

54 • Mapmaking in England, ca. 1470–1650

PETER BARBER

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.¹ Although the first map to be printed in England, a T-O map illustrating William Caxton's *Myrroure 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.²

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.³ 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*.⁴ 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.⁵ As late as the 1540s Henry VIII possessed "a mappa mundi in parchement" in "The Removing Guarderobe . . . attendaunt at the Courte uppon the kinges most Roiall persone where the same for the tyme shall happen to be,"⁶ 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.⁷

Abbreviations used in this chapter include: *English Map-Making* for Sarah Tyacke, ed., *English Map-Making, 1500–1650: Historical Essays* (London: British Library, 1983); *HKW* for Howard Montagu Colvin et al., *The History of the King's Works*, 6 vols. (London: Her Majesty's Stationery Office, 1963–82); *LMP* for R. A. Skelton and P. D. A. Har-

vey, eds., *Local Maps and Plans from Medieval England* (Oxford: Clarendon Press, 1986); *Mapmaker's Art* for Edward Lyman, *The Mapmaker's Art: Essays on the History of Maps* (London: Batchworth Press, 1953); *Monarchs, Ministers, and Maps* for David Buisseret, ed., *Monarchs, Ministers, and Maps: The Emergence of Cartography as a Tool of Government in Early Modern Europe* (Chicago: University of Chicago Press, 1992); *Rural Images* for David Buisseret, ed., *Rural Images: Estate Maps in the Old and New Worlds* (Chicago: University of Chicago Press, 1996); *Tales from the Map Room* for Peter Barber and Christopher Board, eds., *Tales from the Map Room: Fact and Fiction about Maps and Their Makers* (London: BBC Books, 1993); and TNA for The National Archives of the UK, Kew (formerly the Public Record Office).

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.

3. Scott D. Westrem, *The Hereford Map: A Transcription and Translation of the Legends with Commentary* (Turnhout: Brepols, 2001); Naomi Reed Kline, *Maps of Medieval Thought: The Hereford Paradigm* (Woodbridge, Suffolk: Boydell Press, 2001); and P. D. A. Harvey, *Mappa Mundi: The Hereford World Map*, rev. ed. (Hereford: Hereford Cathedral, 2002). There is a vast and ever-growing literature.

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 *Mappaemundi*," in *HC* 1:286–370, esp. 352). The numerous printed versions of Higden did not contain maps.

5. Figure 2.8 in this volume; Peter Barber and Michelle P. Brown, "The Aslake World Map," *Imago Mundi* 44 (1992): 24–44; Peter Barber, "The Evesham World Map: A Late Medieval English View of God and the World," *Imago Mundi* 47 (1995): 13–33; and Delano-Smith and Kain, *English Maps*, 22, for a *mappamundi* purchased for the library at New College, Oxford, for the considerable sum of £5 in 1462, that was probably though not certainly a map.

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

7. See the following articles in *HKW*: Howard Montagu Colvin, "Henry III, 1216–1272," 1:93–159, esp. 1:127, idem, "Westminster Palace," 1:491–552, esp. 1:497, 504–5, and R. Allen Brown and Howard Montagu Colvin, "The Royal Castles, 1066–1485," 2:554–894, esp. 2:859 and 861; Juergen Schulz, "Jacopo de' Barbari's View of

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"⁸ 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.⁹ Larger traditional *mappaemundi* always included references to and illustrations of biblical episodes, particularly from the Old Testament, in the appropriate locations,¹⁰ so they would have fitted in 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.¹¹

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")¹² 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.¹³ 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.¹⁴ It is likely this was also the case in the English court, given the close links between the two.¹⁵

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.¹⁶ 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

quaries, 1986), 43–44; Woodward, "Medieval *Mappaemundi*," 339; Peter Barber, "Visual Encyclopaedias: The Hereford and Other *Mappae Mundi*," *Map Collector* 48 (1989): 2–8, esp. 4–5; idem, "Evesham World Map," 21 and 29 (for a discussion of intermediate-sized *mappaemundi*); and Marcia A. Kupfer, "Medieval World Maps: Embedded Images, Interpretive Frames," *Word & Image* 10 (1994): 262–88, esp. 267–68, 271, and 276–80.

8. BL, Harley MS. 1419, fol. 246.

9. It is now generally accepted that because of their encyclopedic nature, *mappaemundi* could be teaching aids in numerous nonecclesiastical spaces (for example, Kupfer, "Medieval World Maps," 264–65 and 270–71, and Schulz, "View of Venice," 446–47 and 452–54).

10. Woodward, "Medieval *Mappaemundi*," 326, 328, and 330, summarizing an extensive modern literature on the subject.

11. Kupfer, "Medieval World Maps," 272–73 and 275–76, reviews the surviving physical evidence for the location of *mappaemundi* inside churches and within monastic complexes but she has also perceptively noted (p. 276) that "façades at the boundary between the church and the world were preferred sites for the display of distant marvels located on *mappaemundi* . . . and of *rotae* with which the terrestrial realm was symbolically assimilated." In view of repeated assertions in the past that *mappaemundi* were used as altarpieces, it is worthy of note that no *mappaemundi* or maps are listed among the contents of any of the chapels in Henry's palaces. For a convincing rebuttal of these assertions, see Marcia A. Kupfer, "The Lost *Mappamundi* at Chalivoy-Milon," *Speculum* 66 (1991): 540–71, and idem, "Medieval World Maps," 273 and 275–76. For the assertions, see, for example, Anna-Dorothee von den Brincken, "Mappa mundi und Chronographia: Studien zur *Imago Mundi* des abendländischen Mittelalters," *Deutsches Archiv für die Erforschung des Mittelalters* 24 (1968): 118–86, esp. 128.

12. See Peter Barber, "Cartography, Topography and History Paintings," in *The Inventories of Henry VIII* (London: Society of Antiquaries, forthcoming), and idem, "The Maps, Town-Views and Historical Prints in the Columbus Inventory," in *The Print Collection of Ferdinand Columbus (1488–1539)*, 2 vols., ed. Mark McDonald (London: British Museum Press, 2004), 1:246–62.

13. See Barber, "Maps, Town-Views," 1:251 and 2:517 (no. 2803).

14. Biblothèque Municipale de Lyon, MS. du palais, 32.

15. Gordon Kipling, *The Triumph of Honour: Burgundian Origins of the Elizabethan Renaissance* (The Hague: For the Sir Thomas Browne Institute by Leiden University Press, 1977). For an example of a traditional, if decoratively unusual, *mappamundi* by Corbechon in a Flemish (that is, in this context, Burgundian) manuscript probably commissioned by Edward IV of England, see BL, Royal MS. 15.E.III, fol. 67v (illustrated in Peter Barber, "The Manuscript Legacy: Maps in the Department of Manuscripts," *Map Collector* 28 [1984]: 18–24, esp. 20).

16. For the Gough map, now in the Bodleian Library, Oxford, see Edward John Samuel Parsons, *The Map of Great Britain circa A.D. 1360, Known as the Gough Map: An Introduction to the Facsimile* (Oxford: Oxford University Press for the Bodleian Library and the Royal Geographical Society, 1958); Brian Paul Hindle, "The Towns and Roads of the Gough Map (c. 1360)," *Manchester Geographer* 1 (1980): 35–49; P. D. A. Harvey, *Medieval Maps* (London: British Library, 1991), 73–78; Delano-Smith and Kain, *English Maps*, 47–48; Daniel Birkholz, *The King's Two Maps: Cartography and Culture in Thirteenth-Century England* (New York: Routledge, 2004); and idem, "A Monarchy of the Whole Island," in *The Map Book*, ed. Peter Barber (London: Weidenfeld & Nicholson, 2005), 64–65. Examples of survivors are the early fifteenth-century "Totius Britanniae tabula chorographica" (BL, Harleian MS. 1808, fol. 9v); "Angliae figura . . ." the Cottonian map of Britain (BL, Cotton Aug. I.i.9); Sebastian Münster's *Anglia II. Nova tabula* of 1540; and George Lily's *Britanniae Insulae . . . Nova descriptio* of 1546. Reproduced and discussed in G. R. Crone, *Early Maps of the British Isles, A.D. 1000–A.D. 1579* (London: Royal Geographical Society, 1961), 19 and 22–25 (nos. 8, 12, 13, and 14).

Venice: Map Making, City Views, and Moralized Geography before the Year 1500," *Art Bulletin* 60 (1978): 425–74, esp. 448 and 453; Paul Binski, *The Painted Chamber at Westminster* (London: Society of Anti-

detailed coverage of certain regions (in the case of the Gough map, the area of Lincolnshire and southern Yorkshire)¹⁷ 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.¹⁸ It seems quite likely that the regional maps consulted by John Leland at Merton College in Oxford in the 1530s¹⁹ 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.²⁰ 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.²¹ 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*."²² 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.²³ 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*."²⁴ 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.²⁵

17. G. R. Crone, Eila M. J. Campbell, and R. A. Skelton, "Landmarks in British Cartography," *Geographical Journal* 128 (1962): 406–30, esp. 407, and Delano-Smith and Kain, *English Maps*, 48.

18. In addition to the maps illustrating Sebastian Münster's works, the Lily and the Cottonian maps (for which see below), Daniel Birkholz (in "The Gough Map Revisited: Thirteenth Century Perspectives on Thomas Butler's Map of England ca. 1554," in *Actas-Proceedings-Comptes-Rendus: 19th International Conference on the History of Cartography, Madrid, 1–6 June 2001*, CD-ROM [Madrid: Ministerio de Defensa, 2002]), has drawn attention to a manuscript mid-sixteenth-century map, now in the Pierpont Morgan Library, New York, which is still in the Gough tradition.

19. Peter Barber, "The British Isles," in *The Mercator Atlas of Europe: Facsimile of the Maps by Gerardus Mercator Contained in the Atlas of Europe, circa 1570–1572*, ed. Marcel Watelet (Pleasant Hill, Ore.: Walking Tree Press, 1998), 43–77, esp. 43 and 45.

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," *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 Hardyng'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).

21. John H. Harvey, "Symbolic Plans of a City, Early 15th Century," in *LMP*, 342–43.

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.

24. Delano-Smith and Kain, *English Maps*, 22, 181 and 251 n. 42, discussing BL, Royal MS. 13.A.iii.

25. H. S. A. Fox, "Exeter, Devonshire circa 1420," 163–69; M. G. Snape, "Durham 1439 × circa 1447," 189–94; Philip E. Jones, "Deptford, Kent and Surrey; Lambeth, Surrey; London, 1470–1478," 251–62; H. S. A. Fox, "Exeter, Devonshire, 1499," 329–36, all in *LMP*; and Delano-Smith and Kain, *English Maps*, 26. These were generally created to elucidate legal disputes, for which see below. For an exception, see Thomas Chaundler's memorial bird's-eye view of New College Oxford from the early 1460s (New College, Oxford, MS C.288 on deposit in the Bodleian Library and illustrated in Delano-Smith and Kain, *English Maps*, 32).



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 Chaulder 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.²⁶ 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.²⁷ 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.²⁸ 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.²⁹ 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 data may have been 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-



FIG. 54.2. ROBERT RICART, PLAN OF BRISTOL, CA. 1480.

Size of the original: 15 × 12 cm. Photograph courtesy of the Bristol Record Office (04720 fol. 5v).

