from existing manuscript maps and, probably, written surveys. Far from the atlas being the fruit of a calculated strategy elaborated between Lord Burghley and Thomas Seckford in the early 1570s, the course of Saxton’s work was marked at almost every stage by improvisation and inconsistency as to the way in which the information was presented. The atlas cannot be considered the earliest printed national survey, an honor that should probably go, depending on the criteria employed, to Jacob van Deventer’s wall maps of the northern provinces of the Nether-
lands (1536–47), Wolfgang Laziuss's book-sized surveys of the Austrian duchies (1561) or, if publication at one time and in a uniform format are the hallmarks, to Philipp Apian's printed survey of the duchy of Bavaria at a scale of 1:144,000 (1568).²⁵⁴ Nor was Saxton alone in undertaking such a project in the 1570s. Several of Elizabeth I's fellow rulers commissioned relatively detailed manuscript surveys of their territories. While Saxton was working on his maps, Pedro de Esquivel and his successors were mapping Spain and Marco Antonio Pasi was surveying the territories of the Este family of Ferrara.²⁵⁵

It is even arguable that the Saxton atlas should not be termed a “county atlas” at all. The continuing uncertainty as to what constituted a “provincial” map in an English context is still reflected in Saxton's maps.²⁵⁶ It was presumably on the insistence of Burghley or in agreement with him, that the boundaries of counties, the most important units for the administration of justice, taxation, and the organization of defense, were indeed depicted on all the maps.²⁵⁷ Furthermore, no map showed less than a single county. However, only twenty-five—less than half of the fifty-two English and Welsh counties—received individual treatment, the rest being bunched together in seemingly arbitrary groupings of three or more that did not correspond to any identifiable legal or administrative entities. Six of the maps, spread throughout the period when Saxton was at work, also show the internal divisions of the counties, whereas a few of the earlier maps list the number of parishes and market towns in each county.²⁵⁸ Most of the maps, however, lack this type of information, although it was ultimately considered important enough to be included in tables that were produced for editions of the atlas dating from 1590 and later. It certainly seems that Saxton, Seckford, and Burghley’s objective was the creation of a relatively detailed national survey in whatever manner (although always showing county boundaries and never less than a single county), in the words of the privilege of 22 July 1577, best served the “pleasure and commoditie” of the queen and her subjects.

If there was little consistency in the presentation of information on the individual regional maps, their standardized physical form was set from the start. They all occupied a single uniformly sized copperplate, with the sole exception of the outsized county of Yorkshire, which had two plates devoted to it. Although the maps seem to have been available singly, the intention appears always to have been to create an atlas. In this respect it is clear that Ortelius’s Theatrum orbis terrarum, first published in 1570, was the model, as was evident to contemporaries. In his Description of the Islands of Bretayne published in the first volume of Raphael Holinshed’s Chronicles in 1577, William Harrison wrote that “eare long,” Saxton’s work would be “sett foorth in severall shyres after the manner that Ortelius hath dealt wyth other countries of the mayne.”²⁵⁹

Sustenance and Structure: The Mapping of England and Wales, 1573–1579

It is commonly assumed that Saxton’s patron throughout his work on the mapping of England and Wales was Thomas Seckford.²⁶⁰ In fact the financing of the national survey seems to have been uncertain for a considerable time after Saxton received his commission, probably on 28 July 1573.²⁶¹ Seckford’s arms do indeed appear on all of the maps but the earliest, which is dated 1574, could, under the Julian calendar that was then operative, have been engraved as late as March 1575, or twenty months after Saxton had started work. It was presumably John Rudd who introduced Saxton to Burghley—perhaps following the death of Reiner Wolfe, whose projected set of provincial maps may have been the preferred option. It seems as though Saxton initially met the expenses from his own pocket, although Burghley presumably promised timely grants of land and office from the crown to offset some of his costs. The wording of the letters patent concerning lands in Suffolk on Saxton in March 1574, as well as the grant of the reversion to the officer of bailiff, receiver, and collector of the income from the lands formerly owned by the priory of St. John in London and Middlesex in January 1575, both make it plain that Saxton is personally being rewarded for his services. The Suf-

²⁵⁴. See chapters 42–45 in this volume on German and Flemish/Dutch mapping. Given Sir Henry Sidney’s political significance and his role as a cartographic innovator (see pp. 1613–14), it should be noted in this connection that a copy of Apian’s survey is included in his library catalog (“11r04 Appianæ Tabulæ Bauariæ”). I am most grateful to Dr. Germaine Warkentin for bringing this reference to my attention.


²⁵⁶. The idea of an atlas of county maps . . . was evidently not fully evolved in Saxton’s maps” (Tyacke and Huddy, Saxton and Tudor Map-Making, 32).

²⁵⁷. Morgan, “Cartographic Image,” 137–38 and 143–44, although he attributes this idea to Saxton.

²⁵⁸. Tyacke and Huddy, Saxton and Tudor Map-Making, 30.

²⁵⁹. Morgan, Saxton’s Survey, 10 and 16. See also Morgan, “Cartographic Image,” 143.

²⁶⁰. “One thing is incontrovertible—he was chosen by Thomas Seckford . . . to . . . map the counties of England” (Evans and Lawrence, Christopher Saxton, 7); and for the traditional view, see Morgan, “Cartographic Image,” 136–38 and 140–41. Tyacke and Huddy, Saxton and Tudor Map-Making, 24, however, are less dogmatic about this.

²⁶¹. Evans and Lawrence, Christopher Saxton, 7, and Skelton, Saxton’s Survey, 8 and 16.
folk grant actually mentions the “grand charges and expenses” incurred by Saxton in the course of his surveying work.262 There is no mention of Seckford. Indeed, in the sparse surviving contemporary documentation relating to Saxton’s mapping of England and Wales, Thomas Seckford is first mentioned only in March 1576.263 From that time, however, if Saxton is mentioned, it is only as Seckford’s servant, with Seckford being praised for bearing “greate coste expenses and charges” in financing Saxton’s work.264 Indeed Saxton’s name was only added to the maps from the time of the grant of his copyright privilege in 1577.265 Once the atlas had been published, in 1579, Saxton at last received further personal reward with the grant of an augmentation of his family’s arms in recognition of the “everlastinge prayse” due to him for his “perfect geographicall description of the severall shires and countis within this realme.”266

The maps themselves may suggest the course of events. Whereas Saxton’s earliest map,267 of the rich, coastal county of Norfolk occasionally visited by the queen,268 is the subject of individual treatment at the scale of about 1:235,000 (fig. 54.9),269 the next map showed Oxfordshire.

262. Evans and Lawrence, Christopher Saxton, 67 (quotation), 147 and 163, and Skelton, Saxton’s Survey, 16. For a general discussion of the value of such grants as a source of income, see Kitchen, “John Nor- den,” 56.

263. Evans and Lawrence, Christopher Saxton, 6 and 163.

264. The quotation is taken from Saxton’s licence of 20 July 1577 (Evans and Lawrence, Christopher Saxton, 147–48), and see Tyacke and Huddy, Saxton and Tudor Map-Making, 24–25 and 33; Evans and Lawrence, Christopher Saxton, 16–17; and Skelton, Saxton’s Survey, 16.

265. Skelton, County Atlases, 14; Evans and Lawrence, Christopher Saxton, 14 and 147–48; and Tyacke and Huddy, Saxton and Tudor Map-Making, 35.

266. Evans and Lawrence, Christopher Saxton, 164.

267. For the dating and progress of Saxton’s maps, see Evans and Lawrence, Christopher Saxton, 9–19, though I differ with them over the position in the sequence of Suffolk and Kent.

268. Howard Montagu Colvin, “Elizabeth’s Progresses,” paper to Court History Society summarized (but without his emphasis on Norfolk) in Court Historian 5 (May 2000), 90, and see Delano-Smith and Kain, English Maps, 144, for the reproduction of an official manuscript route map for Elizabeth’s Progress into Norfolk in 1578 (TNA, SP 12/125, fol. 98).

269. The scales, rounded up or down to take account of their lack of consistency, are taken from Evans and Lawrence, Christopher Saxton, 38–39.
Buckinghamshire, and Berkshire at a scale of 1:263,000. Although the map of Kent, Surrey, Sussex, and Middlesex (including London) is dated 1575 (plate 66), it is likely that it was engraved only a few months after the second map. Saxton probably did the surveying and research for it in the spring and early summer of 1574. At a scale of 1:314,000, Saxton probably had to omit information, and the impression of overcrowding is not mitigated by the fine decoration.270 This scale is all the more surprising, given the strategic importance and vulnerability of the region depicted, which is referred to in the map’s decoration and which, in light of the well-known preoccupations of repeated Tudor governments, would have justified more space.271 Saxton may have been defeated by the costs of engraving and production. The failure to have the map of Norfolk engraved in 1573—that is, before April 1574—would certainly suggest that he hesitated before incurring these costs.272

Burghley’s primary concern with maps was always with the amount of relevant information they contained rather than their geometrical precision. As late as 1591, for instance, he indicated to Sir John Norris, the commander of the English forces in France, that he was perfectly happy to receive “some particular description” of Brittany “and specially of the places upon the sea coasts and of all other the towns where you have been and lodged or marched. . . . though it be not in perfect measure.”273 Although the difference in scale between Saxton’s first three maps was not, mathematically speaking, very significant, Burghley could well have felt that he was faced, if not with no maps at all, then with a succession of ever more crowded and less informative maps at ever smaller scales as Saxton sought to economize, and that action needed to be taken. In the autumn of 1574, Burghley probably called on Thomas Seckford as a safe pair of hands. The two men had known each other since their student days at Grey’s Inn in the early 1540s, and in the course of the 1560s Seckford had won “credytt and trust” as an industrious and reliable agent of the Privy Council.274

The grant of lands in January 1575, when the first maps were probably being engraved and proofs being sent to Burghley as they came off the press,275 could then have represented a settling of accounts with Saxton before the main financial burden was transferred to Seckford. The awkward designs of the proof sheets of the first two maps of Norfolk and of Oxfordshire, Buckinghamshire, and Berkshire may also reflect these changes. Both plates had space set aside for only one set of arms, perhaps because Saxton had assumed, when commissioning the engravers, that only one patron, the crown, needed to be so honored. The unexpected involvement of a new paymaster, Seckford, led to the hurried substitution of his arms, but without a motto under them, in the proof state.276 It was only in the final state that the royal arms were also, somewhat awkwardly, inserted, in recognition of the crown’s continuing involvement. The spacious map of Seckford’s home county of Suffolk, dated 1575 (but probably being surveyed late in 1574, when the escape package was being worked out), pays fulsome tribute to Seckford’s intervention but also due respect to the queen, whose provision of passes to Saxton was every bit as essential as Seckford’s money.277 This map is at the same scale and in similar detail to the map of Norfolk but with ample space for the royal arms.

It may have been only at this time of financial restructuring and general reappraisal that a final decision was reached on the thorny question of the way in which England and Wales were to be divided up. Ideally each map should cover approximately the same area, but this would be impossible if each sheet was devoted to a single county because of the enormous difference in size between them. The decisive factor when deciding on the standard area

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270. Saxton probably consulted the now-lost “Carde of Kent” referred to in the first edition of William Lambarde’s Perambulation of Kent, written in 1570, which seems to have contained more place-names than Saxton’s map (Tyacke and Huddy, Saxton and Tudor Map-Making, 29–30). The elaborate decoration, which is unparalleled on Saxton’s maps, seems almost designed to draw attention away from the selectivity of the cartographic content. Skelton’s defense of the map’s coverage, that it “covered the vulnerable approaches to London” (Saxton’s Survey, 10), lacks conviction, because a general map of England or Great Britain, of which there were already numerous examples (not least Mercator’s map of 1564 and Ortelius’s reduction from it) would have done this better.

271. The region was, significantly, the first to be mapped by the infant Ordnance Survey after 1791. The allegory on the map shows Mars, representing France or Spain, ravishing Venus or Elizabeth I who is holding an olive branch.

272. The relatively inaccurate depiction of the coastline on the proof state, which is copied from the 1564 Mercator map, suggests that Saxton may initially have been trying to save on surveying costs too. There is an improved outline on the later state.


275. The maps were eventually bound up into an atlas with manuscript maps for use by Burghley. The atlas later passed into royal hands and is now Royal MS 18.D.III in the BL (see Evans and Lawrence, Christopher Saxton, 15–19 [table 1] for an analysis of the Saxton maps in the atlas, and Skelton and Summerson, Description of Maps, passim, for discussions of the manuscript maps in the same volume).


277. Evans and Lawrence, Christopher Saxton, 12, although my interpretation is slightly at variance to theirs. For the passes, see Tyacke and Huddy, Saxton and Tudor Map-Making, 24 and 32; Evans and Lawrence, Christopher Saxton, 11 and 147; and Skelton, Saxton’s Survey, 16.
to be covered by each plate is likely to have been the need to show the country’s coastlines as accurately as possible for the purposes of defense. By mapping the coastlines on a county-by-county basis, except where a single county was evidently too small to stand alone, the best possible definition would be achieved, because no unit smaller than a county could form the subject of a separate map.

It followed that this scale—of the average-sized coastal county engraved on an average-sized copperplate (except for Yorkshire, whose size made it a special case)—would set the standard for the maps of the rest of the country, even where this choice involved depicting several counties on the same map.278 Unfortunately in the likely absence of any existing maps of England and Wales showing county boundaries in detail, Burghley and Saxton were probably unaware of the precise relationships in size among the individual counties. They would not have known until it was too late that they were condemning the larger, strategically important coastal counties like Devon, Cornwall, Northumberland, and Lancashire to depiction at a somewhat smaller scale than other, less important, but smaller counties. Conversely some of the groups of smaller inland counties were shown at a larger scale than some of the larger single coastal counties. Nevertheless, even if some variability in scale is evident on the maps published after 1574, as Evans and Lawrence noted, it is not great.279

This rationale would explain the improved quality of the coastal depictions, compared to the maps of Saxon’s predecessors, which has been commented on by earlier writers,280 and why fourteen or (depending on the status of Gloucestershire) fifteen out a total of seventeen or eighteen of the English coastal counties have a map to themselves. By contrast fifteen out of the total of twenty-two or twenty-three inland counties are depicted in groups. Perhaps inevitably this difference in representation led to complaints that the inhabitants of counties large enough to be the subject of individual maps were being treated unfairly by the authorities. Writing in 1594 George Owen of Henllys grumbled that Saxton’s depiction of his home county of Pembroke alone and at a slightly larger scale than its neighbors, which had been grouped together on one map, gave administrators at court an inaccurate impression of Pembroke’s level of population. This distortion led to injustice in, for instance, the levying of troops for foreign service, with Carmarthen being let off with only one hundred men, whereas Pembroke had to raise 150.281

Once funding had been secured, Saxton moved on to cover all the remaining southern coastal counties from Hampshire to Cornwall, before turning to Essex, the remaining eastern coastal county most at risk of invasion by sea. He then seems to have mapped the eastern midland counties, including such coastal counties as Lincoln, before turning to Durham and the counties in the extreme north that bordered Scotland, where national security was also a major government concern.282 Only then did Saxton deal with the remaining, more secure, mainly inland English counties before finishing, in 1576–78, with the Welsh counties.283 Most of the latter are bunched together but not in groupings that would have been of some administrative utility, such as the circuits of the Welsh Great Court of Session, established in 1543. Although the scale of the maps is reasonably large, even when they are in groups, away from the coastlines the place-names are relatively meager. Part of the reason doubtless lies with the nature of the terrain, the lack of population, and (almost certainly) of earlier maps of the interior, which Saxton could have consulted in London, but the pressure of time may well be another factor. Spending anything more than the bare minimum in mapping Wales would have reduced the time that Saxton would have had to reap the profits from his labors under the terms of the ten-year printing privilege that was granted to him on 22 July 1577. There may well also have been pressure on Saxton from Seckford and Burghley to complete the survey, even at the cost of not ironing out inconsistencies, such as the differing lines of county boundaries and the selection of settlements, shown for the same areas on different maps.284

The 1579 and 1583 Maps of England and Wales
The completion of the national survey in 1578 was followed by the production of a map of England and Wales
for the atlas published in 1579. Largely based on the county maps, which had to be reduced to a common scale, in its original state, the map of England and Wales lacked a grid of longitude and latitude.

Four years later Saxton’s twenty-sheet wall map of England and Wales was published.285 The engraving has been attributed on stylistic grounds to Augustine Ryther. From the first the map had a detailed grid of latitude and longitude, perhaps reflecting a grim acceptance that such information was already widely available and that its absence was unlikely to prove an obstacle to an invader. It reproduced between 80 and 90 percent of the place-names on the county maps and in this regard was not to be surpassed by later wall maps until the eighteenth century. The wall map marked a further advance in the depiction of coastlines, particularly in northeast England and south Wales. This advance was probably principally attributable to feedback from purchasers of the atlas or individual maps living in these regions. The Cornish peninsula continued, however, to be misaligned. The particular fragility of wall maps means that no conclusions about the size of the original print-run can be drawn from the survival of only two recorded examples in the first state; one, in its assembled form, surrounded by the arms of leading noblemen, and dating from the late sixteenth-century and the other, dating from the mid-seventeenth century and in sheets.286

As well as being a status symbol, the map’s coverage of the queen’s mainland dominions at a common scale doubtless facilitated regional defense planning in the years of crisis that led up to the Armada and the outbreak of open hostilities with Spain. For this reason it was much copied. In this way it exercised a continuing influence over the mapping of Britain, particularly through the regional maps of England and Wales in Mercator’s Atlas and the so-called Quartermaster’s map, originally published in 1644, which was still being advertised in 1824.287

Mapping Techniques and Sources

It was suggested as long ago as the 1930s that Saxton might have employed a form of triangulation advocated by Gemma Frisius for his survey and, more recently, that he used the beacon system, and the specialist geographical knowledge of those charged with maintaining them, as the basis for his triangulation.288 Such is certainly the implication of the wording of the letter from the Privy Council to the justices of the peace and other Welsh municipal officers of 10 July 1576.289

It seems likely, however, that the bulk of Saxton’s time, certainly in the winters, was spent verifying, correcting, and integrating information that was already available to him in written and cartographic form.290 This information would have enabled him to cover much land in a relatively short time. In addition to what must still have been an im-

285. Skelton, Saxton’s Survey, 10–12, and Tyacke and Huddy, Saxton and Tudor Map-Making, 39–43. What seems to be a trial copper-plate for part of northern England is owned by the BL (Maps 177.j.2 with a recent impression, BL Maps CC.2.e.4). Its precise relationship to the published version has yet to be thoroughly analyzed, but its size suggests that the complete map would have had twelve rather than twenty sheets.


289. Tyacke and Huddy, Saxton and Tudor Map-Making, 32 and 62; Skelton, Saxton’s Survey, 16; and Evans and Lawrence, Christopher Saxton, 147.

290. Evans and Lawrence, Christopher Saxton, 40–41 and 44, however, concluded that “the county maps, almost certainly, derive to a considerable extent from field observations, though existing source information must have been consulted up to a point.” Lynam felt that “it may be regarded as a certainty that [Saxton] had earlier maps . . . to assist him” (“Atlas of England and Wales,” 82).


292. Tyacke and Huddy, Saxton and Tudor Map-Making, 28–29. The map of bishopric of Durham (Royal MS. 18.D.III, fols. 69v–70), has been attributed to John Rudd, and the suggestion has even been made on palaeographical grounds that it was drafted by Saxton himself during his period as Rudd’s “servant” (Marcombe, “Forgotten Tudor Mapmaker?,” 36).

293. Skelton, Saxton’s Survey, 10–11, and North, “Map of Wales,” 63–64.

294. Lynam (“Atlas of England and Wales,” 82) felt that Saxton “must often have consulted Leland’s ‘Itinerary,’” although Manley...
been less mapping, and that of a more piecemeal variety, in the government’s hands. Sometimes Seckford’s personal knowledge and connections may also have played a role. Thus, by way of example, Saxton’s particularly detailed map of Shropshire at a scale of 1:203,000 may owe much to Leland’s thorough and systematic descriptions of the Welsh Marches and to Saxton’s own surveying, but it may be significant that Seckford owned a house in Ludlow. In terms of conventional signs, Saxton seems to have been influenced by those employed by Philipp Apian in the *Chorographia Bavariea* of 1568.295

**Engraving**

The utter simplicity of the manuscript local maps that Saxton was to produce from 1583296 suggests that the maps he prepared for engraving were devoid of decoration. The choice of the arms and mottoes on the printed maps were presumably stipulated by Seckford, in consultation with Burghley and possibly the queen herself. She is said to have taken exception to the unflattering depiction of her robes on the first state of the frontispiece to the atlas, leading to their more naturalistic portrayal on the second state.297 Judging from the widely differing appearance of the arms and their decorative surrounds on the individual maps, the detailed design must have been left to the individual engravers, who made much use of printed pattern books for the cartouches. The engravers were mainly émigrés from Flanders or northwest Germany, such as Remigius Hogenberg (the brother of Frans Hogenberg, who was closely involved in these years with the *Civitates orbis terrarum* project), Jan Rutlinger, Cornelis de Hoooge, and Lenaert Terwoort—not surprisingly, the maps stylistically resemble those being produced elsewhere in northern Europe.298 The maps were almost certainly printed in England.299 Among the foreign engravers there were three Englishmen: Augustine Ryther, who was responsible for the map of England and four county maps (and who may have exercised some sort of an editorial role after 1576), Nicholas Reynolds (probably Ortelius’s correspondent, who had engraved the Jenkinson/Adams wall map of Muscovy in 1562), and Francis Scatter, the last two responsible for one map each.300 Thus Saxton’s atlas demonstrates the extent to which, in cartography as in so many other cultural fields, Elizabethan England had firmly become part of the European cultural mainstream.

**Purpose**

It is clear that for all the uncertainties and extemporizing that accompanied its creation, Saxton’s atlas was always intended to be primarily an instrument of national defense. This goal can be seen not only in the improved accuracy of coastal depiction but also in the indication of the whereabouts of bridges and parks, whose water, deer, and grass were essential for the sustenance of musters and their horses.301

Another major role envisaged for the maps was as an aid to administration, although this aspect was not as fully developed as that of defense. Spasmodic attempts were made on some of the maps to enhance their value as aids to government by showing internal divisions, enumerating the number of parishes and market towns and, more consistently, by showing the parks and indicating noble houses, but without naming the owners. All of this information would have assisted administrators in assessing taxes, raising musters, and elucidating local problems. From the moment that he began acquiring copies of Saxton’s proof maps in 1574/75, Lord Burghley annotated them extensively to emphasize vulnerability to invasion and the locations of gentry families that could serve as justices of the peace.302

("Saxton’s Survey of Northern England," 308–16) had earlier concluded on the basis of content that at least as far as the northern maps were concerned, it was unlikely that Saxton had utilized Leland’s papers. They would have been readily available and were consulted by John Stow(e), William Harrison, and William Camden (see Smith in Leland, *Itinerary*, 1:xvii–xix). Saxton might also have had access to the now-lost mapping of the Welsh Marches commissioned by Sir Henry Sidney (see Barber, “England II,” 67–68, and Skelton, *Saxton’s Survey*, 24 n. 48).


At the same time the atlas was also clearly intended to serve a wider educational purpose. According to Henry Peacham, writing in 1622, England’s geography had always been one of Burghley’s concerns, and “if anyone came to the Lords of the Counsell for a licence to trauaile, he would first examine him of England, [and] if he found him ignorant, would bid him stay at home and know his own country first.” The 1577 privilege explicitly stated that Saxton’s maps would be “tреве and pleasant... and beneficall.” George Owen of Henlys provided evidence that this final objective was achieved when he wrote that the maps were “daily perused by [all noble men and gentlemen] for their better instruction of the estate of this realm touching the quantity, situation, forms and special places of note of all the shires of this realm.”

Saxton’s atlas was equally important as a means of reinforcing a patriotic pride that was explicitly linked to the person of the queen, by way of the frontispiece, probably engraved by Remigius Hogenberg, showing her surrounded by allegories of the geographical sciences and such virtues as Peace and Justice. The union of queen and country was symbolized above all through the royal arms that adorned the final state of every map. Although Helgerson has argued that the relative insignificance of the royal arms on Saxton’s maps compared to the size of the mapped area gave users an impression that the land was more important than the monarch, thereby reflecting the divisions that led to the Civil War, there can be little doubt that at the time the imagery was intended to associate the queen with all parts of her realm. The other imagery, subordinating Seckford’s arms to those of the queen and Saxton’s name to both, clearly reflected and endorsed a conservative hierarchical image of Tudor society, at variance with the reality of social fluidity, as embodied in the numerous ambitious “new” families who successfully clawed their way upward. The wall map of 1583, with its enormous royal coat of arms and potted history of England since Roman times, was also intended to evoke patriotic loyalty to the queen at a time of crisis. It seems to have been used for precisely this purpose when displayed by her in the Privy Gallery in Whitehall or by Lord Burghley at his palace at Theobalds, near London.

Publication and Intended Readership

While the darkening international atmosphere of the late 1570s and early 1580s put a premium on the production of reliable maps for government, it must also have put a question mark over the advisability of publishing the atlas at all. This would help to explain the confusing and patchy evidence for the publication before the 1590s. Of the surviving atlases, those produced up to at least 1581 seem to have been rather akin to atlases factice: not formally published and assembled on demand. They have no standard collation, and several exclude the frontispiece and include proof as well as early, unrevised states of the county maps.

A letter of late 1585, well within the ten-year validity of Saxton’s privilege of 1577, suggests that an attempt at publication was made but that it provoked a response that may have inhibited further large-scale printing of the atlas. The letter, dated December 1585 and probably sent by Elizabeth’s envoy in Paris, Sir Edward Stafford, to Sir Francis Walsingham, mentions that “There is a booke of mappes putt fourthe in coulleur, conteyninge everye partycular province and shyre by ytsel, of v£ pryce (as is sayd). Here is great care made to have yt over and many meanes and plotts layd to get yt,” adding that the English Catholic exiles wanted a copy “to knowe by that in what parte of the shyres every Papiste dothe dwell that is hable to gyve them ayde yf yt come to an invasion.” Philip II himself eventually acquired a copy of the atlas.

It could therefore be that the print run and sales of the atlas were initially intended to be restricted on grounds of national security. This was not unprecedented. The print run of Deventer’s maps of the provinces of the Netherlands
had been restricted for these reasons. The prices of the single maps and of the atlases would, as a result, have been quite high: sufficient to ensure that they were acquired predominantly by the wealthy landowners on whom Burghley depended for the administration of the country and for whom there would not have been sufficient maps, had Saxton’s work—like that of his continental contemporary Pedro de Esquivel in Spain—remained in manuscript and been copied on an ad hoc basis.

The rarity of any mention of Saxton’s atlas in surviving published private and official correspondence and papers between 1580 and 1590 would support this hypothesis. The very fact that the authorities nevertheless allowed the atlas to be published in some form could be seen as a reflection of the diffused power structure but also as a tribute to the essential unity and stability of Elizabethan England in comparison with most other European countries.

After the outbreak of war with Spain, Lord Burghley and his colleagues probably felt that the advantages of circulating the maps and the atlas, with their patriotic messages, were greater than the risks of the leakage of sensitive information to England’s enemies (which had probably already happened anyway). Most surviving early copies of the atlas seem to date, from the evidence of the introductory text pages, to 1590 or later. It seems likely that following the expiry of Saxton’s privilege they appeared in increased numbers and at a lower price. They were probably printed and published by Augustine Ryther and are sometimes accompanied, almost as a pledge of ultimate victory in the war with Spain, by Petruccio Ubaldini’s account of the defeat of the Spanish Armada, illustrated by maps engraved by Ryther after originals by Robert Adams.

**AFTER SAXTON, 1576–1611**

**Surveys of Single Counties**

It is not surprising that contemporaries, including Burghley, while admiring Saxton’s work, regarded it as being unfinished. As we have seen, the southeast of England was underdepicted and most maps did not meet the official requirements as outlined a few years later by Robert Beale, a clerk to the Privy Council and secretary to Sir Francis Walsingham. In a lengthy treatise of 1592, Beale opined that a “Councellor and Principall Secretarie” should possess “a booke of the Mappes of England, w[i]th a particular note of the divisions of the shires into Hundreds, Lathes, Wappentakes, and what Noblemen, Gentlemen and others be residing in every one of them.” Only six of Saxton’s thirty-four county maps showed the internal divisions, and none explicitly identified houses by class of owner, although this could be partially inferred. Thus the field was left free for other mapmakers to improve on the work of Saxton, who himself, probably because he felt he had nothing more to contribute and hoped for better remuneration from wealthy private clients, concentrated entirely on local mapping after 1583.

In some cases the revision of Saxton was limited to individual counties. Because of its vulnerability to invasion, Kent came in for more cartographic attention than any other county in the course of the sixteenth century. Almost in acknowledgement of the limitations of Saxton’s efforts of the previous year, in 1576 Kent was mapped, possibly by William Lambarde, probably utilizing a now lost larger-scale map of about 1570, to accompany his *Perambulation of Kent*, the earliest printed history of an English county. It was mapped yet again, in 1596, by Lambarde’s protégé, Philip Symonson, superintendent of Rochester Bridge and in his last year, mayor of Rochester,

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314. As early as 1579/80 the Duchy of Lancaster purchased a copy of the atlas “for the better instruction of the queen’s officers” (Robert Somerville, *History of the Duchy of Lancaster*, 1265–1603 [London: Chancellor and Council of the Duchy of Lancaster, 1953]), 330, and also quoted in Morgan, “Cartographic Image,” 137–38 n. 23). If the price for the atlas of £5 as quoted in the letter of 1585, was anything near the true figure, it would have been sufficient to exclude all but the most wealthy and determined from purchasing them. In 1610 Henry Percy, Earl of Northumberland, was able to buy two copies of Ortelius’s *Theatrum*, to join his enormous map and atlas collection, which included a Saxton, for just £1 (G. R. Batho, “The Library of the ‘Wizard’ Earl: Henry Percy, ninth Earl of Northumberland [1564–1632],” *Library*, 5th ser., 15 [1960]: 246–61). By then, of course, Ortelius’s atlases had become relatively commonplace, but of the maps supplied to Frobisher before his great voyage of 1578, only a “very Great Carte of Navigation” cost £5. Mercator’s enormous 1569 world map cost £16/8d, Thevet’s *Cosmographie* £2/4d, three unspecified printed maps 6/8d, and six manuscript charts 6/8d. Recorde’s *Castle of Knowledge* and Cunninghame’s *Cosmographical Glass* cost 10 shillings together, and Pedro de Medina’s *Regiment of the Sea* in Richard Eden’s translation, 3/4d (James McDermott, “Humphrey Cole and the Frobisher Voyages,” in *Humphrey Cole: Mint, Measurement, and Maps in Elizabethan England*, ed. Silke Ackermann [London: British Museum, 1998], 15–19, esp. 16–17, citing TNA, Exchequer, King’s Remembrancer E164/85). Working on the probably erroneous assumption that the production rate was constant over the years, Skelton estimated that the likely original price of the atlas would have been 15 shillings (County Atlases, 8).
315. Skelton, *County Atlases*, 8, but compare the comments of Harvey, who seems to lump together pre- and post-1590 printing rates: “Certainly they were produced in quantity and found a good market; the relatively large number of copies that survive today is sufficient evidence” (“Estate Surveyors,” 44). These security considerations may also account for the four-year delay, which puzzled Skelton, in the creation of Saxton’s wall map of 1583 (Skelton, *Saxton’s Survey*, 12): particularly as it showed latitudes and longitudes.
318. Excerpted in *Read, Mr. Secretary Walsingham*, 1:428–29.
in one of the most sophisticated maps to be produced in England under Elizabeth. As Lambarde wrote in the second edition of his Perambulation of Kent in 1596, “not only the Townes and Hundreds, with the Hilles and Houses of men of woorthe, are more truly seated: but also the Seacostes, Rivers, Creekes, Waterings and Rilles, be more exactly . . . traced, than heretofore, in this, or any other of our lande (that I know) hath been performed.”\(^321\) Kent was not alone in receiving particular cartographic treatment. In 1602 George Owen of Henllys prepared a manuscript map of Pembrokeshire that remedied several of Saxton’s errors, indicated the homes of the gentry families, contained much statistical information, and improved on some of Saxton’s coastlines, even if in the process new mistakes crept in.\(^322\)

John Norden

The first person to attempt a more general updating of Saxton was the surveyor, antiquary, and religious writer, John Norden.\(^323\) From about 1590 he made repeated efforts to obtain government support for his attempts to produce a series of small county guides, consisting of alphabetical lists of places with contemporary and antiquarian notes about each, which could be located via a grid on a small but detailed accompanying county map. Collectively these would constitute the Speculum Britanniae or “Mirror of Britain,” covering the whole country.\(^324\) Although most of the counties that Norden finally succeeded in covering had also been the subjects of particular treatment by Saxton, Norden’s maps had a depth of information that was not to be found in Saxton. This information included some elements that we know, from Beale’s treatise and the annotations on Burghley’s proof copies of Saxton’s maps, were of particular importance for the government. For instance, the maps always show the locations of the queen’s palaces (important information at a time when the court was still peripatetic), the homes of the gentry (with their names), and the internal divisions of counties. Important roads (probably an innovation copied from German maps) are usually shown, as are the places where government edicts and proclamations could be read out, displayed, and enforced, musters raised, and beacons mounted, such as churches and also chapels of ease.\(^325\) Occasionally Norden indicated the economic resources of the area depicted, such as copper mines in Cornwall and copper mills in Middlesex, again a feature copied from German maps, such as Philipp Apian’s survey of Bavaria. When the royal arms were added to the cartographic image, the cumulative image was one that Norden hoped would appeal to the queen and her ministers.