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.

29. See P. D. A. Harvey, *Manorial Records* (London: British Records Association, 1984), 15–24; idem, "Surveying in Medieval England," and "Medieval Local Maps and the History of Cartography," both in *LMP*, 11–19 and 20–32, esp. 12–21; and H. C. Darby, "The Agrarian Contribution to Surveying in England," *Geographical Journal* 82 (1933): 529–35, esp. 530.

est of the surveying manuals to be published in England, John Fitzherbert's *Boke of Surueying*, first published in 1523.³⁰ 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 vieu 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 euery parcel therof . . . 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 degre" 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 abutments 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

30. John Fitzherbert, *Here Begynneth a Ryght Frutefull Mater and Hath to Name the Boke of Surueyinge and Improueme[n]tes* (London: R. Pynson, 1523). Later editions appeared in 1528, 1533, 1535(?), 1539, 1546, 1567, and 1587.

31. Fitzherbert, *Here Begynneth a Ryght Frutefull Mater*, chap. 19, and Andrew McRae, *God Speed the Plough: The Representation of Agrarian England, 1500–1660* (Cambridge: Cambridge University Press, 1996), 172–73.

32. Discovered in the Birthplace Library at Stratford-on-Avon, forming part of the Archer Collection; see Brian K. Roberts, "An Early Tudor Sketch Map," *Historical Studies* 1 (1968): 33–38.

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.

34. Harvey, "Influences and Traditions," 33–34 and map on 1; idem, "Local and Regional Cartography," 484; and Delano-Smith and Kain, *English Maps*, 28–29. See also Edward Lynam, "Maps of the Fenland," in *The Victoria History of the County of Huntingdon*, 3 vols., ed. William Page et al. (London: St. Catherine's Press, 1926–36), 3: 291–306.

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.

36. P. D. A. Harvey, "Local Maps in Medieval England: When, Why, and How," in *LMP*, 3–10, esp. 7.

37. BL, Add. MS. 62534, fol. 180, and Harvey, *Maps in Tudor England*, 103.

38. Notarial Instrument between John Atwyll, alderman of Exeter and the prior of Launceton, Exeter City Archives, ED/M/933, described and discussed in Mary R. Ravenhill and Margery M. Rowe, eds., *Devon Maps and Map-Makers: Manuscript Maps before 1840*, 2 vols. (Exeter: Devon and Cornwall Record Society, 2002), 1:35 and 176; H. S. A. Fox, "Exeter, Devonshire, 1499," in *LMP*, 329–36; and Harvey, *Maps in Tudor England*, 103–4.

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).⁴⁰ Extremely rarely the sketches were akin to architectural plans, used for instance in planning a new kitchen for Winchester College in about 1390.⁴¹ 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.⁴² 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.⁴³

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.⁴⁴ 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.⁴⁵ 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.⁴⁶ 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.⁴⁷

ITALY

In other cartographic fields, the foreign influence can be clearly demonstrated. Portolan charts were known in England from at least the 1360s,⁴⁸ 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,⁴⁹ 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)

40. M. D. Knowles, "Clerkenwell and Islington, Middlesex, Mid-15th Century," in *LMP*, 221–28.

41. John H. Harvey, "Winchester, Hampshire, Circa 1390," in *LMP*, 141–46, esp. 144, and Delano-Smith and Kain, *English Maps*, 28–29 and 33.

42. K. D. Hartzell, "Diagrams for Liturgical Ceremonies, Late 14th Century," and David Mills, "Diagrams for Staging Plays, Early or Mid-15th Century," in *LMP*, 339–41 and 344–45. Delano-Smith and Kain, *English Maps*, 22–23 (BL, Add. MS. 57534, fol. 62v: a late fourteenth- or early fifteenth-century English plan showing positions to be taken by the clergy during the Easter Vigil).

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.

46. For a general discussion, see J. R. Hale, *The Civilization of Europe in the Renaissance* (London: HarperCollins, 1993).

47. Thomas Elyot, *The Book Named the Governor* [1531], ed. S. E. Lehmberg (London: Dent, 1962), 35, and Harvey, *Maps in Tudor England*, 7.

48. Barber and Brown, "Aslake World Map," 33–34.

49. Tony Campbell, "Portolan Charts from the Late Thirteenth Century to 1500," in *HC* 1:371–463, esp. 374.

but also for other clients.⁵⁰ 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 caart & othir demonstracions Reasonable.”⁵¹ 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 1521–22,⁵² 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.⁵³ It would rather have resembled the Francesco Rosselli view of Florence, from which the surviving *Catena* view is derived,⁵⁴ 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.⁵⁵

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.⁵⁶ 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.⁵⁷ 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 townscapes, 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.⁵⁸ 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.⁵⁹

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.

53. Peter Barber, “A Glimpse of the Earliest Map-View of London?” *London Topographical Record* 27 (1995): 91–102.

54. For a recent discussion of these maps of Florence, see Werner Kreuer and H.-T. Schulze Altappenburg, *Fiorenza, veduta della Catena: Die große Ansicht von Florenz* (Berlin: Wasmuth, 1998).

55. I am grateful to Christopher Wittick, the county archivist of East Sussex, for this information, which he discovered in TNA, E 86/236, p. 398.

56. Barber, “Maps, Town-Views,” 1:255 and 2:574 (no. 3182). Judging from the description in the Columbus inventory, this map could well have provided the model for Sebastian Münster's *Anglia II* map of 1540 (for which see Crone, *Early Maps of the British Isles*, 23–24 [no.13], and Rodney W. Shirley, *Early Printed Maps of the British Isles, 1477–1650*, rev. ed. [East Grinstead: Antique Atlas, 1991], 16–17).

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.

58. John Harris, *The Artist and the Country House: From the Fifteenth Century to the Present Day*, exhibition catalog (London: Sotheby's Institute, 1995), 25, and John Cornforth, “Kentchurch Court, Herefordshire—II,” *Country Life* 140 (22 December 1966): 1688–91, esp. 1688.

59. BL, Royal MS. 16.F.II, 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.⁶⁰ Albertian theories of proportion and precision of measurement were probably also reaching the desks of some English scholars from mainland Europe and particularly Germany.⁶¹

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.⁶² 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.⁶³ 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 instrumentmaker Nicolaus Kratzer,⁶⁴ who was appointed court astronomer and horologist in 1519, and a succession of distinguished visiting humanists beginning with Desiderius Erasmus (repeatedly from 1499)⁶⁵ and Baldassare Castiglione (1503),⁶⁶ 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.⁶⁷ We know from the inventories compiled in 1542

60. J. R. Hale, *Artists and Warfare in the Renaissance* (New Haven: Yale University Press, 1990), contains numerous reproductions of such pictorial maps, including the earliest showing the Battle of Fornovo (1494). The earliest surviving commemorative battle plan (as opposed to bird’s-eye view) shows the Battle of Pavia (1525) (an example is BL, Maps cc.5.a.257), but there were probably earlier ones that are now lost. For the printed regional maps, see Barber, “Maps, Town-Views,” 256–58, and Roberto Almagià, *Monumenta Italiae cartographica* (Florence: Istituto Geografico Militare, 1929), 117, 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.

61. The theory of triangulation, first written about by Leon Battista Alberti in the 1440s, was known of in European intellectual circles long before its popularization by Gemma Frisius in 1533 (see John A. Pinto, “Origins and Development of the Ichnographic City Plan,” *Journal of the Society of Architectural Historians* 35 [1976]: 35–50 and esp. 37–38).

62. G. R. Elton, *England under the Tudors* (1955; London: Methuen, 1963), 127; David Woodward, *Maps as Prints in the Italian Renaissance: Makers, Distributors & Consumers* (London: British Library, 1996), 76; Peter Barber, “England I: Pageantry, Defense, and Government: Maps at Court to 1550,” in *Monarchs, Ministers, and Maps*, 26–56, esp. 28; and Campbell, *Earliest Printed Maps*, 218. It is revealing that the earliest surviving example of a plan attached to an English property deed, dating from 1534 and drawn in proportion but not to scale, related to one of Cromwell’s properties in the City of London. (Draper’s Company, London, deed AV 183, illustrated and discussed in Harvey, *Maps in Tudor England*, 104.)

63. J. B. Trapp and Hubertus Schulte Herbrüggen, “The King’s Good Servant”: *Sir Thomas More, 1477/8–1535*, exhibition catalog (London: National Portrait Gallery, 1977), 43 (no. 58). Pirckheimer owned the example of the Nicolaus Cusanus map of central Europe, still bearing his hand-drawn bookplate, see figure 42.4 in this volume (Campbell, *Earliest Printed Maps*, 35–55). There is no evidence that More made any maps himself, although he was a friend and patron of Nicolaus Kratzer and prefaced the first edition of his *Utopia* (Louvain: Dirk Martens, 1516) with a roughly executed pictorial map of the island, which was reengraved more elegantly by Ambrose Holbein for the third edition, published by Froben in Basle in 1518. He may have been persuaded to insert these maps against his own initial judgement: the measurements for the island given in the text intentionally defy the rules of mathematics and the possibilities of cartographic representation (Gillian Hill, *Cartographical Curiosities* [London: British Museum, 1978], 21, and Barber, “England I,” 29).

64. John David North, “Nicolaus Kratzer—The King’s Astronomer,” in *Science and History: Studies in Honour of Edward Rosen* (Wrocław: Ossolineum, 1978), 205–34; Willem Hackmann, “Nicolaus Kratzer: The King’s Astronomer and Renaissance Instrument-Maker,” in *Henry VIII: A European Court in England*, ed. David Starkey (London: Collins and Brown in association with National Maritime Museum, Greenwich, 1991), 70–73; Barber, “England I,” 29; and Trapp and Herbrüggen, *Sir Thomas More*, 95–96 (no. 187). In the early 1520s he included Ptolemy’s *Geography* as one of the subjects on which he lectured in Oxford.

65. Neville Williams, “The Tudors: Three Contrasts in Personality,” in *The Courts of Europe: Politics, Patronage and Royalty, 1400–1800*, ed. A. G. Dickens (London: Thames and Hudson, 1977), 147–67, esp. 153, and Margaret Mann Philips, *Erasmus and the Northern Renaissance* (London: English Universities Press, 1949), 40–41.

66. Castiglione came to England as the Mantuan ambassador and was to recommend mapmaking as an appropriate activity for young noblemen in *Il Cortegiano*. In the late 1520s Charles V presented him with the great planisphere of 1525, probably by Diogo Ribeiro, that still bears his name and is now in the Biblioteca Estense in Modena. See figure 30.25 and *Planisfero Castiglioni: Carta del navigare universalissima et diligentissima, 1525*, ed. Ernesto Milano and Annalisa Battini (Modena: Il Bulino, 2002).

67. For the map mentioned in Henry’s 1547 inventory (BL, Harley MS. 1419, fol. 133v), being the same as that mentioned by Richard Hakluyt the Elder (*Divers Voyages Touching the Discoverie of America, and the Ilands Adjacent unto the Same . . .* [London: T. Woodcocke, 1582], dedication, 2r), see Barber, “Cartography, Topography,” and also Lawrence C. Wroth, *The Voyages of Giovanni da Verrazzano, 1524–1528* (New Haven: Published for the Pierpont Morgan Library by Yale University Press, 1970), 162 and 168, and Marcel Destombes, “Nautical Charts Attributed to Verrazano (1525–1528),” *Imago Mundi* 11 (1954): 57–66.

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.⁶⁸

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.⁶⁹ 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.⁷⁰ 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.⁷¹ 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.⁷²

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 Governour*, 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 Vegetius⁷³ that had become something of a commonplace in the writings of such 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.⁷⁴ 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.”⁷⁵ Elyot was the first of several

68. Barber, “England I,” 43–44, and in greater detail in Barber, “Cartography, Topography,” and Maria Hayward, *The 1542 Inventory of Whitehall: The Palace and Its Keeper* (London: Illuminata for the Society of Antiquaries, 2004), ii and nos. 841–53, 855, 857, 858, 860, 2358, 2359, 3699, and 3670.

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).

70. Hale, *Civilization of Europe*, 15–27.

71. Quoted in Barber, “England I,” 30. See also E. G. R. Taylor, *Mathematical Practitioners of Tudor & Stuart England* (Cambridge: Cambridge University Press, 1954), 13 and 312, and Helen Wallis, “Some New Light on Early Maps of North America, 1490–1560,” in *Land- und Seekarten im Mittelalter und in der frühen Neuzeit*, ed. C. Koeman (Munich: Kraus International, 1980), 91–121, esp. 99.

72. Kratzer to Dürer, 24 October 1524, in Albrecht Dürer, *Schriften und Briefe*, 2d ed., ed. Ernst Ullman (Leipzig: Reclam, 1973), 142–43.

73. *Epitome rei militaris*, bk. 3, sec. 6; translated as *Vegetius: Epitome of Military Science*, 2d ed., trans. N. P. Milner (Liverpool: Liverpool University Press, 1996), 71. In this translation the word “itinerary,” perhaps recalling the Peutinger map, is used, although the language calls to mind a map showing physical relief. For the popularity of Vegetius, see Sydney Anglo, “Vegetius's ‘De Re Militari’: The Triumph of Mediocrity,” *Antiquaries' Journal* 82 (2002): 247–67.

74. An exception is BL, Cotton MS. Aug. I.ii.29 (see fig. 58.1), an untitled sketch of the Zuiderzee that served as the source for the depiction of the same area on the untitled display map (now Cotton Aug. I.ii.64). For both plans, see Alwyn A. Ruddock, “The Earliest Original English Seaman's Rutter and Pilot's Chart,” *Journal of the Institute of Navigation* 14 (1961): 409–31, and Peter Barber, “Henry VIII and Mapmaking,” in *Henry VIII: A European Court in England*, ed. David Starkey (London: Collins and Brown in association with National Maritime Museum, Greenwich, 1991), 145–54, esp. 149.

75. For the quotations in this paragraph, see Elyot, *Book Named the Governour*, 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,⁷⁶ but in 1526 an official report on Ireland referred to an accompanying "platt" to confirm its written statements,⁷⁷ 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.⁷⁸ 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 Théroutanne.⁷⁹

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.⁸⁰ 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.⁸¹ 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.⁸²

These signs of a growing awareness of the practical utility of maps in the late 1520s seem to have been country-wide 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

sion, 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 "Descriptio 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.

78. Anonymous map endorsed "Ireland" (BL, Cotton MS. Aug. I.ii.21), discussed in J. H. Andrews, *Shapes of Ireland: Maps and Their Makers, 1564–1839* (Dublin: Geography Publications, 1997), 11, 24, and 12.

79. Anglo, *Spectacle Pageantry*, 211–24, quotation on 215; Barber, "England I," 30; and David Starkey, ed., *Henry VIII: A European Court in England* (London: Collins and Brown in association with National Maritime Museum, Greenwich, 1991), 54–73. I have argued in "England I" and in more detail in "Cartography, Topography," that the view of Théroutanne is likely more immediately derived from Dürer's illustration of the meeting of Maximilian and Henry VIII at Théroutanne on the Triumphal Arch of Maximilian (Szilvia Bodnár, ed., *Dürer und seine Zeitgenossen: Riesen Holzschnitte hervorragender Künstler der Triumph Kaiser Maximilians I* [Budapest: Szépművészeti Múzeum, 2005], 75) and the painting of the same scene now at Hampton Court (reproduced in "England I," pl. 1); the world map is likely to have resembled the Münster-Holbein map of 1532 (Rodney W. Shirley, *The Mapping of the World: Early Printed World Maps, 1472–1700*, 4th ed. [Riverside, Conn.: Early World, 2001], 74–75 [no. 67]).

80. Hale, "Defence of the Realm," 381; Martin Biddle, Howard Montagu Colvin, and John Newenham Summerson, "The Defences in Detail," in *HKW*, 4:415–606, esp. 418; Brewer et al., *Letters and Papers . . . of Henry VIII*, 5:752; and Bendall, "Romney Marsh," 37.

81. BL, Cotton MS. Aug. I.i.65, and Eamon Duffy, *The Voices of Morebath: Reformation and Rebellion in an English Village* (New Haven: Yale University Press, 2001), 52–53. For alternative theories about and depictions of details of this important but technically and stylistically conservative map, see Harvey, *Maps in Tudor England*, 11, and Delano-Smith and Kain, *English Maps*, 49 and 51.

82. Martin Biddle and John Newenham Summerson, "Dover Harbour," in *HKW*, 4:729–68, esp. 731–32. The map is now in the BL Cotton MS. Aug. I.i.19. For reproductions and discussion of this and the later maps of Dover, see more generally William Minet, "Some Unpublished Plans of Dover Harbour," *Archaeologia* 72 (1922): 185–224, and Alec Macdonald, "Plans of Dover Harbour in the Sixteenth Century," *Archaeologia Cantiana* 49 (1937): 108–26.

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 Divi-

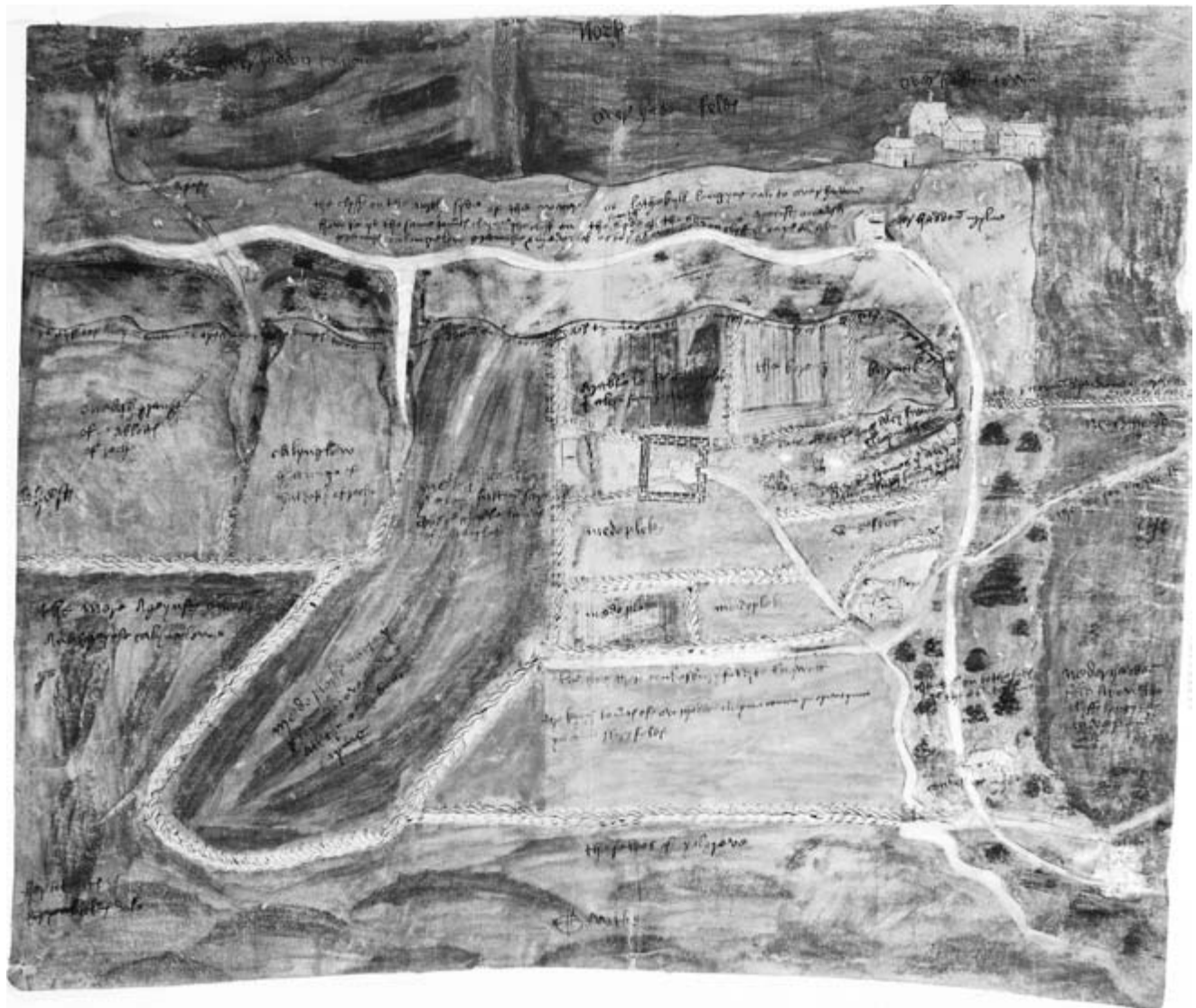


FIG. 54.3. VICAR OF BAKEWELL, MAP OF OVER HADDON, 1528.

Size of the original: ca. 58 × 67 cm. Photograph courtesy of TNA (MPC 1/59).

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 trustworth] and expert men of every shire in England beyng nere the see . . . to viewe all the places alongest the secost wher any danger of invasions ys like to be and to certifie the sayd daungers and also best advises for the fortificacion therof."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 total⁸⁸—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 de-

fense 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.

86. Hale, "Defence of the Realm," 375.

87. "Remembraunces" of Thomas Cromwell, probably early February 1539 (BL, Cotton MS. Titus B.i, fols. 473–74, summarized in Brewer et al., *Letters and Papers . . . of Henry VIII*, vol. 14, pt. 1, 153); and see Barber, "England I," 50 n. 65.

88. Hale, "Defence of the Realm," 374.

89. Hale, "Defence of the Realm," 370.

90. BL, Cotton MSS. Aug. I.ii.8, 68, 73, 75, 77. The red line on the latter map, showing the preferred English boundary, may even have been added by Henry himself (Lonnie Royce Shelby, *John Rogers: Tudor Military Engineer* [Oxford: Clarendon Press, 1967], 99–101). For Ambleteuse, see Howard Montagu Colvin, "The King's Works in France," in *HKW*, 3:335–93, esp. 388–89 and pls. 42–45, and Hale, "Defence of the Realm," 391–92.