Norden tried to win government support for his venture by presenting manuscript copies of his county surveys to well-connected individuals. In addition to Burghley, who received manuscript copies of most volumes, and the queen herself, this group included Burghley’s rivals—notably the ill-fated Earl of Essex and his widowed aunt, the Countess of Warwick.\(^326\) Norden’s work nevertheless received, as he repeatedly complained, no financial support from Burghley and only a minimal amount of direct government support in terms of a printing privilege (1592) and passes (1594) enabling him to consult local archives (a requirement notably lacking in Saxton’s passes) as well as to ascend church towers and hills in the company of knowledgeable locals.\(^327\) William Waad, like Elyot and Ashley, a clerk to the Privy Council, financed the publica-
tion of the volume on Middlesex (fig. 54.10). Unlike Saxton, however, Norden received no lands or sinecures from the queen in recompense for his labors. The pass of July 1594 even included a royal plea for “some voluntarie benevolence or contribution” to be given to Norden by local officials or their friends—a reflection of the continuous weakening of the crown’s financial resources since the golden days of the 1530s.328

Norden sought to accommodate this lessening of central support in two principal ways. First, as Kitchen has demonstrated, he tried to finance his work through profits from private surveys and the sale of his religious tracts.329 Second, he tried to attract local sales through the insertion of antiquarian and local information in the maps as well as the texts (interesting though this was to him in its own right). Thus the county maps showed and named ruined castles, decayed villages, the sites of famous battles, and, for the first time, and on only a few of the maps, miniature plans of leading or county towns.330

Two volumes of the Speculum Britanniae, covering Middlesex and Hertfordshire, were published in 1593 and 1598, respectively, while Norden seems to have published separate maps of Surrey, Hampshire, Sussex, and perhaps Kent in 1595–96. These and all of his other county maps,

328. The offices Norden did receive in 1600 from Elizabeth and under James I as surveyor of the king’s southern woods and later senior surveyor to the Duchy of Cornwall were real jobs and certainly not rewards for past services. See Kitchen, “John Norden,” 52–55. After 1603 Norden received generous fixed sums of money from the king, but this was by way of reward for his work in surveying the royal estates, which was of direct importance to the crown, unlike his earlier county surveys (Kitchen, “John Norden,” 55–56).
apart from that of Northamptonshire, provided the principal sources for the equivalent maps in the 1607 edition of Camden’s Britannia and in John Speed’s Theatre in 1611.\textsuperscript{331} It has generally been assumed that Burghley’s death and Norden’s over-close association with the Earl of Essex and with puritan views brought the project to a halt in 1599, when Robert Cecil refused to renew his pass.\textsuperscript{332} Cecil may, however, also have been motivated by a desire to concentrate royal sponsorship of surveying and cartography in the one area of obvious royal need, the surveying of the royal estates.\textsuperscript{333} It can be no coincidence that within a year of being refused a pass for his county surveys, Norden was appointed surveyor of crown woods and forests in southern England.\textsuperscript{334} The maps and text for the manuscript “Topographica & Historical description of Cornwall,” surveyed between 1597 and 1601, presented by Norden to James I in 1604, represented an attempt, which soon proved futile, to restart the Speculum Britanniae series under a new monarch.\textsuperscript{335} Assured of a livelihood as a surveyor of crown lands, Norden seems to have been prepared to let the project lapse when it failed to elicit a favorable response from the new king.

William Smith

Moreover, by the late 1590s alternative county cartographers had appeared on the scene. William Smith, a herald and apparently an acquaintance of Norden,\textsuperscript{336} took over the torch of county mapping. Smith had been cartographically interested since at least 1568, the date of his earliest surviving town plan. In 1572–73 he translated the text of the German edition of Ortelius into English.\textsuperscript{337} Between about 1578 and 1584 he lived in Nuremberg, the principal south German center of printing and mapmaking.\textsuperscript{338} As landlord of the Golden Goose Inn in what is now the Winklerstrasse, he lived in the vicinity of and probably had access to the humanist libraries of the patrician families, and notably that of Willibald Pirckheimer, with its strong geographical, mathematical, and cartographic emphasis. Smith also knew the cartographer Paul Pfinzing.\textsuperscript{339} It is presumably through these channels that he picked up ideas, such as the advantages of a key to conventional signs and the need to show roads, which he may have passed on to Norden as well as practicing himself. The format of his description of Nuremberg, originally written in the early 1580s—with its mixture of views, town plans, regional maps, and a laudatory descriptive text covering the city’s history, constitution, and economy—could have provided Norden with a model for the Speculum Britanniae. On his return to England, as well as compiling numerous plans and views of English towns (of which more later), Smith created a manuscript county map of Cheshire to accompany a history of the county written in 1585, and in 1598 he drew a county map to amplify a copy of a heraldic visitation of Lancashire of 1567.\textsuperscript{341} It was in the later 1590s that he seems to have had the idea of publishing a county atlas. Smith may have received indirect government support: in 1597 he was appointed to the College of Arms as Rouge Dragon Pursuivant.\textsuperscript{342} In 1602/3 twelve county maps were engraved by Jodocus Hondius in Amsterdam prior to being printed, probably in England, and sold, probably by Hans Woutneel. Subsequently the plates passed from publisher to publisher in London for the rest of the century. The maps themselves do not mention the cartographer, which led their creator to be termed “the anonymous mapmaker” by early carto-bibliographers. However, the similarity of the Cheshire and Lancashire maps to Smith’s manuscript maps and the chance discovery in the Netherlands in 1958 of four fair drafts in Smith’s hand of the maps of Hertfordshire, Worcester, Warwickshire, and Cheshire, showing clear evidence of the way in which they were prepared for the engraver, led Skelton to

\textsuperscript{331} Kitchen “John Norden,” 60.
\textsuperscript{334} Kitchen, “John Norden,” 51.
\textsuperscript{335} Kitchen, “John Norden,” 51, and Ravenhill in Norden’s Manuscript Maps, 18–21. For the provenance of the text and the maps, which are split between the BL and Trinity College, Cambridge, see Ravenhill, 3–10.
\textsuperscript{336} This acquaintance is deduced from his utilization of Norden’s maps of Essex and Northampton, which remained in manuscript, when compiling his own maps.
\textsuperscript{337} Sotheby’s, map sale, London 11 July 1986, lot 359. It was quite distinct from the English translation of Ortelius published in 1606.
\textsuperscript{339} He mentions Pfinzing in his “Description of the Cittie of Noremburg.” I am grateful to David Paisey for information about Pirckheimer’s library, which was to be acquired in Nuremberg in 1636 by the Earl of Arundel and has since been largely scattered, with the exception of the manuscripts that are now in the BL. The Pirckheimer family house, like Smith’s inn, was in the Winklerstrasse.
\textsuperscript{340} William Roach, “William Smith: ‘A Description of the Cittie of Noremberg’ (Beschreibung der Reichsstadt Nürnberg), 1594,” Mitteilungen des Vereins für die Geschichte der Stadt Nürnberg 48 (1958): 194–245 (Stadtbibliothek Nor. H. 1142). This was acquired by the Nuremberg authorities as recently as 1954. Two further copies from 1594 are known, one in Lambeth Palace Library (MS. 508) and another, dedicated to Lord Burghley, in the BL (Add. MS. 78167). See also Delano-Smith and Kain, English Maps, 186–87.
\textsuperscript{341} BL, Harley MS. 6159 (Lancashire); BL, Harley MS. 1046, fol. 132 (also, dated 1588, Bodleian Library, Oxford, Rawlinson MS. B.282) (Cheshire); and Skelton, County Atlases, 20.
identify their creator as William Smith (fig. 54.11). With the exceptions of the maps of Lancashire and Cheshire, Smith’s county maps were not based on fresh survey, being copied from Norden’s and Saxton’s maps with additions of the same type—hundreds, tables of conventional signs, and occasionally roads and the homes of the queen and the gentry—that are to be found in Norden’s maps and, in some cases, such as the map of Leicestershire, with many more place-names, supplied by local informants.

John Speed

William Smith’s projected county atlas did not proceed beyond the twelve maps, perhaps because of lack of time, diminishing enthusiasm, and the entry into the field of John Speed. Speed, a relatively humbly born Cheshireman like Smith and a member of the Merchant Taylors’ Company of London, had been involved with maps since the late 1580s. His earliest printed map, a wall map of Canaan, was published in 1595. Unlike Smith, who had a prickly temperament, Speed emerges from his

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345. “Smith, William,” in *The Dictionary of National Biography: From the Earliest Times to 1900*, 22 vols. [1885–1901; reprinted Lon...
writings as no less enthusiastic but also as a pleasant, emollient, amenable, and modest scholar. Perhaps as a result he was able to count on several influential supporters. These included such antiquaries as William Camden, Sir Robert Cotton, and William Smith himself but also, from 1598, the scholarly courtier and royal minister Fulke Greville (later first Baron Brooke). While Cotton gave Speed free access to the enormous collections of manuscripts, maps, and coins that he was then in the process of building, Greville found him a sinecure in the Customs which, in Speed’s words on his map of Greville’s home county of Warwickshire, set him “free from the daily imployments of a manuall Trade . . . giving [him] his liberty thus to express the inclination of his mind.”

Starting work apparently in about 1596, his first, trial county map of Cheshire, based on the work of Saxton and Smith, was engraved by William Rogers in 1603. Presumably as a result of Greville’s assistance, Speed was issued with official passes that were similar to those granted to Norden in the 1590s, giving him access to official records. Like Saxton, he received grants of land and official positions as a reward for his work. His research and

FIG. 54.12. JOHN SPEED, MAP OF HERTFORDSHIRE.

Size of the original: ca. 38.4 × 51.3 cm. Photograph courtesy of the BL (Maps 177.e.2 [12]).
surveying work reached a peak of intensity between 1606 and 1608, in which years Jodocus Hondius, who seems to have been a shareholder in the project, began engraving the maps, a task which was completed in 1610. Also in April 1608, George Humble, a London bookseller, obtained a royal privilege granting him the right to print and publish the forthcoming atlas for twenty-one years.

Speed’s maps appeared in the *Theatre of the Empire of Great Britaine* (1611), the first published atlas of the whole of the British Isles, which was very consciously modeled, even down to the title, on Ortelius’s *Theatrum*. It contained sixty-seven maps: one of the newly united kingdoms of Great Britain and Ireland; one of the Anglo-Saxon Heptarchy; one each of England, Wales, Scotland, and Ireland; forty-four of the English counties, each individually portrayed for the first time (fig. 54.12), with the Isles of Man and Wight and the Channel Islands; thirteen of the Welsh counties; and four of the Irish provinces.

It would seem that Hondius was responsible for the maps’ overall design, based on the draft maps and town plans and the heraldic, historical, and antiquarian information that Speed sent over to him in Amsterdam. They reflected the fashion for *cartes à figures* that Hondius had pioneered from the mid-1590s.

Recent research has suggested that Speed was being overmodest in his much-quoted and self-deprecatory statement that he had “put [his] sickle into other mens corne.” Although his borrowings from Saxton, Norden, Smith, Symonson, and others are clear—and acknowledged—the contents were continuously revised over the years. In their published form the county maps include numerous corrections and additions to the place-names, antiquarian information, and numerous town plans, for which Speed was solely responsible and for which his original manuscript drafts have recently come to light in Merton College, Oxford.

The overall impression given by the *Theatre* was one of national pride. The county images, however, made a very different impression from those of Saxton. Instead of the generally prominent royal arms, the modest arms of Seckford, and Saxton’s name, the royal arms get swamped beneath depictions of the antiquities and ancient coins found in each county, the coats of arms of historic individuals who had taken their noble titles from the county, the current arms of the county, depictions of the county and its larger towns, the particular attributes of the county, and depictions of battles that had taken place within its borders. Although Speed personally seems to have been a convinced royalist, as the decoration of his early “Invasions” map of Great Britain with its portraits of James I and Anne of Denmark demonstrates, the effect of the decoration of the country maps is to glorify the local at the expense of the national. Where Saxton’s maps reflect the links between crown and country, Speed, in a manner that seems to anticipate the divisions of 1620–50, dwells on the country, with scant regard for the crown.

The lasting effects of the mapping of Saxton and particularly of Speed were enormous. Although a few counties were resurveyed in the course of the seventeenth century, the majority were not. As late as the early eighteenth century Saxton’s plates were being copied, updated, and their appearance modernized without any fresh survey being undertaken. The large-scale country surveys of the later eighteenth century came to replace the maps of Saxton and Speed in many cases, but they were not finally to be rendered obsolete until the arrival of Ordnance Survey mapping in the nineteenth century.

**Mapping the Countryside, 1550–1611**

**The Varieties of Local Maps**

The discussion of Tudor local maps and plans has in the past tended to be organized according to the type and purpose of the map, be it (for example) primarily legal: to clarify disputed boundaries or rights; administrative: to facilitate and record such improvements as enclosure and drainage schemes; or “general-purpose”: to manage a private landowner’s estate by maximizing rental income, recovering land that had been encroached on or silently annexed by others, and by utilizing the demesne lands most effectively. Unifying all of these different types of maps by 1600, however, was the patron’s expectation that a map would be better able to meet his varying ob-

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jectives than a traditional written description, and that a map drawn to a consistent scale, supplementing or incorporating the information from written sources, would achieve these objectives better than a map drawn to a variable scale.

As can be confirmed from about 1570, when we can attach specific names to many local maps, the same individuals made all of these different types of map, just as the same class of people, in various guises—justices of the peace, commissioners for enclosure, college masters, governors of hospitals or corporations, or private landowners—commissioned and retained the maps in their archives. Indeed, as we shall see, maps made in one context were sometimes reused to serve a variety of other functions. Thus it seems reasonable to treat them as a group, bearing in mind that their differing purposes and the occasions for their creation were often reflected in radical differences in construction and appearance.

**THE SPREAD OF THE SCALE MAP TO THE COUNTRYSIDE**

**Land Values, Litigation, and Mapping**

It has been argued that the growth of estate mapping was primarily a response to, and symptom of, the transformation of the economy from feudal to capitalist. The model of land management moved away from the conception of a God-fearing, paternalistic (indeed, altruistic) lord of the manor acting within a system of land tenure that was centered on a complicated balance of rights and duties and measured in terms of a fixed product. In this older model, the extent of full “ownership” by the lord was well-nigh impossible to portray graphically and its active management was relatively irrelevant. The emerging model came to emphasize absolute ownership, in the modern sense, of the land itself and its efficient management by rapacious landlords for their personal benefit, as exemplified by the increasing enclosure of former open land and waste and the gradual creation of large landed estates.360

The increasingly capitalistic structure of the English economy did indeed have a considerable influence in the changing attitudes toward land management. The middle years of the sixteenth century saw the creation, for the first time in England, of a lively market in land (in the wake of the rapid sale by the crown and then resale by their new owners of the bulk of the former monastic lands),361 dramatic price inflation, and increased pressure on land from a rising population. Every acre of land became more valuable in itself and as a resource that had to be fully exploited through the active management of the demesne lands, for instance by way of enclosure of formerly open fields and waste362 or through increasing the rents and entry fines payable on leased lands. The crown, many of the lesser landowners and corporate bodies (notably several Oxford and Cambridge colleges), the London hospitals, and (though it would seem to a much lesser extent) the Church of England363 gradually came to realize that they needed to have a detailed knowledge of their estates, on the maximization of the income from which, in an age of inflation, their futures depended.364 An awareness of these factors and of the need to come to grips with a changed environment was reflected in the growing number of cases in which a specialist with legal training charged with maintaining and expanding the landowner’s rights and maximizing his income was employed on an ad hoc basis. Such specialists replaced the old-fashioned, permanent manorial “surveyor,” who had conservatively overseen the smooth running of the estate.365

These changes did not automatically lead to the commissioning of estate maps. Even if the stereotypes of the

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362. Darby, writing in 1933, particularly emphasized this as a causative factor (“Agrarian Contribution”).

363. P. D. A. Harvey, “English Estate Maps: Their Early History and Their Use as Historical Evidence,” in *Rural Images*, 27–61, esp. 41. One of the earliest examples of scale maps accompanying a written survey was created by Israel Amyce for the Dean and Chapter of St. Paul’s Cathedral (survey of Belchamp St. Paul, Essex, by Israel Amyce, 1576, Guildhall Library, London, MS. 25517/1, fol. 100; illustrated in Harvey, *Maps in Tudor England*, 86). However, the dean at that time, Alexander Nowell, may well have been more aware than most clerics of the value of maps. Not only was he a former headmaster of Westminster School and a man of scholarly, antiquarian tastes, he was also Laurence Nowell’s first cousin. A. Stuart Mason, “A Measure of Essex Cartography,” in *Essex, Full of Profitable Things*: *Essays Presented to Sir John Ruggles-Brise as a Tribute to His Life of Service to the People and County of Essex*, ed. Kenneth James Neale (London: Leonard’s Head Press, 1996), 253–68, esp. 257.

364. The crown, probably because of Elizabeth I’s growing conservatism and the profits gained by her more cartographically minded ministers from the existing, slack status quo, only began to wake up to these realities after 1600. See Barber, “England II,” 79–82; idem, “Was Elizabeth I Interested in Maps?” 194–98; Heather Lawrence, “John North and His Colleagues: Surveyors of Crown Lands,” *Cartographic Journal* 22 (1985): 54–56; McRae, *God Speed the Plough*, 174–75; and R. W. Hoyle, “Shearing the Hog: The Reform of the Estates, c. 1598–1640,” in *The Estates of the English Crown, 1558–1640*, ed. R. W. Hoyle (Cambridge: Cambridge University Press, 1992), 204–62, esp. 211. Hoyle, however, points out that “no attempt [was made] to produce a general cartographic survey of the Crown estates,” mapping being restricted, on grounds of cost, to those objectives that could be met most effectively cartographically: that is, the recovery of lost land, such as the lands surrounding Exeter Castle in Devon (for which see W. L. D. Ravenhill, “Maps for the Landlord,” in *Tales from the Map Room*, 96–97), and the enclosure of forests and woodland, the plans for which are now almost entirely lost, although Richard Banke’s map of Sherwood Forest (below) is, and a plan of Kenwood in Middlesex (TNA, MPF 293) may be, survivors.

paternalistic old and the rapacious new types of landowner actually existed outside the minds of the contemporary pamphleteers, by the 1530s the process of change had already been underway for several centuries without any cartographic consequences.366 No “estate maps” or maps of estates drawn to a uniform scale are known from the time of the Dissolution and the first sales of monastic lands in the 1540s and 1550s, when map consciousness was growing, enclosure was rampant, the pamphleteers on both sides of the debate were already busy, and the knowledge and technology necessary for the creation of scale maps were available. Old-style written surveys could still serve the new purposes, and there were plenty of surveyors who were satisfied with them. Valentine Leigh in 1577 still assumed—just as Richard Benese had in 1537—that the end result of the improved measuring techniques that they advocated would be written estate surveys.367 Indeed, as late as about 1616, John Norden was apparently sincerely of the opinion that estate plans were not necessary except for the demesne lands and improved waste that it was intended to enclose.368

Higher land values led to increased litigation, however, and the latter did have cartographic consequences.369 From the 1550s the Court of Exchequer, which came to specialize in estate matters after it took over from the Court of Augmentations in 1544, increasingly insisted on the production of maps—not originally to scale—to illustrate the matters in dispute. In doing so it followed a trend already set by the duchy of Lancaster.370 This practice could only have served to force some otherwise conservative landowners to become familiar with the utility of maps and plans, albeit drawn to no consistent scale and predominantly pictorial, in the local context. It is demonstrated by a rough ink plan drawn to a variable scale in about 1550, relating to a dispute over rights of way in Byfield and Chipping Warden in Northamptonshire (fig. 54.13), which bears a note, presumably made on behalf of the aggrieved party (whose standpoint the map illustrates) that Sir Richard Saltonstall had a copy at the assizes in Northampton on 18 July of that year.371 Others seem to have been influenced by the example of these legal maps to commission their own plans illustrating questions of tenure. One of them, a map of monans in northern Dorset, datable to 1569–74, attempts to convey the appearance of measured reality even though it is not actually to scale.372 As a result it looks at first glance very much like the estate maps that were soon to put in their appearance. This legal context provides the background for the creation as early as 1567 of what may be the first local map to be drawn to a consistent scale in its essentials. This is a map that was produced for display at the Court of Requests in a dispute over marshland in Canewdon in Essex.373

366. Harvey, “Surveying in Medieval England,” 12–16, demonstrates that changes in land tenure and in the mentality of landlords and the consequent need for particularly accurate written surveys (involving the evolution of the written “extent”) had been under way since 1180.

367. Harvey, “English Estate Maps,” 30. Leigh discussed the creation of maps drawn to a consistent scale only in a military context. For Richard Benese, see his This Boke Sheweth the Maner of Measurynge of All Maner of Lande, as well of Woodlande, as of Lande in the Felle, and Compytynge the True Nombre of Acres of the Same: Newely Invented and Compiled by Syr Rycharde Benese (Southwark: James Nicolson, 1537).


369. Although some of the maps are diagrammatic and roughly drawn, many are pictorial and very finely executed, presumably to impress the court. Examples of such maps, all of them depicting the area in dispute at a larger scale than the surrounding areas, include the following (some may be maps prepared for one of the plaintiffs or maps commissioned for record purposes): Duchy of Lancaster: Blackpool south of the Fylde in Lancashire 1531–3 (TNA, MR 1; DL 1/8P3, 3/22/L1 and L2), for which see E. M. Yates, “Blackpool, A.D. 1533,” Geographical Journal 127 (1961): 83–85; estates around Ashbourne in Derbyshire, ca. 1547 (TNA, MPC 35; DL 3/49Gc), for which see E. M. Yates, “Map of Ashbourne, Derbyshire,” Geographical Journal 126 (1960): 479–81; and Duchy of Cornwall: illustrating encroachment on common land in near Bodmin, ca. 1566 (Duchy of Cornwall Record Office, Arundell Papers ARB 202/1–17 and 203/1–10). I am grateful to the late Professor William Ravenhill for these references. For a map of about 1553 that was probably prepared by a plaintiff in anticipation of a court case, see W. L. D. Ravenhill, “The Plottes of Morden Mylles, Cuttell (Cotehele),” Devon and Cornwall Notes and Queries 35 (1984): 165–74 and 182–83 (referring to Cornwall Record Office, DD ME2369). Numerous other examples, ranging in date from 1508 to 1581 with an increasing move toward the adoption of a uniform scale, are described, and several are illustrated, in Harvey, Maps in Tudor England, 105–15, and more generally in idem, “Estate Surveyors,” 40. Peter Eden has suggested that the increasing insistence on the production of plans in court should be linked to other practical reforms in court procedures that occurred under Elizabeth, such as the replacement of oral evidence by written submissions (“Three Elizabethan Estate Surveyors,” 77).

370. Illustrated and discussed in Harvey, Maps in Tudor England, 105 and 107.

371. As a result it looks at first glance very much like the estate maps that were soon to put in their appearance. This legal context provides the background for the creation as early as 1567 of what may be the first local map to be drawn to a consistent scale in its essentials. This is a map that was produced for display at the Court of Requests in a dispute over marshland in Canewdon in Essex.

372. BL, Add. MS. 52522. The map is listed both in Royal MS. appendix 86, fols. 94–96 of ca. 1660 of maps transferred to Charles II’s apartments in Whitehall from the Royal Library in St James’s Palace and as item 24 in the “second bundle” of “His Maties Draughts & Mappes now Remaying in the hands of . . . my Lord Dartmouth” in the list of royal maps that were transferred to the Admiralty or were ordered to remain with Lord Dartmouth in April 1688 (Bodleian MS. Rawl. A. 17, fols. 17–20). For the background to the map, see P. D. A. Harvey, “An Elizabethan Map of Manors in North Dorset,” British Museum Quarterly 29 (1965): 82–84. A detail is also illustrated in color in Tyacke and Huddy, Saxton and Tudor Map-Making, fig. 77.

373. “Plan of Northwicke now in variance,” TNA, MPI 627, mentioned in Mason, “Measure of Essex Cartography,” 253. The pictorial
FIG. 54.13. ANONYMOUS, MAP OF BYFIELD AND CHIPPING WARDEN, CA. 1550. Lower right: “Copia huius habuit Ricardus Saltonstall Miles 18 July ad assisas Northt.”

Size of the original: ca. 33.2 × 27.8 cm. Photograph courtesy of the BL (Add. MS. 63748).
Other Factors

As we have seen, from at least the early 1530s schoolbooks, such as *The Boke Named the Gouernour*, had mentioned mapmaking as a gentlemanly accomplishment and the utility of maps as tools for planning. This must have influenced successive generations of pupils who went on to become cartographic patrons or practitioners. Allied to this was the growing popularity of the concept that arithmetic could be of immense practical use in most fields of human endeavor and particularly in map- and chartmaking, where mathematical precision, as made possible by scientific instruments, could assist in establishing geographical truth.\(^374\) The increasing prestige enjoyed by Euclidean geometry and scientific measurement reached new heights following the publication of the translation into English of Euclid’s *Elements* by the merchant Sir Henry Billingsley,\(^375\) with the famous introduction extolling the virtues of maps by John Dee in 1570.\(^376\) It had been preceded, however, by the publication (and repeated republication) since 1533, when Gemma Frisius first explained the practice of triangulation in print, of a number of more specialist works on the same lines, including those by Richard Benese (*This Boke Sheweth the Manner of Measurynge of All Maner of Lande*, 1537), William Cumingham (*The Cosmographical Glasse*, 1559, the first full printed exposition of triangulation in English), Robert Recorde (four books produced from 1557; particularly, *Pathway to Knowledge*, 1560), and Leonard Digges (*Tectonicon*, 1556, and with Thomas Digges, *Pantometria*, 1571). Following on from the earlier works were William Bourne’s *A Booke Called the Treasure for Travellers* (1578), Cyprian Lucar’s *A Treatise Called Lucarsolace* (1590), Norden’s *The Surveyor’s Dialogue* (1607; expanded second edition, 1610), and Aaron Rathborne’s *The Surveyor in Four Bookes* (1616).

In the same period the availability of scientific instruments (notably the plane table and theodolite and numerous variants on them) made possible the creation of highly accurate scale maps of small areas.\(^377\) The plane table was intended for outdoor mapmaking, whereas the more accurate theodolite, which had been popularized (and baptized) by Digges in his *Tectonicon*, made it possible for plans to be drafted in the comfort of one’s home on the basis of angular measurements gathered in the field. However, the theories of triangulation and the instruments\(^378\) had been available for decades before the first local maps drawn to scale were created and cannot alone be sufficient to explain their appearance.

Another important contributory factor to the spread of scale mapping to the countryside was the potential patron’s prior experience of it, albeit in a different context. Courtiers, who, as has been seen, included a fair number of amateur mapmakers in their number, would have been familiar with the use of scale maps in the context of the planning of fortifications and the mapping of strategic areas since the 1540s.\(^379\) It is significant that some of the earliest landowners to commission scale maps of their estates came from well educated, sophisticated court circles—such men as Sir Christopher Hatton, Lord Burghley himself,\(^380\) or at a lesser level, Sir William Cordell, a master of the rolls under Mary and Elizabeth. Those beyond the court might not have had direct experience of the benefits of scale maps as an administrative planning tool, but after 1570 they could have read about them, again in the context of military mapping, in Leonard and Thomas Digges’s *Pantometria* and in William Bourne’s *Treasure for Travellers*.\(^381\)

Further awareness of the value of uniform scale would have come from contemplating the maps in the various editions of Ortelius’s *Theatrum orbis terrarum* after 1570. The influence of Saxton’s county maps is more depiction on the map of a house and barn, which were of secondary importance, are out of scale. About four years earlier, in about 1563, a map was prepared for display in court showing lands in dispute between Richard Sackville and Sir Edward Gage in the Ashdown Forest in Sussex (TNA [PRO], MPF 144, mentioned in Harvey, “Estate Surveyors,” 40). It is drawn to a consistent scale and only its coverage, of twenty-five miles, and its consequent rather small scale, removes it from the category of map discussed here. Its existence is, however, an important straw in the wind as far as the evolution of estate maps drawn to a consistent scale is concerned.\(^374\)

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\(^375\) Cormack, *Charting an Empire*, 82, points out that Billingsley’s primary occupation as a merchant illustrates again the close association and sometimes even symbiosis between mathematical theoretician and man of affairs that one encounters at all turns in Elizabethan England.

\(^376\) See p. 638 in this volume.


\(^378\) The theodolite had been illustrated, under the name of the Polymetrum, by Waldseemüller as early as 1512 and must have been known to some English intellectuals long before 1570 (Turner, “Mathematical Instrument-Making,” 97).


\(^380\) See pp. 1613–14.

\(^381\) Harvey, “English Estate Maps,” 30–31. The first published tract to mention mapmaking in the context of estate surveying, Edward Worsop’s *A Discoverie of Sundrie Errours and Faults Daily Committed by Landemeaters, Ignorant of Arithmetick and Geometrie* (London: Gregorie Seton, 1582), and, significantly, dedicated to Lord Burghley (see Harvey, “Estate Surveyors,” 42), appeared some time after the first “estate” maps had been created, even though it, and later tracts along the same lines by Agas (1596), Norden (1607), and Rathborne (1616), undoubtedly strongly influenced later patrons as well as surveyors.
problematical. The first local map to a consistent scale was drawn before Saxton had started work. However, his maps seem quickly to have become fairly well known in gentry circles, and by 1660 the astronomer Imanuel Halton demonstrated their influence by using design elements from Saxton’s county maps to decorate the map of his own Cumberland estate.383

From Maps for Courts to Estate Maps

By the 1570s local maps and plans were increasingly being required by the courts. Corporate bodies—hospitals, colleges, and the like—seem, in Eden’s words, “to have been among the first to improve their defences, . . . Prudence dictated that it was preferable to map estates comprehensively in advance than wait until an emergency compelled hasty action.”384 This precautionary and defensive preparation of maps set a pattern for the following decades. Mastoris has suggested that one unintentional side-effect of the Coventry-born surveyor Richard Bankes’s detailed surveying and mapping for the crown of Sherwood Forest in 1609 (fig. 54.14), which more than met its costs through the increased revenue from fines that it generated, was to intimidate the neighboring landlords into having their estates mapped by way of self-protection.385 No doubt such examples could be multiplied.

Not entirely independently of these factors, by the mid-1570s some individual landowners, possibly encouraged by the theoreticians and surveyors with whom they corresponded or were in contact, evidently also felt that mapped surveys drawn to a consistent scale could be of particular benefit as a supplement to the written surveys of their estates. Of particular importance, as pointed out by Burghley’s correspondent Ralph Agas in 1596, was the clarity with which mapped surveys drawn to a consistent scale could present locational information (for instance about abuttals, which were notoriously difficult to express in words) and especially the precision with which boundaries could be demonstrated. On the one hand, scale maps could assist the landlord in deciding on future changes, such as the lines of enclosures. On the other, and in a way that was impossible with written surveys or property deeds, boundaries could continue to be traced accurately over the years, despite changes in field names and the disappearance of old landmarks, such as trees.386

Ralph Agas, perhaps the earliest theorist-practitioner, dated his conversion to the idea of creating scale maps to the early 1570s. One day, while using a theodolite, as rec-
ommended by Digges in the *Pantometria*, to create a written survey, it suddenly occurred to him “what force a bounder by plat might be in time to come, which carrieth the hedges at a haire breadth by a circular division of infinite parts.” 387 Within a few years he had persuaded at least one Norfolk patron to commission such a map. By 1587 this type of mapping had already become so common, at least among the ruling elite, that Burghley criticized the master of All Souls College in Oxford for not having commissioned a mapped survey of a piece of land to ascertain a proper valuation for the entry fine before leasing it out.388 By 1600 a steady stream of estate maps was being produced, although it is not yet possible to quantify even the survivors, scattered as they are in private homes, family and institutional archives, libraries, and county record offices. Nevertheless, examples of early local maps regularly appear at auction, and, by the mid-seventeenth century, some land surveyors, such as George King or Giles Burton, were producing scale maps of estates in sufficient numbers to justify the production of printed pro-formas and stamps for often-used symbols or decorations.389

A Minority Phenomenon

Yet for all the advantages of the scale map, they were expensive to produce.390 Moreover even in the later sixteenth century an understanding of the language of scale seems not to have been widespread, even among the literate.391 As a result most landowners remained unconvinced or just unaware of the advantages of the new practices. Only 10 percent of Cambridge landowners had commissioned maps of their estates by 1673,392 and the surveys that were commissioned tended to be of the traditional, written variety. Local maps that were prepared as fair copies but were not drawn to a consistent scale also continued to be created for several decades after 1580. They seem to have met their objectives satisfactorily in cases for which absolute accuracy was not a critical factor. Such maps, illustrating a dispute over rights of way for droving near Dartmoor or pleading for the enclosure of land in Lincolnshire, were created as late as 1609 and 1629, respectively.393 Much rougher sketch maps were drawn for purposes of estate administration until well into the nineteenth century.394

THE PRACTITIONERS AND THEIR PRACTICE

By the end of the sixteenth century it was becoming axiomatic for such writers as Ralph Agas and John Norden that mapmaking was an important (and in Agas’s view, even the most important) part of a land surveyor’s work, together with his legal skills and agricultural knowledge.395 Writing of the duties of a land surveyor in the middle of the seventeenth century, William Leybourn no longer devoted any space, in his book *The Compleat Surveyor* (1653), to legal matters, assuming that land surveying was exclusively concerned with mathematics.396

By 1640 local mapmakers came from a variety of classes and callings. They included scientifically minded noblemen like the “wizard” ninth earl of Northumberland; members of the gentry like Sir Nicholas and his son Sir Nathaniel Bacon of Stiffkey; country gentlemen with a university education like Israel Amyce, Thomas Langdon, John Blaggrave, and, later in the century, William Fowler; clergymen like Agas; schoolmasters or self-styled “professors of the Mathematices” like William Senior, the surveyor to the Cavendish family from 1609; carpenters like the Walkers of Hanningfield; and professional painters like Ralph Treswell, who were much closer to the mechanic of the future than to the learned surveyor who featured in most of the early tracts on surveying.397 Several of

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387. Ralph Agas, *A Preparative to Plattinge of Landes and Tenements for Surueigh* (London: Thomas Scarlet, 1596), 16, quoted by Harvey, “Estate Surveyors,” 43, that is, in modern English, how compelling (e.g., as evidence) a boundary drawn on a map (“plat”) may be in the future because of the precision with which a hedge’s course could be drawn to a hair’s breadth, having been measured to a degree of a 360° circle.


390. In about 1616, Norden estimated that the cost of a mapped survey was about twice that of a written survey. See Lawrence, “John Norden,” 54–55.


394. The estate maps of the Spencer family from Althorp, now in the BL, Add MSS. 78108–78155, well illustrate this point.


these people, including Saxton, Symonson, and Norden (county and compilation mapping), Agas (town maps), Treswell (regional mapping in Brittany), and Richard Norwood (colonial mapping in Bermuda), were also active in other cartographic spheres and their practice as land surveyors was doubtless to varying extents influenced by their experience in these wider fields.

Bendall has established that surveyors learned their techniques from surveying texts, apprenticeships, and at school.\(^{399}\) Research by Bennett has shown, however, that the treatises, particularly those advocating the use of complicated scientific instruments and condemning the use of the plane table, had a limited effect on actual surveying practice.\(^{399}\) In 1609, Sir Robert Johnson, an experienced practical surveyor as well as administrator, observed that “though the printed book [probably Norden’s *Survior’s Dialogue*, 1607] hath in it worthy directions not to be excepted against and the use of a perfect surveior thereby intended, yet it will appear that amongst the 36 surveiours or more [of the crown lands] of particular Counties not one of them hath ever laboured to perfect his understanding concerning his Office.”\(^{400}\) Although by 1640 most surveyors had a smattering of geometry and utilized the plane table, a simple form of theodolite, and the circumferentor,\(^{401}\) some continued to rely on the chain and compass into the nineteenth century and a few even avoided angular measurement entirely.\(^{402}\) If the theodolite had more champions among intellectuals such as Digges and Agas, and the plane table could only count on Norden and Lucar’s support, it would seem that the plane table, for all its unreliability and susceptibility to the elements,\(^{403}\) was the more often used because it was easier to operate.