91. Jean Rotz, *The Maps and Text of the Booke of Idrography Presented by Jean Rotz to Henry VIII*, ed. Helen Wallis (Oxford: Oxford University Press for the Roxburghe Club, 1981), 9–16; D. G. Moir, "A History of Scottish Maps," in *The Early Maps of Scotland to 1850*, 3d rev. and enl. ed., 2 vols. (Edinburgh: Royal Scottish Geographical Society, 1973–83), 1:1–156, esp. 12–13; Barber, "England I," 35; and idem, "British Isles," 46–47. For a chart of the English Channel probably drawn by Rotz, see BL, Cotton MS. Aug. I.i.65, 66, partially reproduced in Barber, "England I," 36, and Marcus Merriman, *The Rough Wooings: Mary Queen of Scots, 1542–1551* (East Linton: Tuckwell, 2000), 44 and 154–55.

92. BL, Cotton MSS. Aug. I.i.49 and I.i.50: two anonymous sketch plans, seemingly originally enclosed in letters; Hale, "Defence of the Realm," 388.

93. See most recently, Merriman, *Rough Wooings*.



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

Size of the original: 31.5 × 50.5 cm. Photograph courtesy of the BL.

Edward VI).⁹⁴ 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.⁹⁵ 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.⁹⁶ 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 Paten's *Expedition into Scotland* (1548).⁹⁷ Lord Protector

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 plans 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).

95. D. R. Ransome, “The Early Tudors,” in *HKW*, 3:1–53, esp. 13, and Barber, “British Isles,” 46.

96. Hale, “Defence of the Realm,” 397. Marcus Merriman and John Newenham Summerson, “The Scottish Border,” in *HKW*, 4:607–726, esp. 698, 701, 704, 710, 712, 714, 718, and 724–25; Marcus Merriman, “The Platte of Castlemilk, 1547,” *Transactions of the Dumfriesshire and Galloway Natural History and Antiquarian Society* 44 (1967): 175–81, esp. 175–78; idem, “Italian Military Engineers in Britain in the 1540s,” in *English Map-Making*, 57–67, and pls. 20 and 28–30; and Barber, “England I,” 40–41, 54 n. 121. Most of these maps are now in the collections of the Duke of Rutland in Belvoir Castle, Rutland. Bullock’s map (TNA, MPF 257) is reproduced in Harvey, *Maps in Tudor England*, 48.

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 Reyner Wolfe. The drawings were discovered by Sir Charles

94. Edward VI’s diary reveals a schoolboy-like enthusiasm for fortification and for following feats of arms throughout Europe (see, for example, W. K. Jordan, ed., *The Chronicle and Political Papers of King*

Somerset was as adept at the psychological use of maps. In 1548 he prominently displayed a now-lost plat (“dessaing en plateforme”) of England’s impressive new fortification of Haddington in Scotland in the chamber in which he received the French ambassador.⁹⁸ 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.⁹⁹

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.¹⁰⁰ 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.”¹⁰¹ 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.¹⁰² At this point, with domestic rebellion and national bankruptcy threatening, the English government’s direct financing of mapping faltered.¹⁰³

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.¹⁰⁴ 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.¹⁰⁵

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.¹⁰⁶ 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, Herford-

shire, 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.¹⁰⁷

In an increasingly Protestant England, piety expressed itself cartographically through maps illustrating the literal

Oman in the 1890s and discussed and illustrated by him in “The Battle of Pinkie, Sept. 10, 1547,” *Archaeological Journal* 90 (1933): 1–25, together with a lithographed “facsimile” of the print (with minor differences in detail). This “facsimile,” which is likely to have been copied from the sole surviving copy of the original, was created to accompany publication 10 of the Bannatyne Club, David Constable’s edition of John Bertheville, *Recit de l’expedition en Ecosse l’an M.D. XLVI. et de la bataille de Musclevburgh* (Edinburgh: Bannatyne Club, 1825). The print was not noticed by Hind, presumably because no original had then come to light. The drawing by Ramsay and the woodcuts illustrating William Patten’s *The Expedition into Scotla[n]de of the Most Woorthely Fortunate Prince Edwarde, Duke of Somerset* (London: Richard Grafton, 1548), are illustrated in Hale, *Artists and Warfare*, 264–65. The drawings alone are illustrated in Sally Mapstone, *Scots and Their Books in the Middle Ages and the Renaissance*, exhibition catalog (Oxford: Bodleian Library, 1996), 29–30. The woodcuts in Patten’s work are illustrated in Delano-Smith and Kain, *English Maps*, 53, and illustrated and discussed in Merriman, *Rough Wooings*, 7–9 and 278. I am grateful to Ashley Baynton Williams for bringing the print to my notice and to Nick Millea for assistance with the related research.

98. Merriman, *Rough Wooing*, 35, although he wrongly implies that this was a three-dimensional model. See also Barber, “England I,” 40.

99. Colvin, “King’s Works in France,” 357–58, 363, and 369–72, and Hale, “Defence of the Realm,” 378–79 and 392–93.

100. Rotz, *Boke of Idrography*, 13–16, and Barber, “England I,” 41. BL, Add. Charter 12366, is a receipt of Nicolay, who is identified as a geographer, for 225 livres tournois for secret services done in England, dated 11 October 1547. I am grateful to David Buisseret for this reference.

101. *Calendar of State Papers, Foreign Series, of the Reign of Edward VI, 1547–1553*, ed. William B. Turnbull (London: Longman, Green, Longman, and Roberts, 1861), 15.

102. Roy C. Strong, *Art and Power: Renaissance Festivals, 1450–1650* (Woodbridge: Boydell, 1984), 47, and Merriman, *Rough Wooing*, 25–39. On pp. 35–36, Merriman reproduces woodcuts of the procession showing models of newly recaptured forts around Boulogne and banners portraying the Scottish forts being carried in procession.

103. Peter Barber, “England II: Monarchs, Ministers, and Maps, 1550–1625,” in *Monarchs, Ministers, and Maps*, 57–98, esp. 57–58.

104. TNA, MPC 64 (Southwark); TNA, MPI 221 (Norwich); TNA, MPB 49, 51 (York), discussed in Harvey, *Maps in Tudor England*, 68–69, with reproduction of detail from the plan of Norwich; Barber, “England I,” 37; Martha Carlin, “Four Plans of Southwark in the Time of Stow,” *London Topographical Record* 26 (1990): 15–56, and esp. 35–50; Peter Barber, “Liberties and Immunities,” in *Tales from the Map Room*, 132–33 (Southwark); Sarah Tyacke, “Introduction,” in *English Map-Making*, 13–19, esp. 16 (Norwich); and Harvey, “Symbolic Plans of a City,” 343 (York).

105. BL, Cotton MS. Aug. I.ii.69, illustrated in Harvey, *Maps in Tudor England*, 36. See also Hale, “Defence of the Realm,” 376.

106. Duffy, *Voices of Morebath*, 118–51.

107. Graham Haslam, “The Duchy of Cornwall Map Fragment,” in *Géographie du monde au Moyen Âge et à la Renaissance*, ed. Monique Pelletier (Paris: Éditions du C.T.H.S., 1989), 33–44.

truth of the gospels.¹⁰⁸ Maps of the Holy Land were produced as separate sheets and as illustrations in bibles. The earliest known map produced by the mapmaker and cleric John Rudd, in 1534, was a now-lost map of the Holy Land,¹⁰⁹ and in 1535 Holbein seems to have cooperated in the production of a woodcut map of Palestine showing the Exodus for the Coverdale Bible.¹¹⁰ Although most sixteenth-century printed maps of the Holy Land were to be found in bibles printed abroad, a woodcut map of the travels of St. Paul appeared in Reyner Wolfe's New Testament in 1549,¹¹¹ and in 1572 Richard Juge commissioned the instrument and die sinker at the royal mint in the Tower of London, Humfrey Cole, to produce a copperplate map to accompany the second edition of the Bishops' Bible. It was long believed to be the earliest surviving separately printed original map by an Englishman to have been printed and published in England.¹¹²

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).¹¹³ This focus is reflected in the geographical spread of the mapping that has come down to us.¹¹⁴ 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 south-west coast of England from Exeter to Land's End, and the north coasts of Cornwall and Somerset.¹¹⁵ 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 "platts of the Towne and porte," none of which apparently survive, being drawn up there in 1538/9.¹¹⁶ 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,¹¹⁷ 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.

109. David Marcombe, "John Rudd, a Forgotten Tudor Mapmaker?" *Map Collector* 64 (1993): 34–37, and idem, "Rudd, John," in *The Dictionary of National Biography: Missing Persons*, ed. C. S. Nicholls (Oxford: Oxford University Press, 1993), 573–74. Marcombe, however, wrongly identifies the map with that in the Coverdale Bible.

110. The Bible was published by James Nicholson in Southwark but was printed overseas. Delano-Smith and Ingram, *Maps in Bibles*, 144, and Elizabeth Morley Ingram, "The Map of the Holy Land in the Coverdale Bible: A Map by Holbein?" *Map Collector* 64 (1993): 26–31.

111. Reproduced in Catherine Delano-Smith, "Map Ownership in Sixteenth-Century Cambridge: The Evidence of Probate Inventories," *Imago Mundi* 47 (1995): 67–93, esp. 75.

112. Peter Barber, "Mapmaking in Humphrey Cole's England," and "Humphrey Cole's Map of Palestine," both in *Humphrey Cole: Mint, Measurement, and Maps in Elizabethan England*, ed. Silke Ackermann (London: British Museum, 1998), 11–13 and 97–100; Delano-Smith and Ingram, *Maps in Bibles*, 60–61, 69, 149 (E.1572); and Arthur Mayger Hind, *Engraving in England in the Sixteenth & Seventeenth Centuries: A Descriptive Catalogue with Introductions*, 3 vols. (Cambridge: Cambridge University Press, 1952–64), 1:79–80. The copy of the Adams/Jenkinson map of Muscovy of 1562 in Wrocław (for a fuller discussion and more precise dating of which see below) is now accepted as the earliest (fig. 57.6).

113. Hale, "Defence of the Realm," 374–75.

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. I.i.8 (anonymous, "The coste of England upon Severne," that is, the north coast of Somerset); I.i.31, 33 (anonymous, untitled map of Dorset coast from Poole to Lyme); I.i.35, 36, 38, 39 (anonymous, untitled chart of the southwest coast of England); I.i.53 (Richard Cavendish, untitled chart of southern Suffolk, Essex, north Kent, and the mouth of Thames); I.i.57 (Richard Cavendish, untitled chart of Essex and Suffolk coasts); I.i.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. I.ii.71 (untitled chart of marches of Calais probably by Thomas Pettyt, ca. 1550).

116. Elisabeth Stuart, *Lost Landscapes of Plymouth: Maps, Charts and Plans to 1800* (Stroud, Gloucestershire: Alan Sutton in association with Map Collector Publications, 1991), 77.

117. Cotton MSS. Aug. I.i.8 (anonymous, "The coste of England upon Severne," that is, the north coast of Somerset), I.i.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.¹¹⁸ 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.¹¹⁹ 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.¹²⁰

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.¹²¹ 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.¹²² 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'inghilterra" 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."¹²³

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 Ply-

mouth, 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.¹²⁴

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).¹²⁵

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 Borgh and Richard Couch(e) in 1539 (BL, Cotton MS. Aug. I.ii.29; fig. 58.1) and the presentation map showing Anne of Cleves'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. I.i.53, I.i.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. Loades (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. I.i.29. The ships on a 1546 plan of Ambleteuse (BL Cotton MS. Aug. I.ii.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.

120. BL, Cotton MS. Aug. I.i.22, 23; Payne, "Artistic Survey," 20.

121. The plan of the Scheldt is reproduced in Harvey, "Local and Regional Cartography," 488–89; the "Long View" is BL Cotton MS. Aug. I.i.35, 36, 38, 39.

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

123. Peter Samuel Donaldson, "George Rainsford's 'Ritratto d'inghilterra,'" *Camden Miscellany*, 4th ser., 22 (1979): 49–111, esp. 104–5; also cited in Hale, "Defence of the Realm," 395.

124. BL, Cotton MSS. Aug. I.i.54 (contains vignette bird's-eye views of Canterbury, Ipswich, Rochester, and Sandwich), I.i.18 (anonymous, untitled pictorial map of Brighton), I.i.34 (anonymous, untitled chart of Mount's Bay), I.ii.1 (anonymous, untitled map of Scarborough), I.i.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. I.i.22, 23 (Richard Lee [?], "The Haven of Dover"); I.i.26 (anonymous, untitled plan of Dover and harbor);



FIG. 54.5. ANONYMOUS, DETAIL FROM MAP OF CANTERBURY. Size of the original: 66 × 91 cm; detail ca. 17.1 × 12.9 cm. Photograph courtesy of the BL (Cotton MS. Aug. Li.53).

Henry, with a newly acquired cartographic sophistication, paid very close attention to the plans, even to the extent of proposing the design of some fortifications himself (although the actual drawing seems in most, but apparently not all, cases to have been delegated to others).¹²⁶ As Shelby demonstrated in his biography of one of the most active mapmakers and military engineers, John Rogers, Henry repeatedly had plats drafted, demanded to see plats of proposed works, and commented on them before any work was undertaken and while the work was proceeding.¹²⁷ This close scrutiny and Henry's demand for precision forced the engineers to give their best and to experiment to meet their master's requirements. While traditional elevations and pictorial plats continued to be produced, maps and plans to a consistent scale now put in their relatively premature appearance, depicting proposed forts, modifications to harbors, the terrain surrounding forts, and such disputed areas as the land between Calais and Boulogne.¹²⁸ The mid-1540s saw the creation of the first English ichnographic town plan, of Portsmouth of 1545,¹²⁹ an isometric view of the royal manor house in Hull,¹³⁰ scale maps of Dover harbor,¹³¹

and scale maps, with techniques for depicting relief that anticipated contouring and hill shading, for the country

I.i.59 (John Rogers, "Ambletw" [Ambleteuse]); I.ii.8 (anonymous [Anthony Anthony?], "Haven Etewe" [Ambleteuse]); I.ii.68 (John Rogers, untitled plan of fortifications for Ambleteuse); I.ii.73 (John Rogers, "Haven Etue" [Ambleteuse]); I.i.81 (anonymous, untitled plan of Portsmouth); I.ii.7 (Gian Tommaso Scala[?], untitled plan of Tynemouth Abbey and castle); I.ii.12 (anonymous, untitled plan of Guines castle); I.ii.23 (anonymous, "The towne and castle of Guynes"); I.ii.51 (anonymous, plan of fortifications of Guines); I.ii.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); I.i.11 (anonymous, "the castel of Carliell"); Aug. I supps. 8 and 9 (two fragments of an untitled plan of the fortifications of Carlisle by Stephan von Haschenperg); I.ii.57 (Thomas Petyt[?], untitled plan of Calais and its harbor); Aug. I.i.84 (John Rogers, endorsed "A new plat made by the same Rogers of the king his hyghnis mannor of Hulle, the xxvth of June"); Aug. I.ii.11, 13 (John Rogers, two untitled plans of King's mannor house in Hull); 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 Tynemouth and Newcastle"); Aug. I.ii.53 (John Rogers, endorsed "of Boullen wt a devyes of a campe for the wynnyng of the frenshe fortyfyacon foranest bullen"); Aug. I.ii.75 (John Rogers [?], "Country of Guynes and Bolenois"); Aug. I.ii.77 (John Rogers, "Boleine with the French Fortresse and the Country towards Hardilo"); Aug. I.ii.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 Tempallen [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).

127. Shelby, *John Rogers*, 24–27, 36–37, 46–48, 54–55, 59–60, 76–77 and 86–87.

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.

129. P. D. A. Harvey, "The Portsmouth Map of 1545 and the Introduction of Scale Maps into England," in *Hampshire Studies*, ed. John Webb, Nigel Yates, and Sarah E. Peacock (Portsmouth: Portsmouth City Records Office, 1981), 33–49.

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

131. BL, Cotton MS. Aug. I.i.26. The compulsion to experiment can also be seen in the introduction into this plan—and another of the mouth of the Thames (Cotton MS. Aug. I.i.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 1544.¹³² 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.¹³³ It is unproven that they learned anything from the Italian engineers employed by Henry, like Giovanni di Rosetti or Gian Tommaso Scala (whose surviving work is far from impressive, despite their theoretical knowledge of and boasting about the latest Italian defense ideas).¹³⁴ 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 Liveries¹³⁵—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”¹³⁶) 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.¹³⁷ There they remained, albeit in diminishing numbers, as a resource until their final dispersal at about the time of the Civil Wars.¹³⁸

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

132. BL, Cotton MS. Aug. I.ii.77, by John Rogers. A scale plan by Rogers of the same area of about the same period (1546) (Cotton MS. Aug. I.ii.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. W. L. D. Ravenhill, “Mapping a United Kingdom,” *History Today* 35 (October 1985): 27–33, esp. 28, has pointed out that Jean Rotz's *Boke of Idrography*, presented to Henry VIII in 1542, contains one of the earliest explanations of triangulation in English.

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 Ardres 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).

135. Shelby, *John Rogers*, 134. For Thomas Cromwell's support of his successful attempt to marry the daughter of Sir Richard Grenville, the high marshal of Calais and an in-law of Lord Lisle, the lord deputy of Calais and an illegitimate son of Edward IV, see *The Lisle Letters: An Abridgement*, ed. Muriel St. Clare Byrne (London: Secker and Warburg, 1983), 295 and 297. Adrian Henry Wardle Robinson, *Marine Cartography in Britain: A History of the Sea Chart to 1855* (Leicester: Leicester University Press, 1962), 145–51, gives short biographies of Lee, Cavendish, Rogers, and several other of Henry's engineers.

136. BL, Harley MS. 1419, fol. 134. Such relief models had become increasingly common in Europe after 1500, but this seems to be the earliest recorded English example (David Buisseret, “Modeling Cities in Early Modern Europe,” in *Envisioning the City: Six Studies in Urban Cartography*, ed. David Buisseret [Chicago: University of Chicago Press, 1998], 125–43, esp. 125–27).

137. Conyers Read, *Mr. Secretary Walsingham and the Policy of Queen Elizabeth*, 3 vols. (Oxford: Clarendon Press, 1925), 1:431, and Barber “England I,” 43–44.

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 Necessary Rules of Geographie, Seruing for the Vnderstanding 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 be-

longed 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 Nauigation* (1561), a translation of Martín Cortés's *Breue compendio de la sphaera y de la arte de navegar* (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

139. See Barber, "England I," 39–40; Shelby, *John Rogers*, 69, 76–77, 95–96, 100–101; Hale, "Defence of the Realm," 365–401; and Merriman and Summerson, "Scottish Border," 607–726. Sir Anthony Browne manifested his interest most spectacularly in the murals and panel paintings in Cowdray Park, his splendid country seat in Sussex. See W. H. St. John Hope, *Cowdray and Easebourne Priory in the County of Sussex* (London: Country Life, 1919).

140. Barber, "England II," 68–69.

141. Joyce A. Youings, *Sixteenth-Century England* (Harmondworth: Penguin, 1984), 120–21, 194, 196, 344, and 371. She points out that beyond the nobility and gentry, the highest rate of literacy, that of the well-to-do yeomen, was no more than 40 percent. See also Rosemary O'Day, "An Educated Society," in *The Oxford Illustrated History of Tudor & Stuart Britain*, ed. John Morrill (Oxford: Oxford University Press, 1996), 119–38, esp. 119–21.

142. Colin Clair, "Christopher Plantin's Trade-Connexions with England and Scotland," *Library*, 5th ser., 14 (1959): 28–45, esp. 29–32; E. G. R. Taylor, *Tudor Geography, 1485–1583* (London: Methuen, 1930), 99; Abraham Ortelius, *Abrahami Ortelii (geographi antuerpiensis) et virorum eruditiorum ad eundem et ad Jacobum Colium Ortelianum . . . Epistulae . . . (1524–1628)*, ed. Jan Hendrik Hessels, *Ecclesiae Londino-Batavae Archivum*, vol. 1 (1887; reprinted Osnabrück: Otto Zeller, 1969), 103–4 (letter 43; Nicholas Reynolds to Ortelius ca. 1563; now the BL, Add. MS. 63650 Q); Jan Denucé, *Oud-Nederlandsche kaartmakers in betrekking met Plantijn*, 2 vols. (Antwerp: De Nederlandsche Boekhandel, 1912–13; reprinted Amsterdam: Meridian, 1964), 1:4–5 and 21; and more recently (although it relates only to sheet maps) Delano-Smith, "Map Ownership."

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.

145. Peter Barber, "Was Elizabeth I Interested in Maps—And Did It Matter?" *Transactions of the Royal Historical Society*, 6th ser., 14 (2004): 185–98.

146. See M. J. Rodríguez-Salgado, *Armada, 1588–1988: An International Exhibition to Commemorate the Spanish Armada* (London: Penguin Books in association with the National Maritime Museum, 1988), 209–10, with references, and Lesley B. Cormack, *Charting an Empire: Geography at the English Universities, 1580–1620* (Chicago: University of Chicago Press, 1997), 91–105. Bourne was still complaining of English sailors' dependence on foreign-produced charts. Eden's work went through nine editions between 1572 and 1630. For the lasting influence of the original text and the translation, see David

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.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 Surveior'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.¹⁴⁸

Awareness of the cartographic dimension did not necessarily guarantee the appearance of maps. Raphael Holinshed 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 Holinshed'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.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.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.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.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.

Watkin Waters, *The Art of Navigation in England in Elizabethan and Early Stuart Times* (London: Hollis and Carter, 1958), 39–71, 100–113, 130, 148–51, 215–16, and 315–19. In the proposals for the education of Elizabeth's wards, in his *Queene Elizabethes Achademy* (1570), Walter Raleigh's half-brother, Sir Humphrey Gilbert, provided for "one [lecturer] who shall teach to draw mappes, sea charts, &c., and to take by view of eye the platte of any thing" (J. R. Hale, "The Military Education of the Officer Class in Early Modern Europe," in *Cultural Aspects of the Italian Renaissance*, ed. Cecil H. Clough [New York: A. F. Zambelli, 1976], 440–61, esp. 442, I am grateful to David Buisseret for this reference; and Cormack, *Charting an Empire*, 22). Although Gilbert's proposal went unrealized, his ideas were characteristic of those in his circle.

147. Delano-Smith and Kain, *English Maps*, 153–56; Waters, *Art of Navigation*, 82, 89–90, 113, 120–21, 151, 496, and 535–36; Andrews, *Trade, Plunder and Settlement*, 106–7, 138–39, and 167; and Helen Wallis, "The Cartography of Drake's Voyage," in *Sir Francis Drake and the Famous Voyage, 1577–1580: Essays Commemorating the Quadricentennial of Drake's Circumnavigation of the Earth*, ed. Norman J. W. Thrower (Berkeley: University of California Press, 1984), 121–63, esp. 131.