The numerous surveying tracts that spilled from the presses after 1580 are, in part, a testimony to the sudden growth in the number of land measurers and to the competition for employment among them. So intense did this competition become that some, including Agas, took to selling printed advertisements onto posts in the City of London.\(^{404}\) The tracts are filled with criticisms of fraudsters. The latter are illustrated in the frontispiece to Aaron Rathborne’s influential book, *The Surveyor*, in which a surveyor using a theodolite is shown trampling on a fool and a faun representing fake surveyors.\(^{405}\) This dig at competitors could sometimes be more than an author’s ploy to sell his books. Even as scholarly and thoroughly reputable a surveyor as Thomas Langdon was not above concealing sloppy surveying beneath the fine, although standardized, workmanship of an engrossed map.\(^{406}\) In fairness, however, the pressure of work and the relatively short period each year when work in the field was possible for someone like Langdon (who probably used a plane table rather than a theodolite)\(^{407}\) must have made such short cuts inevitable.

Surviving local maps suggest that from fairly early on surveyors shared the same broad conventions when it came to coloring their work.\(^{408}\) William Folkingham in his *Fevdigraphia* (1610) advocated that colors should be used to differentiate the land belonging to different owners or tenants as they should indeed for the various kinds of land use. “Arable for Corne may be dashed with a pale Straw Colour compounded of Yelllow Oker and white leade or of Pincke and Verdigreece.” Meadows, he suggested, are best rendered in a light green and pastures in a deeper green. Heath and fens should be distinguished with an even

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408. The following sentences are by William Ravenhill.
deeper green made from “Yellow and Indico” and trees of a “sadder Greene.” Folkingham considered it satisfactory to paint the “Verges only of Land Modulets.” Under the title “may also be rainged the Lordes-Coate with Crest and Mantell,” 409 Rathborne urged his readers to “expresse your houses, building, woods, rivers, waters, wayes, and all other remarkeable things in their due proportion perpectively; not placing your houses and trees every way, whereby here the tops and there the bottomes shall seeme standing upwards, as is usually accustomed.” 410 This contributed to the tidiness, uniformity, and perhaps prettiness of the end product; however, it left the surveyor free to select and structure the content as he and his patron wished—if necessary in contradiction to what may have been the sordid reality in terms of unkempt fields and squalid farm buildings and in disregard of the physical relief of the terrain, which was almost always depicted as flattened.

ASPECTS OF THE ESTATE MAP

Maps of Estates and Estate Maps

The first local maps drawn throughout to a consistent scale and not intended for production in a court of law were produced in the mid-1570s, the earliest known example being a plan by Ralph Agas and George Sampson of 1575 showing West Lexham in Norfolk. 411 In the past when such maps have been discussed, they have been lumped together under the term “estate maps.” Harvey has defined the estate map as “a plan of landed property, drawn not for a particular occasion or for some closely defined purpose but for general reference.” 412 This definition is an oversimplification. Closer analysis reveals that many of the early large-scale maps of estates drawn to a consistent scale were commissioned to serve a variety of quite distinct and specific purposes. About one-third of the large-scale maps produced by Saxton after 1582 were not estate maps in Harvey’s sense but relate to particular circumstances and for specific purposes that would have had a major influence on its appearance and content. Because, as Bendall has observed, the explanatory written documents have frequently been separated from the maps, this context has often been lost, but it would be wrong to deduce that there never was any or to evaluate a map purely on the basis of its content. 413 Bendall’s analysis of the estate maps of Cambridgeshire revealed that many were commissioned for specific occasions, such as the sale or purchase of the estate; the letting or the renewal of a lease; the accession of a new, energetic owner or college head or of a minor whose guardian needed to familiarize himself

409. W. Folkingham, Fovdigraphia: The Synopsis or Epitome of Surveying Methodized (London: Printed for Richard Moore, 1610), 56–58. This seems to be echoing accepted practice on those maps where land use was shown. The coloring of an anonymous map of Chilton in Suffolk (close to the Cordell estate at Long Melford) of 1597 (BL, Add. MS. 70953) seems broadly to follow these principles.


411. Holkham Hall Estate records 87a (photograph BL 188.n.1[10]). In the same months another Norfolk squire, Sir Nicholas Bacon, who was also lord keeper, a patron of Leonard and Thomas Digges, and, indeed, the dedicatee of the Pantometria, was preparing a map of his Stifkey estate, which, given his background and interests, may well have been to a consistent scale (Bendall, Dictionary, 1:19).


413. Evans and Lawrence, Christopher Saxton, 79–137; Peter Eden remarked in the context of Saxton’s estate maps that “the courts never seem[ed] to be far away” (“Three Elizabethan Estate Surveyors,” 77).


416. Emphasized as early as 1933 in the seminal article by Darby, “Agrarian Contribution,” 529–35.


with the lands; prior to or immediately following a program of land improvement; or at the time of a dispute over boundaries.420

Estate Mapping and the Crickhowell and Tretower Atlas

Even when the purpose of the map seems at first glance clearly to fit Harvey’s definition—that is, to depict the extent and land use and to distinguish the tenancies of an estate for general reference—the reality may be a little different. The estate atlas of the lands of William, third Earl of Worcester in Crickhowell and Tretower, Breconshire, surveyed in 1587 by Robert Johnson421—a surveyor who was later to represent Monmouthshire in the House of Commons, win a knighthood, and to be closely involved in the resurveying of the royal estates under James I422—may serve as an example. In appearance it would seem to be a typical atlas of estate maps, of which this is reputedly the earliest known. The survey does not seem to have been occasioned by any particular event (although it may have been). To this extent it accords with Harvey’s definition. The forty-six maps are handsome but ultimately functional (plate 67). Like the maps of the nation’s defenses and harbors prepared for the monarch or the Privy Council’s eyes, they lost nothing of their functionality through being decorative and elegantly presented.

In the style of the traditional survey, there is a written account of the boundaries and long lists of the names of tenants, with the dates and nature of their leases, the amount of land they each held (in terms of fields and closes as well as in acres), and the dates when rents and

distinguishes between the number of acres leased according to manorial documents and the number of acres actually occupied by tenants as assessed by Johnson.423 The information was, necessarily and traditionally, as much based on documentary evidence from the archives and statements given on oath at manorial courts of survey by older residents as on measurement in the field.

The maps supplement and amplify the text, though, as with some other early estate maps, they may—out of negligence or to improve clarity or eliminate the unsightly—omit some of the buildings or agricultural divisions mentioned in the text.424 They are executed at the uniform scale of four chains to the inch (1:3,168)—which seems to have been a popular and possibly even the standard scale on these early local maps425—apart from the overall index map of the whole manor of Tretower, showing the village with the church and castle. The boundaries of the estate and of the individual fields and closes are shown with particular care, with the neighboring landowners named. Buildings of all sizes are shown, with the more important ones apparently being individualized. Color and signs, linked to the text, are used to distinguish tenants.426 The maps would have well served what seems to be their main purpose: that of identifying the lands occupied by particular tenants and the rents and fines paid or (quite often) due from them as a means for recovering land that had slipped from the Earl’s hands over time and/or of ensuring the duties (including dues in kind) were payable. The text also Annotation: 423. Although the difference could lie in the nature of the acres listed (that is, statutory and local) this reflects the words of Ralph Agas, perhaps the most vociferous early propagandist for estate mapping, writing in about 1596, that the duty of the surveyor was “to plat [lands] . . . and thereupon to retrieve, and beat out all decayed, concealed, and hidden parcels thereof, fitting the same to their evidence, how ancient soever; although blemished, obliter, and very much worn; besides the episodic and reviving of Rents, Customs, Liberties, Privileges, Etc” (BL, Lansdowne MS. 165, fol. 95, quoted by Darby, “Agrarian Contribution.” 531–32, and see McRae, God Speed the Plough, 177).


426. I am grateful to Catherine Delano-Smith for pointing out that the form of the signs are probably derived from the unique marks branded for recognition purposes onto the individual tenant’s cattle and sheep.

427. I am particularly grateful to Robert Davies of the National Library of Wales for double-checking this and the scale of the maps in the atlas for me.

428. For the following paragraph, see Harvey, “English Estate Maps,” 37–40.

429. See figure 54.22.

430. See, for instance, the anonymous plan of “The Mannour of Coulthorpe with ye Demesne of Lundhouse belonging to Richard Walmesley Esqre” (now Cowthorpe, North Yorkshire), datable to 1663–64 (BL, Add. MS. 78905) and almost totally bare of text, with no information on tenancies, boundaries, or land use but with a pretty view of the village and—most prominently—the arms of Richard Walmesley and his wife Mary nee Fromod.


The maps supplement and amplify the text, though, as with some other early estate maps, they may—out of negligence or to improve clarity or eliminate the unsightly—omit some of the buildings or agricultural divisions mentioned in the text. They are executed at the uniform scale of four chains to the inch (1:3,168)—which seems to have been a popular and possibly even the standard scale on these early local maps—apart from the overall index map of the whole manor of Tretower, showing the village with the church and castle. The boundaries of the estate and of the individual fields and closes are shown with particular care, with the neighboring landowners named. Buildings of all sizes are shown, with the more important ones apparently being individualized. Color and signs, linked to the text, are used to distinguish tenants. The maps would have well served what seems to be their main purpose: that of identifying the lands occupied by particular tenants and the rents and fines paid or (quite often) due from them as a means for recovering land that had slipped from the Earl’s hands over time and/or of ensuring a financial return from the leased lands in the future. The atlas is susceptible to a variety of further uses, but in this case, beyond distinguishing woodland from open land, land use is not one of them. Thus even this otherwise precocious but typical atlas of estate maps proves on closer examination not to meet Harvey’s criteria for an estate map in one major respect.

Written Surveys, Accompanying Texts, and Stand-Alone Maps

The balance between the graphic and the written was enormously variable from the start. Written surveys, lacking maps, continued to be created. Several of the estate maps by, for instance Ralph Agas, seem merely to be supplements to the written survey or terrier, with text being kept to an absolute minimum on the map itself, even to the extent of symbols, linked to the written survey, being used to represent the names of the tenants, as in the Crickhowell and Tretower atlas. Instead special attention is bestowed on the boundaries and physical features that maps could convey particularly effectively.

In other cases there was a more even balance, but the map, furnished with field names, acreages, and the names of tenants and neighbors, continued to be accompanied by a written terrier, even if it simply tabulated the written information on the map in a different way. At the same time one can find a single map standing on its own, as does Agas’s map of Toddington, its surface sometimes crowded with text. In other cases, again, the maps were almost totally denuded of text, lacked written terriers, and were presumably intended simply for display. By 1650 all these types of estate survey coexisted.

Drafts and Finished Maps

As Harvey has remarked, the appearance and format of these large-scale local maps varies enormously, again, to some extent, reflecting their differing intended purposes. There are handsomely produced large atlases of estate maps, like the Crickhowell and Tretower atlas. There are multisheet estate or manorial maps like Israel Amyce’s eight-sheet map of Sir William Cordell’s estate at

Crickhowell and Tretower.

The maps would have well served what seems to be their main purpose: that of identifying the lands occupied by particular tenants and the rents and fines paid or (quite often) due from them as a means for recovering land that had slipped from the Earl’s hands over time and/or of ensuring a financial return from the leased lands in the future. The atlas is susceptible to a variety of further uses, but in this case, beyond distinguishing woodland from open land, land use is not one of them. Thus even this otherwise precocious but typical atlas of estate maps proves on closer examination not to meet Harvey’s criteria for an estate map in one major respect.
Long Melford in Suffolk of 1580. Most are on single sheets and show a single estate or manor or, where the estate was scattered, a landscape with fields colored according to tenant or owner. By the mid-seventeenth century groups of scattered fields were frequently gathered onto a single sheet in defiance of geographical reality, intentionally or unintentionally giving the impression of a single, large, and implicitly well-managed estate. They well illustrate Harvey’s observation that “what such a map . . . has to tell us is not so much how the landowner ran his estate as how he perceived it.”

Cartographers like Ralph Agas, John Norden, various members of the Walker family in Essex, and Samuel Pierse and his son Mark, specialized in the production of highly pictorial maps which, although not compromising their mathematical integrity, made bold use of color and included depictions of particular houses or the activities of the different seasons. Other cartographers, such as Christopher Saxton or Ralph Treswell by contrast, produced estate maps of utter simplicity, which made the most of the clarity of line by foregoing bold color and almost any decoration.

The production of these finished maps, “engrossed” with fine color and skilled penmanship on vellum, was preceded by much plainer preparatory maps on cheap paper. These drafts seem usually to have been surrendered to the patron by the mapmaker with the finished map. They were presumably retained for reference in the all-too-likely event of a challenge to the acreages given on the engrossed versions, but it is possible that in some cases they may also have been used in day-to-day administration by the commissioning family’s stewards. Even though they did not always have all the written information contained in the polished version, were awkward in format, sometimes consisting of irregular-sized sheets that had been pinned together, and lacked the finished map’s often-informative embellishments, many may well have been used and annotated to the point of destruction. They were then sometimes replaced by the polished versions, particularly if they were not too large, which were relegated from the owner’s library to his agent’s office and then themselves annotated to reflect the changed realities. This practice would account for the low survival rate of the early drafts, although many may still lie in archives waiting to be discovered.

**Mapping the Towns, 1550–1611**

The Continental Inspiration

If estate mapping seems to have been particularly characteristic of and perhaps unique to England and its colonies, a consequence of the growing power of the great landowners in English society and the country’s relative domestic tranquility, urban mapping in Tudor and early Stuart England was largely a story of emulating foreign influences. This emulation was perhaps a consequence of the enormous political and social importance of the city and city state in Germany, Switzerland, and Italy compared to the relative insignificance of all but a handful of English cities other than London, important though they were in a local context as foci of civic patriotism and centers of social life as well as of trade and industry.

The direct links with the German-speaking world of some of the earliest-known creators or patrons of English urban maps are striking. Reymier Wolfe, who, according to William Harrison, writing in 1577, had been creating a series of town plans of English episcopal seats at the time of his death in 1573, was himself a German from Strasbourg. The physician William Cuningham, the...
The creator of the earliest dated printed English town plan, of Norwich (1558), and the antiquary John Hooker, who was responsible for the oblique view of Exeter in 1587, were graduates of Heidelberg and Cologne universities, respectively. There is strong circumstantial evidence that it was German Hanse merchants, resident in London, who commissioned the Copperplate map of London, of about 1557–59 (fig. 54.16) of which only three of the original plates are now known. In addition, one of the most prolific and influential of the English Tudor urban mapmakers, the herald William Smith, spent eight years in Germany, and it is possible that he may have been working on the plan while in Germany. I am most grateful to Mr. Champion for his generosity in providing me with this important new biographical information prior to its publication by him. For the latest published discussion of the map of 1558, see Raymond Frostick, The Printed Plans of Norwich, 1558–1840 (Norwich: Raymond Frostick, 2002), 1–4; for the plan of Exeter, see W. L. D. Ravenhill and Margery Rowe, “A Decorated Screen Map of Exeter Based on John Hooker’s Map of 1587,” in Tudor and Stuart Devon: The Common Estate and Government, ed. Todd Gray, Margery M. Rowe, and Audrey M. Erskine (Exeter: University of Exeter Press, 1992), 1–12, esp. 2. In the 1540s Hooker had spent some time in Strasbourg and elsewhere in Alsace, one of the liveliest centers of German mapmaking. His association with the revision of Holinshed’s Chronicle would have brought him into contact with William Harrison and through him, he may have seen Wolfe’s town plans. As Ravenhill has argued, as town chamberlain Hooker was almost certainly in contact with Saxton at the time, in 1575, when the latter was creating his map of Devon.

Fig. 54.16. Copperplate of the Anonymous Copperplate Map of London, Ca. 1557–59. Copperplate of sheet 3, original in Dessau, showing vicinity of St. Paul’s (image reversed).

years as a tavern-keeper in the late 1570s and early 1580s in Nuremberg, and indeed mapped that city, although his earliest town survey, of Bristol in 1568, preceded his German sojourn.443 The Germanic-Netherlandish influence was plain from the appearance of the resulting depictions. Whether profile views, of the sort said to have been preferred by William Smith,444 oblique (or bird’s-eye) views, or plan views, the prototypes had all appeared earlier on the north European mainland. Italian-style ichnographic town plans seem to be virtually unknown in Tudor and early Stuart England, with the exception of the Portsmouth plan of 1545.445 In this context, Cuningham’s plan of Norwich of 1558 is particularly illuminating. It was intended to illustrate the Ptolemaic concept of “chorography,” or local mapping, and simultaneously to demonstrate what could be achieved through the use of triangulation: theories that had been popularized in the Netherlands. The image of Norwich is also an example of the transference of Germanic-Netherlandish ideas to an English environment. The woodcut, as opposed to copperplate, medium was characteristically German. The arrangement on the page of the image of Norwich bears strong resemblances to the Jörg Seld/Hans Weiditz map of Augsburg of 1521, the earliest-known plan view to be produced north of the Alps.446 The arrangement and gestures of the figures in the foreground, although almost stock items on early town views and plans, seem to have been modeled on those in Hans Lautensack’s view of Nuremberg from the east of 1552,447 (although the depiction of the plane table and sun dial seem to have been Cuningham’s idea), whereas the position in the clouds and the posture of Mercury above the plan seem to owe much to Cornelis Antonicz’s portrayal of Neptune on his 1544 plan view of Amsterdam.448 As Skelton pointed out, Speed’s choice of paces as the measurement unit for the town plans that he surveyed is also significant. The pace was rarely used in England, being more commonly associated with the Netherlands, where it had been adopted by Deventer for some of his urban surveys.449

Still more evidence of continental influence can be seen in the choice of engravers for the English plan views, even after allowance has been made for the fact that the majority of “English” engraving in the sixteenth and early seventeenth centuries was in foreign hands. The Copperplate map of London was engraved by a Flemish engraver, whether an anonymous one in Antwerp or, as has been suggested, Thomas Geminius working in London,450 and Peter Muser, presumably a German, collaborated with Augustine Ryther in engraving Hamond’s nine-sheet map of Cambridge of 1592. Christopher Schwytzer, who probably came from Zurich, engraved not only John Norden’s little plan of Chichester that appeared in the corner of his map of Sussex in the relevant Speculum volume (1595), but also Matthew Patteson’s perspective view of Bury St Edmund’s in 1590.451 Lastly, it was Remigius Hogenberg, the brother of Frans Hogenberg, who engraved John Hooker’s oblique view of Exeter. Although the initial contact between Hooker and Hogenberg, the engraver of Saxton’s map of Devon, was almost certainly made through Christopher Saxton, Remigius’s relationship with one of the principal creators of the Civitates orbis terrarum, which enjoyed considerable popularity in England, is likely also to have been a factor in Remigius’s selection.