148. Lewes Roberts, *The Merchants Mappe of Commerce* (London, 1638), in the Epistle (n. p.).

149. R. A. Skelton, *Saxton's Survey of England and Wales: With a Facsimile of Saxton's Wall-Map of 1583* (Amsterdam: Nico Israel, 1974), 8, 10, 12, and 16, and idem, comp., *County Atlases of the British Isles, 1579–1850: A Bibliography* (Folkestone: Dawson, 1978), 25–28.

150. Cormack, *Charting an Empire*, 117–28.

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.

152. J. H. Andrews, *Plantation Acres: An Historical Study of the Irish Land Surveyor and His Maps* (Belfast: Ulster Historical Foundation, 1985).

After 1550, as Worms and Luborsky and Ingram have demonstrated, a growing number of books printed in England were illustrated by maps.¹⁵³ Until the 1570s such illustrations, which were sometimes to be found in frontispieces, 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 Cuninghame's *Cosmographical Glasse*, 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.¹⁵⁴ Richard Hakluyt's *Divers Voyages Touching the Discoverie of America* (1582) was even accompanied by a woodcut reproduction 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 1553.¹⁵⁵ 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 so-called Copperplate map of London of about 1557–59, which was published and probably also engraved in the Netherlands.¹⁵⁶ In contrast the Anthony Jenkinson/Clement 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.¹⁵⁷

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 making of cartes or mappes, and the scarcyte and price of suche cartes witheyn this realme of England."¹⁵⁸ 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.¹⁵⁹ 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.¹⁶⁰

PATRONS

The Crown

When one turns to the question of support for mapmaking, there appears to be a dramatic change following

153. See chapter 57 in this volume and Ruth Samson Luborsky and Elizabeth Morley Ingram, *A Guide to English Illustrated Books, 1536–1603*, 2 vols. (Tempe, Ariz.: Medieval and Renaissance Text and Studies, 1998).

154. Humfrey Cole's map of Canaan was, for instance, a very close copy of Ortelius's map of the same area of 1570 and ultimately derived from Tilemann Stella's map, although the decorative features differed (Barber, "Cole's Map of Palestine," 97–100).

155. Günter Schilder, *Monumenta cartographica Neerlandica* (Alphen aan den Rijn: Canaletto, 1986–), 2:94–98; Robert W. Karrow, *Mapmakers of the Sixteenth Century and Their Maps: Bibliographies of the Cartographers of Abraham Ortelius, 1570* (Chicago: For the Newberry Library by Speculum Orbis Press, 1993), 252; and Hind, *Engraving in England*, 1:56–57. The map is now in the BNF, Rés. Ge B 2112.

156. James L. Howgego, *Printed Maps of London, circa 1553–1850*, 2d ed. (Folkestone: Dawson, 1978), 10–11. See also fig. 54.16 and the section on mapping the towns, pp. 1648–57.

157. For the Muscovy map, in the Biblioteka Uniwersytecka, Wrocław, see fig. 57.6 and Samuel H. Baron, "The Lost Jenkinson Map of Russia (1562) Recovered, Redated and Retitled," *Terrae Incognitae* 25 (1993): 53–65, who suggests (63–65) that the map's creator was probably Clement Adams, the engraver of Cabot's lost world map of 1549 and of a lost map of the Anglo-Scottish border of 1550, working on written information supplied by Jenkinson. Baron also suggests that the surviving example is probably a second edition dating from shortly after 1564 and incorporating the fruits of Jenkinson's second expedition. Krystyna Szykula, in the English summary of her "Mapa Rosji Jenkinsona (1562)—koljne Podsumowanie Wykinów Badeń," *Czasopismo Geograficzne* 71 (2000): 67–97, esp. 96–97, pushes the date of the Wrocław example forward to 1567–68. I am grateful to Krystyna Szykula for providing me with a copy of this article. See also Karrow, *Mapmakers of the Sixteenth Century*, 318, and Krystyna Szykula, "The Newly-Found Jenkinson's Map of 1562," in *13th International Conference on the History of Cartography . . . Abstracts* (Amsterdam, 1989), 38–39 and 109–11; Hind, *Engraving in England*, 1:99; Valerie G. Scott, "Map of Russia Revealed at Conference," *Map Collector* 48 (1989): 38–39; and "The Jenkinson Map," *Map Collector* 52 (1990): 29. For Saxton's wall map of England and Wales, see pp. 1627–31.

158. Armando Cortesão and A. Teixeira da Mota, *Portugaliae monumenta cartographica*, 6 vols. (Lisbon, 1960; reprinted with an introduction and supplement by Alfredo Pinheiro Marques, Lisbon: Imprensa Nacional-Casa de Moeda, 1987), 2:5; Waters, *Art of Navigation*, 84 n. 1; and Peter Barber, commentary to *The Queen Mary Atlas*, by Diogo Homem (London: Folio Society, 2005), 31–36.

159. For Fernandes, who was the pilot for the Roanoke voyages of 1584–88 and was associated with John Dee, see David B. Quinn, *England and the Discovery of America, 1481–1620 . . .* (London: Alfred A. Knopf, 1974), 246–63. For a volume of Dutch manuscript sailing directions with charts once owned by Lord Burghley, see Hatfield House, CPM supp. 17, mentioned in R. A. Skelton and John Newenham Summerson, *A Description of Maps and Architectural Drawings in the Collection Made by William Cecil, First Baron Burghley, Now at Hatfield House* (Oxford: Roxburghe Club, 1971), 69 (no. 123); reproduced and discussed in Rodríguez-Salgado, *Armada*, 208.

160. See chapter 58 in this volume.

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, Federico 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.

162. John Newenham Summerson, "The Defence of the Realm under Elizabeth I," in *HKW*, 4:402–14, esp. 409–14, for brief biographies of the individual engineers, and see the discussion of individual forts and harbors in the same volume; Barber, "England II," esp. 57–62; J. H. Andrews, "The Irish Surveys of Robert Lythe," *Imago Mundi* 19 (1965): 22–31; idem, "Geography and Government in Elizabethan Ireland," in *Irish Geographical Studies in Honour of E. Estyn Evans*, ed. Nicholas Stephens and Robin E. Glasscock (Belfast: Queen's University of Belfast, 1970), 178–91; idem, "The Irish Maps of Lord Carew: An Exhibition in the Library of Trinity College, Dublin," unpublished typescript, n.d. [1983], Department of Manuscripts, Trinity College, Dublin; idem, *Shapes of Ireland*, 57–117; chapter 55 in this volume; Gerard Anthony Hayes-McCoy, ed., *Ulster and Other Irish Maps, c. 1600* (Dublin: Stationery Office for the Irish Manuscripts Commission, 1964); Rolf Loeber, "Biographical Dictionary of Engineers in Ireland, 1600–1730," *Irish Sword: The Journal of the Military History Society of Ireland* 13 (1977–79): 30–44, 106–22, 230–55, 283–314, esp. 240–41 (Ives); Delano-Smith and Kain, *English Maps*, 155–56, citing Hatfield House, CPM.II.37a (Robert Norman, untitled chart of the Thames estuary, 1580), and Hatfield House, CPM.II.33 (anonymous, untitled map of Portsmouth and adjoining country, ca. 1587); BL, Cotton MS. Aug. I.i.44 (Richard Poulter, untitled chart of east coast of England, 1584); and see Skelton and Summerson, *Description of Maps*, esp. nos. 43, 44, 49, 51, and 52. For illustrations and good explanatory text, see Rodríguez-Salgado, *Armada*, 69 (anonymous, Berwick, ca. 1570: BL Cotton MS. Aug. I.ii.14); 147 (anonymous, untitled chart of Medway and mouth of Thames, ca. 1567–85: BL Cotton MS. Aug. I.i.52); 148 (Edmund Yorke, untitled map of coastal defenses, Weybourne, Norfolk, 1588: Hatfield House CPM.II.56); 148 (Edmund Yorke, untitled map of Great Yarmouth and neighborhood, 1588: Hatfield House CPM.I.37); 171 (Richard Poulter, "The discipicions of Saint Sebastians in biskye June 1585": Cotton MS. Augustus I.i.16); 255 (Federigo Gianibelli, untitled map of Plymouth and Plymouth Sound, 1602: BL, Cotton MS. Aug. I.i.40); 255 (anonymous, untitled map of Portland and Weymouth Bay, ca. 1590–1600: Cotton MS. Aug. I.i.32); 256 (anonymous, untitled chart of Medway and mouth of the Thames, ca. 1580: Hatfield House CPM.II.47).

163. For his association with Robert Dudley, see Simon Adams, ed., *Household Accounts and Disbursement Books of Robert Dudley, Earl of Leicester, 1558–1561, 1584–1586* (Cambridge: Cambridge University Press for the Royal Historical Society, 1995), 435, 456, and 461.

164. Hatfield House CPM.II.43 (reproduced in Rodríguez-Salgado, *Armada*, 118, and Skelton and Summerson, *Description of Maps*, 65), and BL, Cotton MS. Aug. I.ii.105. For Adams, see John Newenham Summerson, "The Works from 1547 to 1660," in *HKW*, 3:55–168, esp. 94–96, and Summerson, "Defence of the Realm under Elizabeth," 412–13.

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.

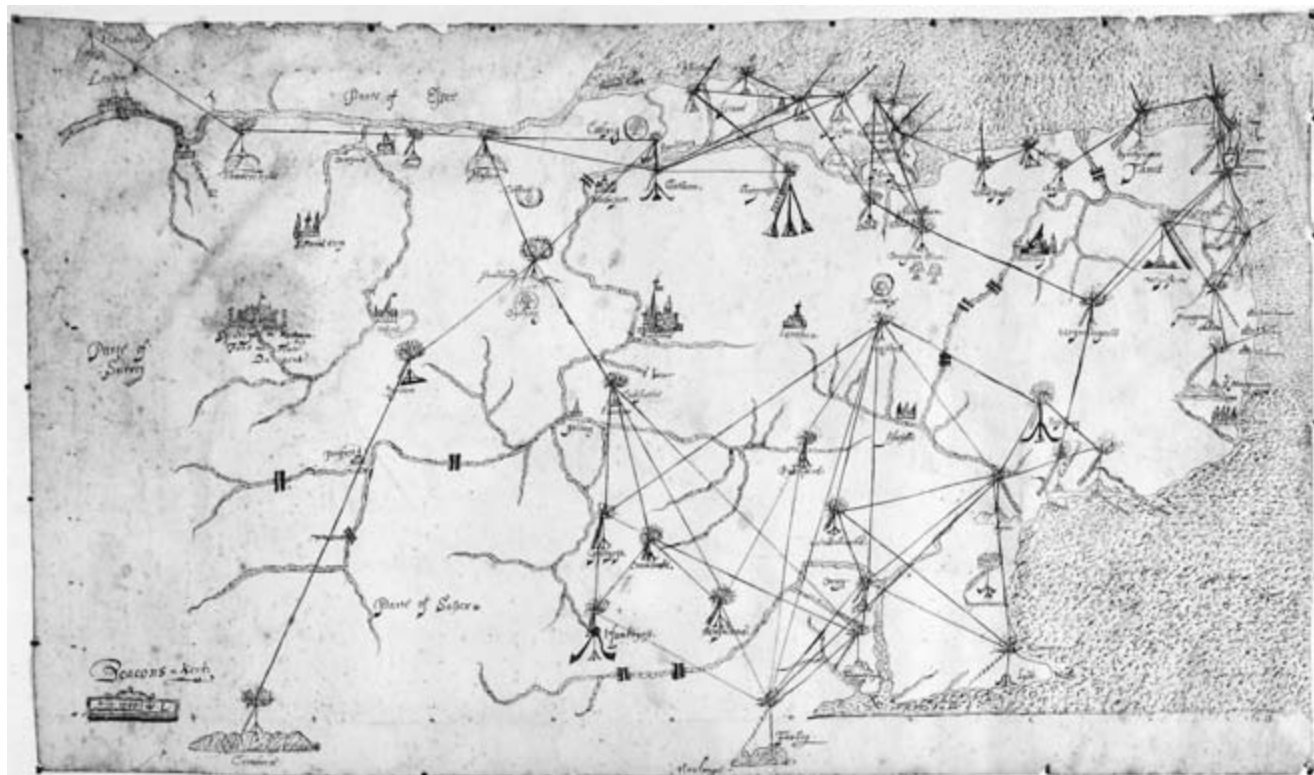


FIG. 54.6. WILLIAM LAMBARDE, MAP OF THE KENT BEACONS, 1585.

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

threats of invasion in the following decade.¹⁶⁹ 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 1594.¹⁷⁰ 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.¹⁷¹ 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).¹⁷² 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;¹⁷³ another soldier, John Thomas, serving in Ireland in the 1590s;¹⁷⁴ the East Anglian squire Sir Edmund Yorke; and even commanders like Sir John Norris and Humphrey Gilbert, also contributed.¹⁷⁵ 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 permyts not . . . Mad in hast this fyrst of May. 1588."¹⁷⁶

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

169. BL, Cotton MS. Aug. I.i.17, reproduced in Rodríguez-Salgado, *Armada*, 209.

170. BL, Cotton MS. Aug. I.ii.58.

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.

173. His works include an account of the campaign in the Netherlands (1572–74) illustrated by (plagiarized) maps (All Souls' College Oxford, MS. 129), and maps of Flushing and Bergen-op-Zoom, 1588 (BL, Cotton MSS. Aug. I.ii.107, 115); see Barber, "England II," 95 n. 152, and Anna E. C. Simoni, "Walter Morgan Wolff: An Elizabethan Soldier and His Maps," *Quaerendo* 26 (1996): 58–76.

174. For example, a pictorial plan of the storming of Enniskillen Castle ("Eneskillin Castell"), 1593, BL Cotton MS. Aug. I.ii.39 (reproduced in Harvey, *Maps in Tudor England*, 63).

175. Barber, "England II," 60–61.

176. Hatfield House, CPM.II.56; Skelton 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-

177. Barber, "England II," 62–66, and see below for a fuller discussion.

178. Skelton and Summerson, *Description of Maps*.

179. Barber, "England II," 68–77; Andrews, "Geography and Government"; and Barber, "Was Elizabeth I Interested in Maps?" 191–92, 195, and 197.

180. Bendall, *Dictionary*, 1:65.

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 Lhuud, as well as charts, maritime atlases, and Waghenauer's *Spiegel der zeevaerd*. 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 Cuninghame dedicated his *Cosmographical Glasse, Conteynyng the Pleasant Principles of Cosmographie, Geographie, Hydrographie or Nauigation* (London: Ioan Daij, 1559) to Leicester and lauded his scientific interests.

182. Barber, "England II," 65 and 68.

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, 1985), 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. Hulston (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) (Cortêsão and Teixeira da Mota, *Portugaliae monumenta cartographica*, 1:137–44, pls. 66–68, and see João de Castro, *Le routier de Don Joam de Castro*, trans. Albert Kemmerer [Paris: P. Geuthner, 1936]).

tatives 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).¹⁸⁴ There was also George Carew, Baron Carew of Clopton 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).¹⁸⁵ 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.¹⁸⁶ 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 Firlé 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,¹⁸⁷ 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 Waghenauer'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).¹⁸⁸ 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.¹⁸⁹ 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.¹⁹⁰ 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.¹⁹¹ Dispatches from Normandy and Brittany, Ireland, or the Netherlands, sketching the course of campaigns in the 1580s and 1590s;¹⁹² proposals relating to the drainage of Romney Marsh;¹⁹³ and accounts of the estates of minors that were being administered by the Court of Wards or of the confiscated estates of traitors like the earls of Arundel¹⁹⁴ had maps enclosed with them. Episcopal lands administered by the crown in the intervals between

bishops—a finance-raising maneuver of which Elizabeth was particularly fond—similarly got mapped.¹⁹⁵

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

184. Barber, "England II," 67–68; Andrews, *Shapes of Ireland*, 61 and 67; and idem, "Lythe."

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.

187. Bendall, *Dictionary*, 1:25–26.

188. Barber, "England II," 64–66; Edward Lynam, "English Maps and Mapmakers of the Sixteenth Century," in *Mapmaker's Art*, 55–78, esp. 68; and Rodríguez-Salgado, *Armada*, 209.

189. Bendall, *Dictionary*, 1:23, and A. Sarah Bendall, "Pride of Ownership," in *Tales from the Map Room*, 94–95.

190. Victor Morgan, "The Cartographic Image of 'The Country' in Early Modern England," *Transactions of the Royal Historical Society*, 5th ser., 29 (1979): 129–54, esp. 140–41.

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. I.i.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. I.ii.92 (siege of Nijmegen, 1586); Cotton MS. Aug. I.ii.90 (siege of Rouen, 1591); and Cotton MS. Caligula E.ix. f.276 (Brest, 1594).

193. Bendall, "Romney Marsh," 38–39.

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. I.i.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.¹⁹⁶ From the 1580s they also used maps as a tool of estate management.¹⁹⁷

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.¹⁹⁸

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.¹⁹⁹ 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 1559.²⁰⁰ 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.²⁰¹ 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 Navegar*.²⁰²

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 copper-

196. Andrews, *Trade, Plunder and Settlement*, 109–10, 143–44, 145, 169, 205, 244 and 285; Read, *Mr. Secretary Walsingham*, 3:370–410; and Skelton and Summerson, *Description of Maps*, 35. For the maps, see P. H. Hulton and David B. Quinn, *The American Drawings of John White, 1577–1590*, 2 vols. (London: Trustees of the British Museum, 1964), vol. 2; R. A. Skelton, *Explorers' Maps: Chapters in the Cartographic Record of Geographical Discovery* (1958; reprinted with revisions, London: Spring, 1970), 105–9. Dee's instructions for Pet and Jackman are among the Burghley papers in the BL (Lansdowne MS. 122 art. 5), and Dee's map of the Northeast Passage, illustrating the instructions, in Lord Burghley's Ortelius atlas, is still with his descendants in Burghley House, Northants (for which see Skelton and Summerson, *Description of Maps*, 19, 69–70, no. 124) and, for a reproduction, Susan Doran, ed., *Elizabeth I: The Exhibition at the National Maritime Museum* (London: Chato and Windus in association with the National Maritime Museum, 2003), 159 (no. 172).

197. See the section on mapping the countryside, pp. 1637–48.

198. Peter Eden, "Three Elizabethan Estate Surveyors: Peter Kempe, Thomas Clerke, and Thomas Langdon," in *English Map-Making*, 68–84.

199. BL, Cotton MS. Aug. I.i.74, illustrated in Tyacke and Huddy, *Saxton and Tudor Map-Making*, fig. 16, Harvey, *Maps in Tudor England*, 76.

200. This is more fully discussed later in this chapter.

201. For the Oxbridge colleges, see A. Sarah Bendall, *Maps, Land and Society: A History, with a Carto-Bibliography of Cambridgeshire Estate Maps, c. 1600–1836* (Cambridge: Cambridge University Press, 1992); David H. Fletcher, *The Emergence of Estate Maps: Christ Church, Oxford, 1600 to 1840* (Oxford: Clarendon, 1995); and John Schofield, ed., *The London Surveys of Ralph Treswell* (London: London Topographical Society, 1987). Judith Etherton, "New Evidence—Ralph Treswell's Association with St Bartholomew's Hospital," *London Topographical Record* 27 (1995): 103–17, gives a good impression of the ongoing relationship between a surveyor and his corporate patron. See Martin Devereux, Stacey Gee, and Matthew Payne, *Lords of All They Survey: Estate Maps at Guildhall Library*, exhibition catalog (London: Guildhall Library Publications, 2004).

202. Andrews, *Trade, Plunder and Settlement*, 29.

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 Raleigh 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*

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*, 1:59–65. And see chapters 57 and 58 in this volume.

204. Youings, *Sixteenth-Century England*, 112, 119, 324, and 344. As well as the continuing popularity of Elyot's *Boke Named the Governour*, Sir Thomas Hoby's English translation of Castiglione's *Il Cortegiano*, first published in 1561, stressed that the ability "to drawe oute countreys, plattefourmes, ryvers, brydges, castelles, houldes, fortresses, and suche other matters," though then "counted an handy-craft" was in fact "moste noble and worthy" (Baldassare Castiglione, *The Book of the Courtier*, trans. Thomas Hoby [London: D. Nutt, 1900], 91–92). For the influence of Henry Peacham, *The Compleat Gentleman: Fashioning Him Absolute in the Most Necessary & Commendable Qualities Concerning Minde or Bodie That May Be Required in a Noble Gentleman* (London: Francis Constable, 1622), see Karen Hearn, *Nathaniel Bacon: Artist, Gentleman and Gardener*, exhibition catalog (London: Tate Publishing, 2005), 14–15.

205. Cormack, *Charting an Empire*.

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

207. Frederick John North, "The Map of Wales," *Archaeologia Cambrensis* 90 (1935): 1–69, esp. 47–54 and 65–68; Iolo Roberts and Menai Roberts, "De Mona Druidum Insula," in *Abraham Ortelius and the First Atlas: Essays Commemorating the Quadricentennial of His Death, 1598–1998*, ed. M. P. R. van den Broecke, Peter van der Krogt, and Peter H. Meurer ('t Goy-Houten: HES, 1998), 347–61; Carl T. Berkhout, "Laurence Nowell (1530–ca. 1570)," in *Medieval Scholarship: Biographical Studies on the Formation of a Discipline*, 3 vols., ed. Helen Damico et al. (New York: Garland Publishing, 1995–98), 2:3–17; Peter Barber, "A Tudor Mystery: Laurence Nowell's Map of England and Ireland," *Map Collector* 22 (1983): 16–21; and Barber, "British Isles," 68. Lhuyd's map of Wales, with place-names in Welsh, Latin, and English, was published by Ortelius in 1573, five years after Lhuyd's death (he may also have produced a similar map of England and Wales with historical place-names that was never published) whereas Nowell's map, which occupies several openings, remains in manuscript among the Cotton manuscripts of the BL (Cotton MS. Domitian XVIII). In 1568, however, William Lambarde, Nowell's close friend, fellow humanist, and inheritor of Nowell's papers, produced a printed map of England containing place-names in Anglo-Saxon characters, to illustrate his *Αρχαιονομια, sive depriscisanglorum legibus, libri, sermone Anglico . . .* (London: Joannis Daij, 1568): seemingly the earliest surviving map of England to be cut in England (Shirley, *Early Printed Maps of the British Isles*, 41). I am grateful to Laurence Worms for bringing this to my attention. See also Karrow, *Mapmakers of the Sixteenth Century*, 344–48.