The work of Braun and Hogenberg provided an inspiration for the urban images created by John Norden and John Speed, if not by William Smith, and encouraged William Harrison in 1577 and Norden in 1591 to propose the creation of an English equivalent. Yet it is also the case that the work of Smith, Norden, Speed, and the other English makers of town plans (such as Richard Lyne, Ralph Agas, and John Hamond) provided Braun and Hogenberg with material for several of the plans of English towns in their books, even if Frans
Hogenberg himself also created a number of English town views.\footnote{452}{Smith, “Enduring Image,” has most recently charted the complicated relationships between these images and their creators and copiers. For the sources of Georg Braun’s and Frans Hogenberg’s images, see also R. A. Skelton’s “Introduction” to the facsimile of their Civitates orbis terrarum, “The Towns of the World,” 1572–1618, 3 vols. (Cleveland: World, 1966), I:VII–XXIII.}

**OFFICIAL TOWN PLANS**

After 1550 English cartographers brought out an increasing number of plans of towns in England and abroad. Although the distinctions are on occasions blurred, two broad groups can be distinguished: the official and administrative plans, which were usually manuscript, and those of a commemorative, propagandistic, or antiquarian nature, meant for illustration or display, which were sometimes printed. Almost all, however, regardless of intended purpose, were handsomely produced.

Ralph Agas was distinctly out of step with many of his contemporaries when in his *Preparative* of 1596 he advocated not only that theodolites rather than plane tables be used for urban surveys\footnote{453}{Bendall (“Draft Town Maps,” 32 and 35) has come across the plane table and chain.} but also that the primary objective of such plans would be administrative or, in his words, that there was no point “in setting out a Cite, Borough, and Towne, except you so lay out the streets, waies, and allies, as may serue for a iust measure for pauing thereof.”\footnote{454}{Those concerned with the administration of the country, however, did share his views and continued to commission urban plans. Such strategically important towns as Portsmouth (the home of Richard Popinjay), Plymouth, Carlisle, and Berwick continued to be depicted throughout Elizabeth’s reign as their harbors and fortifications were improved to meet changing needs and threats.\footnote{455}{Local authorities that wished for government support also felt that their pleas to the Privy Council would fare better if accompanied by maps and plans. Some, like the surviving plans of Dover from the 1580s and 1590s (when the problem of the blocking of the harbor by shingle was finally solved), were based on fresh surveys.\footnote{456}{Others, like the animated mid- or late-sixteenth-century depiction of Great Yarmouth now in the BL, may have been copied from an earlier original.}}

Colonial policy led to the production of plans of Irish towns (although fortresses continued to be the main preoccupation well into the reign of James I)\footnote{458}{The exigencies of foreign policy also led to the production of plans of towns in France and the Netherlands, be they those that English forces were besieging (such as Rouen and Groningen) or the “Cautionary Towns” in the northern Netherlands, like Flushing. These had been surrendered to Elizabeth by the leaders of the Northern Provinces of the Netherlands as pledges for the repayment of the loans and other assistance given them by Elizabeth in their struggle against Spain. The siege maps tended to be simple, even crude, as their sole purpose was to convey up-to-date information (even though Burghley retained them as town plans for future use).\footnote{460}{The plans of the Cautionary Towns were intended to seduce as well as to inform, as the jewel-like execution of Robert Adams’s beautiful plans of Flushing in 1585 demonstrates.\footnote{461}{Much the same was true of Baptista Boazio’s oblique views, both hand-drawn and engraved as illustrations to written accounts, of the Spanish towns in central America (such as Santiago and San Domingo) that had been plundered by Francis Drake in the same years.\footnote{462}{Individuals and corporate institutions also began to commission town maps for administrative purposes after 1550. The probable prototype of the plan of Cambridge that was to be engraved by Richard Lyne in 1574 was sent}}

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by the vice-chancellor, Andrew Perne, to Lord Burghley to illustrate the advantages, particularly in averting outbreaks of the plague, that would follow from the proposed diversion of the River Cam and the scouring of the King’s Ditch (fig. 54.17). Numerous towns and villages, from the fairly large, like Chelmsford, mapped by John Walker in 1591 (fig. 54.18), to small villages like Toddington in Bedfordshire, mapped by Ralph Agas ten years earlier, appeared on estate maps, sometimes with information about ownership and the nature of tenure. Very possibly inspired by the proven utility of the plans that they had been commissioning of their rural estates from the mid-1570s as well as by architectural plans drawn to scale, corporate bodies like St. Bartholomew’s and Christ’s Hospitals and the Clothworkers’ Company in London began commissioning Ralph Treswell, who was personally deeply involved in municipal affairs, to create detailed plans of groups of properties and of streets that they owned inside the City. These plans were used as aids in assessing rentals following the grant of new leases, in planning developments, and in protecting their legal rights in case of dispute (fig. 54.19).

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464. Schofield, London Surveys; Etherton, “Treswell’s Association with St Bartholomew’s Hospital,” 103–17; and Peter Barber, “A City for Merchants,” in Tales from the Map Room, 134–35. It is tempting to speculate that, given its own experience of the utility of mapmaking, the chartmaker Martin Llewellyn’s cartographic skills may have been a consideration when he was employed as Steward by St. Bartholomew Hospital in 1599. He was certainly engaged in copying maps for the hospital later in his career. See Tony Campbell, “Atlas Pioneer,” Geographical Magazine 48, no. 3 (1975): 162–67, esp. 167.
EXPRESSIONS OF CIVIC PRIDE

The originals of several Tudor town plans or oblique views that are now to be found in collections of predominantly administrative maps, like the view of Shrewsbury in the Burghley-Saxton atlas, could well have been commissioned for reasons of civic patriotism and antiquarianism. Turner has pointed out that the vignettes of several small towns in the Midlands, to be found in late-sixteenth-century tapestry maps, are based on direct observation and may well derive from other locally commissioned maps and views that never appeared in printed form, being meant for local consumption and enjoyment. What

465. This has been suggested by Harvey, Maps in Tudor England, 76. The view of Shrewsbury (BL, Royal MS. 18.D.III, fols. 89v–90) is reproduced on 70–71. For another example, see the plan of Great Yarmouth, p. 1651, note 457.

466. Hilary L. Turner, “‘This Work thus Wrought with Curious Hand and Rare Invented Arte’: The Warwickshire Sheldon Tapestry Map,” Warwickshire History 12 (2002): 32–44. I am most grateful to Hilary Turner for her kindness in allowing me to read the typescript of her article before publication.
FIG. 54.19. RALPH TRESWELL, PLAN OF LONDON PROPERTY, 16–21 FLEETE LANE, 1612.  
Size of the original: 49.4 × 37 cm. Photograph reproduced by courtesy of The Clothworkers’ Company, London (Clothworkers’ Company Plan Book, fol. 47).
was probably a map of Manchester—now lost—created by Christopher Saxton in July 1596 through the mediation of John Dee seems to have been commissioned for similar reasons by Sir Henry Savile. Savile was a noted antiquary with a lively interest in mathematics and perhaps the recipient of many of the originals of John Speed’s town plans, which are now in Merton College.467 It is to these other plans, created for nonadministrative but often no less utilitarian purposes, that I shall now turn.

William Cuningham’s depiction of Norwich in 1558 has been acclaimed as the first accurate printed representation of an English town, in this case a plan view.468 Yet in the text accompanying the view Cuningham wrote that “Chorographie consisteth rather in describing the qualitie and figure, then the bigness and quantitie of any thinge,”469 a strange statement to make if mathematical accuracy had been his sole objective. Indeed, Champion has recently pointed out that several of the buildings depicted on the image were no longer in existence in 1558, and may indeed have been copied from an earlier plan of the city, perhaps of the late 1530s, that is now lost,470 in the same way that Speed later embellished his plans of Southampton and Gloucester with town walls that no longer existed.471 In both cases the intention was presumably to go beyond the existing reality to convey a sense of the underlying “qualitie” of the town, which was further enhanced in the case of Norwich by the depiction of Mercury, the god of commerce, above the town and, at a spiritual level, by the indication of the place where religious martyrs were “customablie burnt” for their faith.

A similar spirit of civic pride and antiquarianism is to be found in most of the other printed town plans produced between 1558 and 1612. Recent research has suggested that the large Copperplate map of London, influenced by humanists attached to the court of Philip and Mary, notably George Lily, aimed at creating a flattering image of the capital that associated its wealth, based on the seaborne wool trade,472 with royal as opposed to merchant power. As a result, the halls of the livery companies, although depicted, were not named (instead being given the names of the monastic foundations and churches that had been suppressed a generation earlier), whereas the royal barge was depicted at the very center of the map.473 This emphasis was altered, to one of civic pride based on the city’s antiquity, in the legends on the large woodcut plan, the so-called Agas map created in the 1560s that was derived from the Copperplate map.

Despite its utilitarian origins, Lyne’s map of Cambridge in its final form illustrated John Caius’s Historiae Cantebrigiensis Academiae ab urbe condita, a text that argued that Cambridge University had been founded earlier than Oxford University. The precision and elegance of the beautifully colored—and expensive—plan and the beauty of the colleges depicted on it emphasized what Cuningham would have called the town’s “quality and figure.”474 Oxford could, of course, give as good as it got, and four years later Ralph Agas created a map of Oxford (1578) at a scale of 40 inches to the mile (about 1:1569) that was engraved and published in eight sheets ten years later by Augustine Ryther.475 Cambridge retaliated four years after that with John Hamond’s nine-sheet plan of 1592, again engraved by Ryther, with the assistance of Peter Muser, this time at a scale of 60 inches to the mile (about 1:1056).476 Text on both plans emphasized their superb mathematical accuracy, which led Ravenhill to claim that “with these two maps . . . the portrayal of towns, incorporating the third dimension, reaches its high-

467. Evans and Lawrence, Christopher Saxton, 100. Saxton’s other (surviving) town plan, of Dewsbury, seems to have been created in a legal context (pp. 111–12, and reproduced in Tyacke and Huddy, Saxton and Tudor Map-Making, 50). See also Bendall, “Draft Town Maps,” 41–42.

468. Elliot, City in Maps, 40–41, and Harvey, Maps in Tudor England, 73–74.

469. Cuningham, Cosmographical Glasse (1559), 7, quoted from Skelton, “Tudor Town Plans,” 118. The words specifically refer to Ptolemy’s insistence that “chorography” would be pictorial rather than mathematical (which was reserved for the depiction of larger areas), but the words “quality and figure” had broader cultural connotations in sixteenth-century England.

470. I am grateful to Matthew Champion for sharing the conclusions of his unpublished research on Cuningham and his map of Norwich (University of East Anglia, 2002). He also gave a paper on the same subject as part of the Maps and Society lecture series at the Warburg Institute in London in 2003.

471. Delano-Smith and Kain, English Maps, 192, and Skelton, “Tudor Town Plans,” 115. This interpretation would remain valid even if Cuningham had simply copied the whole of a now-lost Henrican plan of Norwich of ca. 1545, knowing it to be obsolete (as Matthew Champion has also suggested).

472. The tenterfields, where new cloth was dried, to the north and the River Thames to the south are both shown enormously out of scale.


474. Figures 34.17 and 57.7; Harley, “Meaning and Ambiguity,” 29–30 and pl. 7; Harvey, Maps in Tudor England, 16; Delano-Smith and Kain, English Maps, 191; and Tony Campbell, Early Maps (New York: Abbeville, 1981), 75 (color). It is recorded that the copperplate for the map cost thirty shillings, whereas Lyne was paid twelve shillings for engraving and a further two shillings for coloring the maps. Lynam, “English Maps and Mapmakers,” 59.


est point of perfection . . . using a technique which . . . seems not to have been surpassed even in our own time.”

John Hooker’s map of Exeter (1587), of which the original manuscript and examples of the proof and two slightly amended further states survive, was different in one important respect, being an oblique view, and hence drawn to a varying scale, rather than a plan view (fig. 54.20). Its purpose, however, was the same as that of the other printed Elizabethan town plans, as was to be expected of its antiquarian creator, Hooker. The iconic status that the image soon attained is underlined by its later reuse as the centerpiece for a painted screen of uncertain date.

THE MINIATURE PLANS OF WILLIAM SMITH,
JOHN NORDEN, AND JOHN SPEED

Although smaller in size, the miniaturized town views and town plans of William Smith, John Norden, and finally John Speed should be seen in the same antiquarian cultural context. The historical nature of Norden’s Speculum volumes and Speed’s Theatre of the Empire of Great Britaine, which was intended to accompany his History of Great Britaine, and the way in which both authors appeal to local patriotism, is self-evident. But Smith’s Particular Description of England with the Portraiture of Certaine of the Cheifest Citties & Townes, containing fif-

477. Ravenhill, unpublished manuscript. Planimetric investigations undertaken by David Smith, however, while confirming the amazing accuracy of the Cambridge map have revealed an error ratio of between 12 percent and 17 percent on the Oxford map (David Smith, “The Earliest Printed Maps of British Towns,” Bulletin of the Society of Cartographers 27, pt. 2 [1993]: 25–45, esp. 34).


479. Occasionally one can find copies that are bound together as, for instance, in the splendidly colored example once owned by Dr. Eric Gardiner and currently on loan to the BL (Maps Loan 1742).
teen town views or plans and the plan of Chester (to be found in his description of his home county of Cheshire), although ostensibly less historical, also appeal to local patriotism and cite history in the process. In addition, Smith’s profile view and plan of Nuremberg occur in a work that argues that the historical success of that German free city made it an apt model for English towns.\textsuperscript{480}

Given this context it is not surprising that all three authors chose the more emotive pictorial plan view (and in Smith’s case also town profiles or panoramas) rather than the drier, seemingly more practical ichnographic plan as the medium for conveying information visually. Smith and Speed (we have no information about Norden’s town surveys) seem to have worked quickly, usually spending no more than a day in each town, although larger towns took a little longer: Smith spent two days in Bristol, and Speed spent three days in Winchester.\textsuperscript{481}

The first person in the field was Smith, with his plan views of Bristol and also, it would seem, Canterbury, of 1568, and his later plans of Bath and of Chester.\textsuperscript{482} Only five of the fifteen urban depictions in his General Description were plans, however, and those of Norwich and Cambridge were copied from Cuningham and Lyne, respectively. Norden intended to create a book of images of English towns, but in the end only one freshly surveyed plan of Chichester (1595)\textsuperscript{483} and derivative plans of London and Westminster illustrating his map of Middlesex (1593) appeared in print. His remaining town views and plans, of villages and small towns, such as Higham Ferrers, Peterborough and Northampton in Northamptonshire,\textsuperscript{484} Launceston in Cornwall (1604),\textsuperscript{485} and Windsor in Berkshire (1607), remained in manuscript.\textsuperscript{486}

It was the inset plan of Chichester on Norden’s map of Sussex that is said to have given Speed the idea for the inset maps that were to appear in profusion on his county maps.\textsuperscript{487} In the corners of the county maps in the Theatre of the Empire of Great Britaine (1612), Speed finally created a miniature British version of Braun and Hogenberg’s town books, with seventy-two inset town plans. No less than fifty-four of these were based on Speed’s own surveys. The others derived from Braun and Hogenberg, large-scale printed town plans, the plans of Smith and Norden, and manuscript maps of such towns as Edinburgh and Newcastle in the collection of Sir Robert Cotton.\textsuperscript{488}

\textbf{Icons, Emblems, and Decoration, 1550–1611}

\textbf{Maps at Court}

By the last third of the sixteenth century, maps had become firmly embedded in the physical and psychological environment of most educated English people. If in the 1540s maps were displayed—as murals, on painted cloths, and accompanied by paintings and marvels of all kinds—only at court and in the homes of a select group of courtiers and ministers,\textsuperscript{489} within twenty years wall maps had become commonplace in the homes of merchants and the gentry as well as the aristocracy.\textsuperscript{490} Cheaper woodcut versions of

\textsuperscript{480} Smith’s works containing town plans are his well-known “Particular Description of England . . .” dated 1588 but containing plans of 1568, with additions to 1603 (BL, Sloane MS. 2596; a facsimile edition, with an introduction by Henry B. Wheatley and Edmund W. Ashbee, appeared as William Smith, The Particular Description of England, 1588, With Views of Some of the Chief Towns and Armorial Bearings of Nobles and Bishops [Hertford: S. Austin and Sons, 1879], published by private subscription); his “Description of the Cittie of Norembeg” of 1594 (see note 340), and his “Description of the Covntie Pallatine of Chester Collected and sett downe by W. Smith Citizen of Noremberge” (1585) (Oxford, Bodleian Library, MS. Rawl. B 282). Foreshadowing the volume on Nuremberg, this contains a local (county) map, a panorama, profile, and oblique view of a town, in this case Chester, as well as views of Halton and Beeston. The plan and profile of Chester are also to be found in Smith’s “Visitation of Cheshire” (BL, Harley 1046, fols. 171 and 172). See generally Skelton, “Tudor Town Plans,” 111–12; Delano-Smith and Kain, English Maps, 186–87; Smith, “Enduring Image,” 163–64; Elliot, City in Maps, 39 and 43–44 (although the analysis should be treated with caution); and Harvey, Maps in Tudor England, 75 and 77.


\textsuperscript{482} Smith, “Enduring Image,” 173 n. 17, correcting Wheatley and Ashbee.

\textsuperscript{483} David J. Butler, The Town Plans of Chichester, 1595–1898 (Chichester: West Sussex County Council, 1972), 4–5. The sole surviving example is now in the Royal Geographical Society, London.

\textsuperscript{484} Higham Ferrers illustrates the Speculum volume of 1591 on Northamptonshire now in the BNF (illustrated in Beresford, History on the Ground, pl. 13); Northampton and Peterborough are apparently found in a now-lost later version of the Northamptonshire volume of 1610, dedicated to Sir Christopher Hatton (unreferenced statement in Smith, “Enduring Image,” 166). Norden himself conceded that the depiction of Higham Ferrers was based on an anonymous older plan (Lynam, “English Maps and Mapmakers,” 67).

\textsuperscript{485} In his Speculum volume on Cornwall, for which see Norden, Norden’s Manuscript Maps.

\textsuperscript{486} Survey of the Honour of Windsor, BL, Harley MS. 3749, fols. 5v–6.


\textsuperscript{488} This number is based on Bendall’s addition (“Draft Town Maps,” 37) of Kendal, Peterborough, and Carlisle to the list on the basis of the volume with Speed’s drafts of thirty-three town plans (pressmark D.3.30), which she discovered in the library of Merton College, Oxford. For earlier discussion of the number of “original” Speed town plans—defined by him as those with a scale of paces, although Bendall’s discoveries reveal certain inconsistencies—see Skelton, “Tudor Town Plans”; Brian Paul Hindle, Maps for Local History (London: B. T. Batsford, 1988), 61–67; and Smith, “Enduring Image,” 166. The maps owned by Cotton are now in the BL.

\textsuperscript{489} Barber, “England I,” 42–45.

\textsuperscript{490} See, for example, “Extracts from the Private Account Book of Sir William More, of Loseley, in Surrey, in the Time of Queen Mary and of Queen Elizabeth,” Archaeologia 36 (1855): 284–310, esp. 288–91;
the maps, whether multisheet, like the so-called Agas map of London probably cut shortly after 1561, or single-sheet reductions of larger maps, reached homes still further down the social scale. 491 It is even possible that by the early seventeenth century taverns were decorated with the same cheap sheet maps—albeit mainly printed in the Dutch Republic—that can be seen in Dutch seventeenth-century paintings.

Throughout this period and until the accession of Charles I in 1625, maps continued to play an important part in the display of princely power at court. 492 There is persuasive evidence that after 1540 Henry VIII sought to emulate his fellow European monarchs, who had long had their successes commemorated pictorially, 493 by decorating the walls of Whitehall Palace with several series of mural and panel paintings containing maplike bird's-eye depictions of his triumphs. 494 In addition to utilizing existing paintings—such as that showing the meeting of Henry and Maximilian I at the Siege of Terouanne that had probably been presented by Emperor Maximilian I 495—Henry also commissioned new paintings of past successes, such as the still-surviving depiction of the Field of the Cloth of Gold of 1520 (which explains why he appears there as a middle-aged man, despite his relative youth at that time) and, most importantly, a series showing the course of the siege of Boulogne in July—September 1544. 496 It is likely that Lord Protector Somerset had similar ambitions, and John Ramsay's series of six drawings of the short-lived English triumph at Pinkie Cleugh (Musselburgh) in Scotland in September 1547 may have been intended as drafts for further panel and mural paintings commemorating the triumphs of Edward VI—and Somerset himself. 497

Elizabeth I was not attracted to such quasi-cartographic painted triumphs, but in other respects she maximized the propaganda potential of maps. In addition to the maps that she inherited from her ancestors, such as those by Girolamo da Verrazzano and Sebastian Cabot, she made politic use of more recent maps in the Privy Gallery at Whitehall Palace. Thus she displayed the world map, showing Drake's circumnavigation of the globe, that Sir Francis himself had presented to her on his return in 1580—but only from about 1590. By then the outbreak of war with Spain rendered irrelevant a diplomatic consideration for Philip II's hurt feelings at Drake's penetration of Spanish colonial waters and his privateering activities. 498 Once on display, the map attracted much attention. Another of Philip's enemies, Henri IV of France, acquired a manuscript copy and commissioned a printed version, embellished with a portrait of Drake derived from the Hilliard miniature. Jodocus Hondius, who was still in England, also published a copy in about 1590, this one containing Elizabeth's arms and portraits of Drake and Cavendish to associate her with the audacious defiance of Spain. In about 1595 he republished it in Amsterdam, with an accompanying commentary in broadside and printed form. In addition, Michael Mercator,
Gerardus Mercator’s grandson, while in London in 1589/90, engraved a silver medal based on the presentation map for private circulation.499

By the reign of James I, according to the testimony of a visitor in 1613, a finely painted example, possibly in manuscript, of John Speed’s four-sheet “Invasions” map of Great Britain engraved by Renold Elstracke of 1603/4 (fig. 54.21) seems to have been on display in the Privy Gallery.500 In many ways it typified a kind of decorative map that had been issuing from the presses of Flemish mapmakers, initially in London, since 1590.501 The most striking feature of these was the border decoration, which often conveyed unmistakable sociopolitical messages, whereas the maps themselves tended to be derivative. The “Invasions” map was a particularly fine example. Its non-cartographic elements depicted the estates of the realm in the corners (that is, the monarch, the lords temporal and spiritual, and the commons in the form of a lawyer), the royal genealogy from William I (culminating in portraits of James I and his queen), and the battles and threats of invasion to which England and Ireland had hitherto been exposed. Cumulatively the map suggested that James, ruling through the estates of the land assembled in the English and Scottish parliaments, would bring an end to the political divisions, wars, and civil strife that had previously plagued Great Britain. In its place James I and the new Stuart dynasty, the legitimate heirs of the earlier monarchs of England and Scotland, would bring peace, security, and political stability to their now united realms, which had hitherto been plagued by political divisions, wars, and social strife. The map formed an element of the propaganda campaign to popularize the concept of a united kingdom that was being masterminded by the new king himself and was expressed in word, picture, and, indeed, on the coinage itself. No wonder it sat well in the gallery of a royal palace, adding a further strand to the messages of royal knowledge and power, and of England’s imperial destiny, contained in the older maps in the same gallery. The map would also have been cheap enough for the aristocrats, gentry, and merchants on whose acquiescence the Stuarts’ rule ultimately depended, to display it in their chambers.

MAPS IN THE COUNTRY

Tapestry Maps

It is rare to be able to document the actual propaganda impact of a map displayed in a gallery as well as one can with the Drake map. There is little doubt, however, that such objectives played a significant part in justifying the considerable expenditure involved in commissioning a display map. One does not need to look far for the patriotic justification for the handsome tapestries depicting the defeat of the Spanish Armada, commissioned by Eliza-

499. Wallis, “Cartography of Drake’s Voyage,” 141–51. Mercator’s silver medal is the only English example of the cartographic medal, which became a common and potent form of propaganda on medals and on silver and copper tokens, particularly in the northern Netherlands during their revolt against Spain.

500. Rye, England as Seen by Foreigners, 165. The reference to “the kingdom of England drawn with the pen and coloured” may possibly be to the manuscript version prepared by Speed in about 1600. The reference may also be to what was probably a pirated version engraved by William Kip and published by Hans Woutneel, who was then working in London, in 1603: the imagery of the Woutneel and the Speed maps is similar. Morgan, “Cartographic Image,” 142 (although Morgan does not identify this particular map); Schilder and Wallis, “Speed Military Maps,” 22–26; and Shirley, Early Printed Maps of the British Isles, 96–98, 103–4, and 106–7.

501. Schilder, “Jodocus Hondius,” 40–43. See also Schilder, Monumenta cartographica Neerlandica, 6:56–57. The earliest example recorded by Schilder was a map of England prepared by Hondius while he was still in London, incorporating portraits of Elizabeth I and an aristocratic and bourgeois couple with allegories of commerce and learning (for one of two known examples, see BL, Maps *1175 [21]).

502. Rodríguez-Salgado, Armada, 248–51. Their appearance has however been preserved in the fine engravings created by John Pine in 1739.

503. Flemish tapestries were generally accepted as being the finest in Europe, and their cost and splendor made them the deluxe gift of the time, as the inventories of Henry VIII and the few surviving tapestries from his collection testify. Several of the most prominent, such as the Hunts of Maximilian (now in the Louvre) and the Battle of Pavia (Capo di Monte Museum, Naples) contained topographically realistic backgrounds. Among the series of twelve tapestries (now in Madrid) of Charles V’s North African campaign of 1535 created by Willem Panemaker from sketches by Jan Cornelisz. Vermeyen (now in the Kunsthistorisches Museum, Vienna), there was one map of the western Mediterranean (see plate 22 in this volume) and another of Tunis and its environs (see Lisa Jardine, Worldly Goods: A New History of the Renaissance [London: Macmillan, 1996], 386–92, pl. 13, and references cited there, and, more recently, Der Kriegszug Kaiser Karls V. gegen Tunis: Kartons und Tapiserien, ed. Wilfried Seipel [Vienna: Kunsthistorisches Museum, 2000]). It is possible that William Sheldon and perhaps even Ralph Sheldon may have seen these when they were first displayed in public at the wedding of Philip and Mary in Winchester Cathedral in 1554; William’s uncle, Nicholas Heath, was Mary’s archbishop of York and lord chancellor (Turner, “Warwickshire Sheldon Tapestry Map”).
FIG. 54.21. JOHN SPEED'S "INVASIONS" MAP, 1603/4. Size of the original: 80 × 106 cm. Photograph courtesy of the BNF (Rés. Ge. DD. 6056).
nal material—particularly as regards town views—and betray the influence of other contemporaries, such as William Smith. They were intended to convey an impression of the prosperity, fertility, and, through paraphrases from William Camden’s Britannia, the antiquity of the counties with which the Sheldon family was associated. The tapestries commemorated their dynastic alliances and gave prominence to the power of their family, friends, and patrons, notably Robert Dudley, Earl of Leicester, through the depiction of their houses. Turner has indeed argued that since the houses depicted, with the exception of Robert Dudley’s, were all of Catholic families with proven records of loyalty to the crown, the tapestries and related items (such as the ornate estate map of their estate in Brailes), while reflecting the family’s Catholic beliefs, were also overt declarations of Ralph Sheldon’s loyalty to Elizabeth I in the years following the Armada.  

Estate Maps

Estate maps were frequently made principally for display rather than for the myriad practical purposes discussed above. Ptolemy himself had drawn attention to the importance of chorography, or the depiction, preferably pictorially, of a locality, as opposed to geography and cosmography, and this had been increasingly emphasized in geographical books published in the second half of the sixteenth century. It was not too much of an extension to regard one’s estate as an example of the smallest unit of chorography and to feel it to be worthy of the same cartographic care as the county, the province, and the country, which had already been the subject of geographic mapping. The increasing familiarity, even of students, with wall maps meant for information but also for display seems to have encouraged the creation of estate maps that were far larger and more splendidly decorated than was necessary for use as a record or as a planning tool. In his Preparative (1596), Ralph Agas was already writing resignedly of making maps of twelve to sixteen skins “for so the owner would have them.” His monster, twenty-sheet estate map of 1581 of Toddington in Bedfordshire, measuring nearly four by three meters, which was originally kept on rollers for easy display in the house of Lord Cheyne (who seems to have been a considerable patron of cartography), provides a good example (fig. 54.22). These grand estate maps, although constructed in accord with the most advanced scientific precepts and containing much useful information, were principally intended to serve social and psychological purposes. Several features that were not necessary for land management were added. Almost always these included elaborate compass roses embellished with fruits, flowers, and curlicues, the use of gold leaf, and increasingly, the heraldic arms of the patron. Buildings of political, social, and historical significance, such as castles, the homes of other landowning families, and churches, are also often accurately depicted, although sometimes they were shown as smaller than the house of the landowner who commissioned the map. William Leybourn pointed out in The Compleat Surveyor (1653) that such plots “being well performed . . . 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, and the quantity of all or every parcel thereof without any further trouble.” By the early seventeenth century Thomas Randolph was writing that

Thou several artists dost employ to show
The measure of thy lands, that thou mayest know
How much of earth thou hast.

The maps were not always or only meant for the private pleasure of the man who commissioned them, however. The more self-confident lawyer like Sir William Cordell or, in a later generation, merchant-turned-landowner like Sir William Courten, and occasionally a member of the older aristocracy like the Earl of Northumberland, commissioned such skilled surveyor-draftsmen

506. There are other seventeenth-century map tapestries, for instance of Middlesex in the Victoria and Albert Museum, London, and of Nottinghamshire, commissioned in 1632 by Mary Eyre of Rampton from tapestry workers who had been made redundant, now in the City of Nottingham Museum of Costume and Textiles (detail reproduced in Delano-Smith and Kain, English Maps, 50), together with later copies of the original Sheldon maps of Worcestershire and Leicestershire, suggesting that several sets of tapestry maps may have been created.
508. See Delano-Smith, “Map Ownership,” passim.
510. I am grateful to Mary Ravenhill for many discussions about compass roses.
511. For instance, Israel Amyce’s plan of the estate of Sir William Cordell in Long Melford, Suffolk. See Bendall, “Pride of Ownership,” 94.
514. Bendall, “Pride of Ownership.”
as Israel Amyce, Mark and Samuel Pierse, Moses Glover, or the Walker dynasty of Hanningfield in Essex to create grand estate maps with colorful landscapes on which the sun always shone, peopled, in the case of the Pierses’ maps, with miniature scenes of ploughing and harvesting (plate 69). They were often adorned with the patron’s arms containing the quarterings, supports, and helm (or, where appropriate, the coronet) needed to recall their ancestry, prestigious connections, past history, and social rank, while an allegorical globe, book, or even flower might make gentle reference to the intellectual accomplishments that they claimed.

Hanging rolled or framed in their entrance halls, galleries, parlors, and great chambers, close to the family portraits, the maps were intended to impress visitors with the power, taste, and knowledge of the person and family who had commissioned them. The maps would thereby rein-

517. Bendall, Maps, Land and Society, 177–84.
518. Cordell’s successor at Melford Hall, Sir Thomas Savage, commissioned a large map of the same Suffolk estates from Mark Pierse in 1613 (Suffolk Record Office, Bury 2130/2). The Earl of Northumberland’s detailed map of the Hundred of Isleworth at a scale of approximately 1:3168 (or, once again, four chains to the inch) “one of the

FIG. 54.22. RALPH AGAS, DETAIL OF ESTATE MAP OF TODDINGTON, CA. 1581.
Size of the entire original: ca. 4 × 3 m; size of the detail: ca. 54 × 63.7 cm. Photograph courtesy of the BL (Add. MS. 38065 H).
force the owners’ place in society, and by extension, support the social hierarchy of which they were beneficiaries. On these maps the landowners became the absolute masters, with their homes prominently and often centrally shown. Royal authority, indeed, in the form of the royal arms found on Saxton’s maps, was usually nowhere to be seen, and lesser landowners and tenants were mere names, quite literally marginalized like the monsters and semihuman creatures on medieval world maps.

Given the changing balance of power between crown and country, as represented by the aristocracy and gentry, as the seventeenth century progressed, the messages embedded in these displays of oligarchic power perhaps corresponded more closely to political and social realities than did those implicit in the show of old master paintings, sculpture, views, and occasional maps that graced the walls of the chambers and galleries of the royal palaces of Windsor, Whitehall, or Hampton Court. One can well imagine the mixture of emotions that the young children of the vanquished Charles I, among them the later James II, must have felt while imprisoned in Syon House in 1647, as they gazed on Moses Glover’s cartographic glorification of the dominions and continuing power of their gaoler, the Earl of Northumberland.

MAPS IN PAINTING, LITERATURE, AND THE MINOR ARTS

Maps and globes also played an important supporting role in portraits. They are to be seen as appropriate props in portraits by Marcus Gheeraerts the Younger and Cornelis Ketel of such navigators and explorers as Francis Drake and Martin Frobisher, and in the Anthony van Dyck portrait of the Earl and Countess of Arundel of 1639, where the earl is shown pointing at Madagascar, the site of an ultimately unsuccessful colonial venture, on a large, presumably Dutch, globe. As can be seen in plate 23, the landowner and amateur artist Sir Nathaniel Bacon also chose to depict himself in front of the Ortelius map of Germany in his self-portrait in the 1620s. It is, however, Elizabeth I herself who is particularly remarkable in this respect. Although unlike her father, brother, or first minister she seems to have had no particular fondness for or awareness of the administrative potential of maps, she did grasp their potential as allegorical symbols. She (at the very least) repeatedly acquiesced in being depicted in the vicinity of maps and globes. Perhaps the most striking portrayal, commissioned by Sir Henry Lee, the queen’s champion, from Marcus Gheeraerts the Younger and probably commemorating her visit to Ditchley in Oxfordshire for the Entertainment of 1592, shows her standing on the globe over a map of England, which she dominates and simultaneously protects from the surrounding storms (see plate 18).

Less prominent on the portrait is the jewelled armillary sphere, alluding to her mastery over nature, which serves as an earring. In the “Sieve” portrait of Elizabeth, painted by Quentin Matsys (Massys) the Younger in 1583, the prime version of which is now in Siena, a globe attracts the viewer’s attention (fig. 54.23). In an image that is heavily laden with allegorical references, we see a world that is cast into darkness except for the British Isles, which is bathed in light with a ship heading westward over the Atlantic—a reference to England’s imperial destiny, as recently enunciated by John Dee in his General and Rare Memorials Pertaining to the Perfecte Arte of Navigation (1577). In the “Armada” portrait, which is also known in several versions, the queen has her hand

Lordshippees and part of the Revenues of that potent peere and truely Honourd Algernon Percy, Earl of Northumberland, My Noble Lord and Master” by Moses Glover “Paynter and Architect” of 1635, in the style of a German Lanckfels, with Syon and its estate at the center and embellished with the arms and genealogy of the earl and his relatives and ancestors is still on display in Syon House. It is illustrated in the guidebook Syon House: A Seat of the Duke of Northumberland (Derby: English Life Publications, 1987), 14–15, and described in Lynam, “Character of England in Maps,” 16–20. Another splendid estate map prepared for a simple country squire but adorned with his arms, a view of his mansion house, and allegorical decoration and pictures of animals is William Gier’s map of 1612 showing land in the parish of Ticehurst in Sussex, discussed by Hilda Marchant, “A Memento Mori or Vanitas Emblem on an Estate Map of 1612,” Mapline 44 (1986): 1–4. A further plan of Hamberden in the same parish by Gier, of 1614, contains a portrait of the estate’s owner, Anthony Apsey, as well as his arms, those of earlier owners of the land, and pictures of farm animals (East Sussex Record Office, SAS/CO/d3), discussed and illustrated in Rodríguez-Salgado, Armada, 226–27 and 230.)

The painting, which exists in several versions, is reproduced and discussed in Oliver Millar, Van Dyck in England, exhibition catalog (London: National Portrait Gallery, 1982), 99.

Frances Amelia Yates, Astraea: The Imperial Theme in the Sixteenth Century (1975; London: Ark Paperbacks, 1985), 104–6; Roy C. Strong, The Cult of Elizabeth: Elizabethan Portraiture and Pageantry (London: Thames and Hudson, 1977), 154 (where it is dated tentatively to 1590); Morgan, “Cartographic Image,” 152; Harley, “Meaning and Ambiguity,” 33 and pl. 8 (with references to Strong’s earlier analyses); and Karen Hearn, Marcus Gheeraerts II: Elizabethan Artist (London: Tate, 2002), 12 and 30–33. It should be pointed out that the image has much in common with the “Dangers Averted” Armada Medal, on which Elizabeth is symbolized as a bay tree over an island surrounded by stormy seas (Edward Hawkins, Augustus W. Franks, and Herbert A. Grueber, Medallic Illustrations of the History of Great Britain and Ireland to the Death of George II, 2 vols. (London: British Museum, 1885), 1:154–56.

Wrongly originally a diplomatic gift, as it is first recorded in a Medici palace. Discussed and reproduced in, for example, Rodríguez-Salgado, Armada, 86–87; Yates, Astraea, 114–18 (although her analysis is flawed through the mistaking of the painting); and Strong, Gloriana, 100–107.
FIG. 54.23. QUENTIN MATSYS THE YOUNGER, PORTRAIT OF ELIZABETH I, 1583.
Size of the original: 124 × 92 cm. Pinacoteca Nazionale, Siena (inv. n. 454). Reproduced by permission of the Soprintendenza al Patrimonio Storico, Artistico ed Etnoantropologico per le Province di Siena e Grosseto.
over a globe but more specifically over North America while her finger points to the Spanish Main. This portrayal seems to be a reference not only to England’s generalized imperial ambitions, but also to its hopes for expansion in the Americas in line with Dee’s ideas and Drake’s raids in the region.525

As early as the 1540s maps were familiar enough to be found fulfilling an emblematic role as decorations on objects. Thus a depiction of the 1544 siege of Boulogne is found on a hunting knife, acquired for the British royal collection in 1966, which was made for Henry VIII, probably in the following year, by Diego de Çaias (fig. 54.24).526 By 1590 reduced images derived from Saxton are utterly lacking any traces of human habitations or activity. They are peopled with figurative, allegorical representations of the history of these natural features, thereby constituting perhaps the apogee of the antiquarian-patriotic mapping impulse that I have noted earlier.529

It is uncertain whether Drayton consciously intended his poems and their accompanying images to be subtly antimonarchical, in that they placed ultimate authority in the land itself rather than in the person of the monarch, as some modern writers and, notably, Helgerson, have argued. Indisputably, however, the maps and poems could be read in this way, and perhaps were so read at the time. Another and perhaps more significant expression of the same phenomenon can be seen in a charter of 1584 transferring certain lands to the Pembroke antiquary, George Owen of Henllys.530


throned monarch. The royal arms are indeed to be seen, but the space is mainly taken up with a miniature map of Owen’s beloved home county of Pembroke, copied from the map in Saxton’s atlas. Loyal (if critical) subject of the queen though Owen was, it was conceptually not a large leap from that charter to the Great Seal of the Commonwealth designed by Thomas Simon in 1649, on which the emblematic depiction of the monarch on horseback was replaced by a map of England, Wales, and Ireland, emblematic of the freshly won sovereignty of its peoples.\textsuperscript{531}

From being primarily a decorative adjunct to the public appearance of the monarch and then a particular tool for the effective exercise of royal authority, by the end of the period under discussion, the map in England had become emblematic of the monarchy’s downfall and an object of daily use by everyman.

**Mapmaking in Early Stuart England, 1612–1650**

For the first twelve years of the new century the cartographic impulse in England must have seemed as strong as ever. Although the degree of crown support for mapmaking, as estimated by Bendall, fell from 16 percent of the total under Elizabeth to 8 percent under James I, this probably represented a level state of support in financial terms, given the increasing number of local mapmakers and amounts spent on mapping.\textsuperscript{532} Edward Wright enjoyed the favor of James I’s eldest son Henry, Prince of Wales, who also patronized other mathematicians and mapmakers.\textsuperscript{533} Courtiers, ministers, and particularly corporate bodies also continued to patronize mapmakers. The Earl of Northumberland, although imprisoned most of the time, remained loyal to Thomas Harriot and patronized Ralph Treswell and his sons. Powerful individuals, like the chancellor of the exchequer, Fulke Greville, as we have seen, were interested in maps and in this capacity patronized the mapping of John Speed.

The City of London livery companies and the great trading companies, whose numbers augmented notably with the foundation of the East India Company in 1600, were more active than ever as sponsors of mapping and charting in connection with plantations in Ulster, increasing colonization in America and the Caribbean, and trade with Asia. A growing number of country squires commissioned estate maps, while the law courts and administrative needs generated further mapping. One further minor growth area, as Worms has pointed out, from the mid-1570s was the occasional ephemeral broadsheet or newsbook (corranto). These were produced for the popular market with crude maps illustrating, for instance, the attempted English relief of the siege of La Rochelle in 1627,\textsuperscript{534} in imitation of the skilled productions of the Vischer dynasty in the Dutch Republic.

These stimuli found reflection in such achievements as John Norden’s survey of the Honour of Windsor (1607),\textsuperscript{535} Ralph Treswell’s surveys of the Earl of Northumberland’s estates (now in Petworth House, Sussex), and the map of the James River “where before Christian never hath been,” sent to Henry, Prince of Wales, by Robert Tindall.\textsuperscript{536} It is to be seen in the “Northumberland world map” of 1614–15,\textsuperscript{537} in the mapping of the Ulster plantations by such surveyors as Thomas Raven,\textsuperscript{538} the mapping of the northern voyages of Henry Hudson and William Baffin,\textsuperscript{539} John Smith’s mapping of the Virginia and New England colonies,\textsuperscript{540} and Richard Norwood’s accomplished survey of the newly-established English colony on


\textsuperscript{532} Bendall, *Dictionary*, 1:59–65 (table 1).


\textsuperscript{535} BL, Stowe MS. 3749 (dedicated to James I), Royal Library, Windsor (copy dedicated to Henry, Prince of Wales); see also BL, Add. MS. 6027 for Norden’s separate survey of the lands of the Duchy of Cornwall.

\textsuperscript{536} R. Tindall to Henry Prince of Wales, 22 June 1607 (BL, Harley MS. 7007, fol. 139). Though BL, Cotton MS. Aug. Lii.46 has traditionally been identified as the map sent by Tindall, it is dated 1608 and seems to be a neat copy probably copied in London from Tindall’s less handsome original “draught.” And see Wallis, *Raleigh & Roanoke*, 96; William Patterson Cumming, R. A. Skelton, and David B. Quinn, *The Discovery of North America* (London: Elek, 1971), 236–37; and Strong, *Henry, Prince of Wales, 61*.

\textsuperscript{537} BL, Add. MS. 70640. The manuscript map, attributed to Thomas Harriot or Edward Wright, working in collaboration with a member of the Thames School of chartmakers, was formerly at Petworth. It was probably commissioned by the “wizard” Earl of Northumberland when he was imprisoned in the Tower with Raleigh.

\textsuperscript{538} On mapping in Ireland, see chapter 55 in this volume.

\textsuperscript{539} Andrews, *Trade, Plunder and Settlement*, 344–53.

Bermuda in 1617.\textsuperscript{541} Above all, however, it is to be seen in the multiple sheet maps, folio and miniature atlases, and cartographic book illustrations that appeared in these years (discussed in chapter 57 of this volume).

After 1612, however, the pace of British map production faltered and, with the partial exception of the maps in Speed’s \textit{Prospect of the Most Famous Parts of the World} (1627) (engraved in Amsterdam and derived from older Dutch maps), the appearance of printed maps produced in England fell to a trickle. Although by the 1620s England appeared to be catching up with Italy in publishing maps that were intended as practical guides for tourists and inhabitants in finding their way around,\textsuperscript{542} London was the only town that merited such treatment on account of its size. Even then the plan, or \textit{Guide for Country Men to the Famous Cittie of London . . . by the Help of w ich . . . They Shall be Able to Know How Farr It Is to Any Street} (1625), was an amended copy of a map by John Norden (1593) and was itself ultimately derived from the Copperplate map of London that had been commissioned for very different reasons in the 1550s.\textsuperscript{543}

Between 1612 and 1650 no further freshly surveyed printed English town plans were produced, with the exception of those incidentally shown on broadsides with commemoratives of Civil War battles published in the 1640s.\textsuperscript{544} Aaron Rathborne’s attempt in 1617 to win support for the creation of a series of town plans came to nothing.\textsuperscript{545} As Smith has pointed out, many of the smaller towns mapped by John Speed in the first years of the seventeenth century were not resurveyed until the mid-nineteenth century, under the auspices of the Ordnance Survey.\textsuperscript{546} Instead, the images of Smith, Speed, and the other Elizabethan surveyors were continuously recycled. Bendall has demonstrated that between 1600 and 1650 urban maps produced by named mapmakers declined to a mere 5 percent of the total of local map production.\textsuperscript{547}

Worms has explained the decline in printed map production in terms of the inability of English publishers and mapmakers to free themselves from their dependence on such Flemish engravers as Hondius and Van den Keere, and to the commercial strength and organization of the Dutch map publishers. By the 1630s the Dutch publishers were able to satisfy British cartographic needs and to dominate the map market by publishing English-text editions of the major terrestrial and maritime atlases.

These factors do not, however, explain the downturn in governmental manuscript map production that is observable in the same period. Here the factors were predominantly personal and political. Henry Prince of Wales and James I’s lord treasurer, Robert Cecil, Earl of Salisbury, died prematurely in 1612. Henry’s younger brother Charles, who ascended the throne in 1625, showed no interest in maps. Indeed, in the late 1630s, he gave the papal nuncio, George Conn, a handsome Battista Agnese atlas that had been presented to Henry VIII, probably in exchange for Italian paintings.\textsuperscript{548} After 1612 successive royal favorites and ministers lacked Salisbury’s enthusiasm for surveying the royal estates. Then, in the 1630s, Charles I was compelled to dispose of large parts of the royal estates at low prices to remain solvent during his years of rule without parliament, making irrelevant further detailed surveys of the sort that had been commissioned by his father. The parsimony that was forced on the crown by the reluctance of parliament to grant supplies also led to a reversal from the late 1620s of the aspects of government policy that had been so cartographically productive under the Tudors: an active, interventionist foreign policy and the fostering of the nation’s defenses.

By the second and third decades of the seventeenth century the only branches of native English cartography that could be described as vigorous were local surveying, colonial mapping, and manuscript chartmaking. Local mapping extended to include the drainage of fenlands, for which foreign experts, notably Cornelis Vermuyden, were regularly recruited, and the enclosure of land by agreement between private landowners.\textsuperscript{549} Bendall has suggested that the fraction of named mapmakers engaged in


\textsuperscript{543} Howgengo, \textit{Printed Maps of London}, 5. The unique surviving copy of the first impression is in the Royal Library, Windsor Castle.

\textsuperscript{544} For instance Richard Clampe’s plan of the siege of Newark (1646) published by Peter Stent (BL, Maps *4670 [1]) has a small plan of Newark at its center.

\textsuperscript{545} Delano-Smith and Kain, \textit{English Maps}, 214.

\textsuperscript{546} Smith, “Enduring Image,” 172.

\textsuperscript{547} Bendall, \textit{Dictionary}, 1:59–65 (table 1).


\textsuperscript{549} For the cartographic offshoots of this activity, see, for instance, the “Map of the Fens” (1642) to which Cornelis Vermuyden contributed in his \textit{A Discourse Touching the Draying of the Great Fennes} (London: T. Fawcet, 1642).
woodcut broadsides, with some more skilled copperplate etchings by Hollar, were published in England with plans and bird’s-eye views of the more important battles and sieges. \footnote{555} Nevertheless, by 1650 English map publishing was insignificant and manuscript mapmaking was largely confined to local mapping and chartmaking.

**CONCLUSION**

England may be said to have experienced a cartographic false dawn in the period from 1470 to 1650. Although it had a fairly distinguished medieval cartographic legacy, it had been foreign intellectual influences, particularly from Burgundy and southern Germany, that had awakened its ruling elites to the potential of maps in cultural, courtly, and administrative contexts during the opening decades of the sixteenth century.

Henry VIII’s new-found awareness of the practical utility of maps and the availability to him of enormous amounts of money for mapping (from the dissolved monasteries) at a time when invasion of England’s shores seemed imminent forced the speedy evolution of mapmaking in England in the 1530s and 1540s. Mapmaking soon reached high levels of sophistication. In subsequent decades the insistence of government on receiving maps to illuminate administrative as well as military problems helped to spread an awareness of the value of maps well beyond the court. During Elizabeth I’s reign, direct and indirect governmental patronage ensured that England and

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\footnote{550} Bendall, Dictionary, 1:11–17.
\footnote{551} Bendall, Dictionary, 1:59–65 (table 1), and Andrews, Plantation Acres.
\footnote{552} Skelton, Saxton’s Survey, 14–15 and 21–22.
\footnote{553} A Direction for the English Traveller... 1643, and A Book of the Names of All the Hundreds Contained in the Shires of the Kingdom of England... (1644?), discussed in Skelton, Country Atlases, 68–70.
\footnote{554} In addition to figure 54.25, for example, BL, Add. MS. 5415.59 (plan of Reading 1647–49), and Bodleian Library, MS. Top. Oxon. B. 167 (plan of Oxford, 1644, illustrated and discussed in Millea, Street Mapping, 34–35). Gomme was particularly associated with the King’s nephew, Prince Rupert of the Rhine: C. V. Wedgwood, The King’s War, 1641–1647 (London: Collins, Fontana, 1958), 406.
\footnote{555} For instance, The Description of the Armies of Horse and Foot of His Majesties, and Sir Thomas Fairfax His Excellency, as They were Drawn into Several Bodies at the Battaye at Nasbye the Fourteenth Day of June 1645. Streeter fecit, in Anglia rediviva, by Joshua Sprigg (London: John Partridge, 1647); A Description of the Siege of Newarke upon Trent, with the Fortifications about the Towne as also the Forme of the Enrechements, Forts, Redouts... Described by R. Clampe. Pere. Lowell fecit (London, 1646) (BL, Maps *4670 [1]); The Siege of Colchester by the Lord Fairfax, as It Was with the Line and Outworks, 1648 (London: T. Witham, [1650?]); Wenceslaus Hollar, A True Map and Description of Plymouth and the Fortifications Thereof, with the Workes and Approaches of the Enemy at the Last Siege.Ao.1643, in A True Narration of the Most Observable Passages, in and at the Late Seige of Plymouth... 1643 (London: L. N. for F. Eglesfeild, 1644).
Wales were mapped in detail for the first time, although the beginnings of this initiative can be tracked back to the reign of Henry VIII. At the same time, the evolution of a market in land and the ever-sharper boundary disputes engendered led to the creation of the first local “estate” maps drawn to a consistent scale. During the 1580s and 1590s, England briefly became one of the centers of the European map trade. Flemish refugees engraved and published numerous maps, and a pair of distinguished, large globes was created by Emery Molyneux and Jodocus Hondius. Maps served significant propaganda purposes at court and in the country.

The mapping impulse soon faltered, however. Once the Netherlands had recovered from prolonged internal strife, it reasserted a commercial supremacy that England was not yet in a position to successfully challenge. The refugee engravers moved to the northern Netherlands, and from there they continued to dominate the English map market. The growing economic and political weakness of the crown and the absence of any major foreign threat to England led to ever-diminishing royal and official patronage of cartography, particularly after 1612. The crown’s opponents among the aristocracy and country gentlemen, individually and corporately concentrated their patronage on the personal cartography of estate management, colonization, and commerce. By 1650, there was no English printed map trade to speak of and very little manuscript mapping being undertaken in the public sphere.

England had nevertheless changed radically since 1470. Most of the literate, decision-making groups in society appreciated the utility of maps, and a significant number of individuals among them made maps or commissioned them for a wide variety of educational, intellectual, patriotic, antiquarian, or administrative purposes. A market for maps, atlases, and globes existed. An English printed map trade would only finally evolve, however, in the wake of England’s emergence as an economic and political great power after 1689.