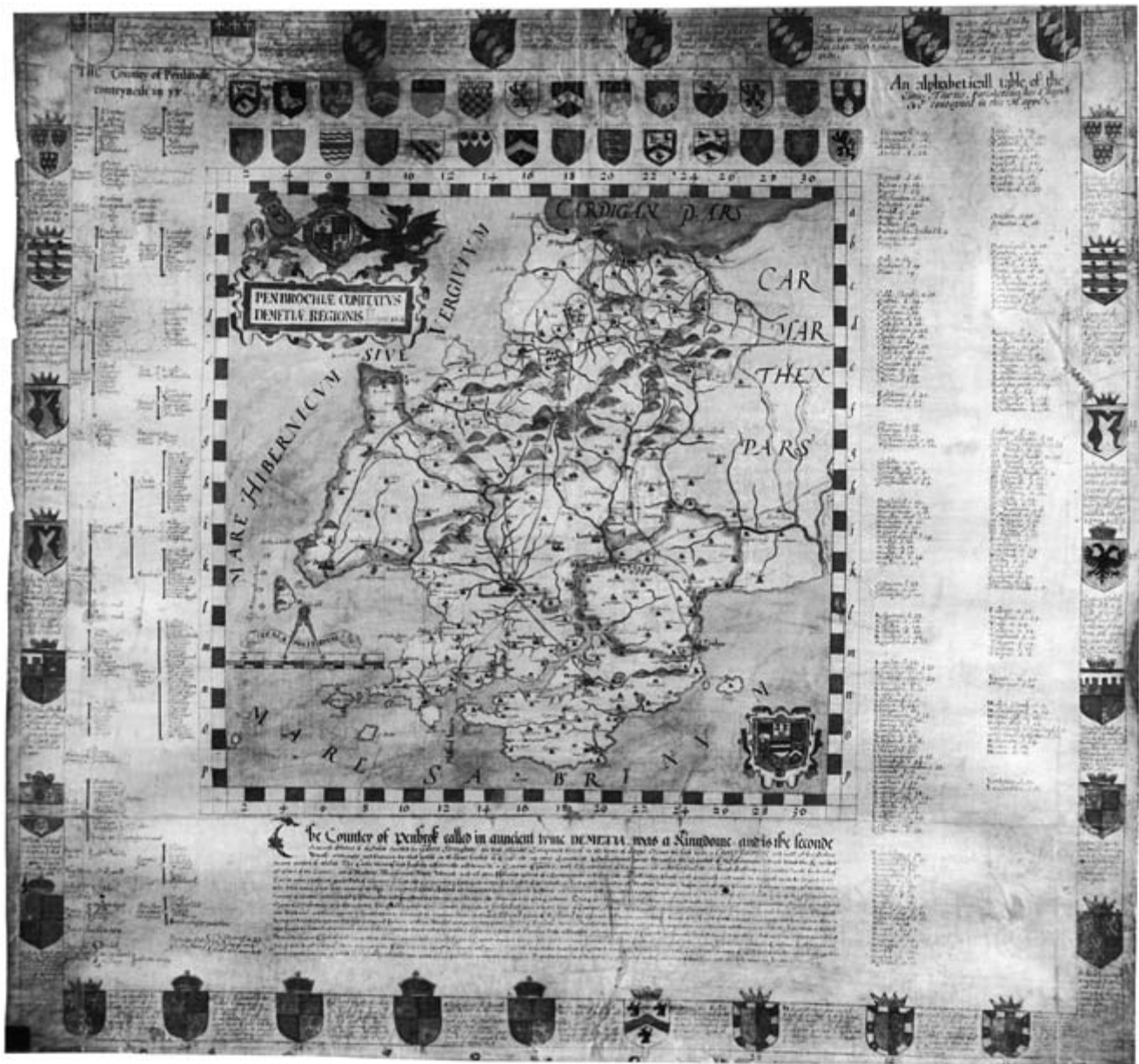


FIG. 54.7. GEORGE OWEN, MAP OF PEMBROKESHIRE. Size of the original: 61 × 65 cm. By permission of Llyfrgell

Genedlaethol Cymru/The National Library of Wales, Aberystwyth (PZ 3681).

of the World.²⁰⁸ 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.²⁰⁹

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 Cuningham, 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 mapmaking²¹⁰ (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 Gerardus Mercator's projection, and he gave the earliest written explanation of the projection in his *Certaine Errors of Navigation*.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.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,²¹³ one gains the impression that by and large the theorists were treated with benevolent condescension.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.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.²¹⁶ It was a similar story in the 1590s, when Burghley was the recipient of tracts and advice on land surveying from Ralph Agas.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.”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 Raleigh; 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.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

210. Taylor, *Mathematical Practitioners of Tudor & Stuart England*; the relevant biographies in *Biographical Dictionary of Mathematicians*, 4 vols. (New York: Scribner, 1991); Silke Ackermann, ed., *Humphrey Cole: Mint, Measurement, and Maps in Elizabethan England* (London: British Museum, 1998); Gerard L'Estrange Turner, *Elizabethan Instrument Makers: The Origins of the London Trade in Precision Instrument Making* (Oxford: Oxford University Press, 2000), 3–43; idem, “Mathematical Instrument-Making in London in the Sixteenth Century,” in *English Map-Making*, 93–106; Stephen Andrew Johnston, “Mathematical Practitioners and Instruments in Elizabethan England,” *Annals of Science* 48 (1991): 319–44, esp. 330–41; Barber, “England I,” 42; and Barber, “England II,” 58–63, 67–68, 70, and 79. See also chapter 57 in this volume. The enormous influence of cartographers and instrumentmakers born in the north of England is striking and in terms of mutual influence may be significant: Laurence Nowell was from Rochdale in Lancashire and John Elder's patrons, the Earl and Countess of Lennox, were based in Yorkshire, the home county of Rudd, Saxton, Cole, and possibly Ryther.

211. Shirley, *Mapping of the World*, 238–39 (no. 221), and see Hind, *Engraving in England*, 1:27–28.

212. Barber, “England II,” 68; BL, Harley MS. 6035; for Dee's diary, see *The Diaries of John Dee*, ed. Edward Fenton (Charlbury, Oxfordshire: Day Books, 1998), 3–4, 10 (entries for 28 and 30 November; 1 December 1577; 28 October 1578; 17 September; 3 and 10 October 1580), and passim, and William H. Sherman, *John Dee: The Politics of Reading and Writing in the English Renaissance* (Amherst: University of Massachusetts Press, 1995), 7, 17, 40–41, 118, 130, 155, 174, 182, and 192.

213. Barber, “England II,” 65; K. Zandvliet, *Mapping for Money: Maps, Plans, and Topographic Paintings and Their Role in Dutch Overseas Expansion, During the 16th and 17th Centuries* (Amsterdam: Batavian Lion International, 1998), 26–32; in January 1564 Elizabeth got as far as drafting a commission for Borough as “Cheyffe Pilote of this owr realme of Englande”; see Rodriguez-Salgado, *Armada*, 210.

214. See the section on mapping the countryside, pp. 1637–48.

215. Skelton and Summerson, *Description of Maps*, 21, 26, and 34. A distinction can be made between Burghley's working papers, which seem largely to have been left in his office and after passing into the hands of his secretary, Michael Hicks, are now in the BL (Lansdowne MSS. 1–122), and the reference books in his library, which are in Hatfield House and, to a much lesser extent, at Burghley House, the home inherited by Burghley's oldest son, the first Earl of Exeter.

216. Sherman, *John Dee*, 138, 154–57, 183, and 200, and B. W. Beckingsale, *Burghley: Tudor Statesman, 1520–1598* (London: Macmillan, 1967), 214 and 257–60.

217. Skelton and Summerson, *Description of Maps*, 21 and 30–31.

218. Beckingsale, *Burghley*, 257–60, quotation on 257.

219. See, for example, Elizabeth's tacit support for Raleigh's Virginia venture (Andrews, *Trade, Plunder and Settlement*, 202–3); for Sanderson, see Wallis, “Cartography of Drake's Voyage,” 153, and William Sanderson, *An Answer to a Scurrilous Pamphlet* (London: For the author, 1656), sig.A3v. Sanderson, who was married to Raleigh's niece, also paid for the publication in 1595–96 of Norden's maps of Hampshire and Sussex (Frank Kitchen, “John Norden [ca. 1547–1625]: Estate Surveyor, Topographer, County Mapmaker and Devotional Writer,” *Imago Mundi* 49 [1997]: 43–61, esp. 48).

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-

220. Edward Lynam, "Flemish Map Engravers in England in the Sixteenth Century," in *Mapmaker's Art*, 91–100, esp. 95–96 and 98, though now outdated. And see chapter 57 in this volume. The link between the scientists and the engravers is made most explicit in Jodocus Hondius's dedication of his "Christian Knight" world map, published in Amsterdam in about 1598, to the mathematicians Robert Brewer, Henry Briggs, and Edward Wright (Shirley, *Mapping of the World*, 218–19 [no. 198]). See also Hind, *Engraving in England*, 1:27–28, and Peter Barber, "The Christian Knight, the Most Christian King and the Rulers of Darkness," *Map Collector* 52 (1990): 8–13.

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.

222. As Worms has shown, the manufacture of globes in England is recorded at an earlier date, but these have not survived. For the Molyneux globes, see Helen Wallis, "The First English Globe: A Recent Discovery," *Geographical Journal* 117 (1951): 275–90; idem, "Further Light on the Molyneux Globes," *Geographical Journal* 121 (1955): 304–11; R. M. Fisher, "William Crashawe and the Middle Temple Globes, 1605–15," *Geographical Journal* 140 (1974): 105–12, esp. 106; *Sir Francis Drake*, 80–81; Wallis, "Cartography of Drake's Voyage," 151–55; Anna Maria Crinò and Helen Wallis, "New Researches on the Molyneux Globes," *Der Globusfreund* 35–37 (1987): 11–18; Hind, *Engraving in England*, 1:29; and figure 57.11 in this volume.

223. Walter Bigges, *Expeditio Francisci Draki Equitis Angli in Indias Occidentales* (Leiden: Apud F. Raphelengium, 1588), for which see *Sir Francis Drake*, 107–11. For de Bry, see Hind, *Engraving in England*, 1:124–37; White, *Complete Drawings*, 17–19; Lynam "Flemish Map Engravers," 98; and see also Philip D. Burden, *The Mapping of North America: A List of Printed Maps, 1510–1670* (Rickmansworth, Herts.: Raleigh Publications, 1996), 81–83 and 97–99. For more general background, see Wallis, "Cartography of Drake's Voyage," 133–41.

224. Wallis, "Cartography of Drake's Voyage," 155. For the general picture, see Geoffrey Parker, *The Dutch Revolt*, rev. ed. (Harmondsworth: Penguin, 1985), 230–31, 250–51, and Jonathan Irvine Is-

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 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 and impery of Englande . . . 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 reaulme 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 epilog 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

rael, *The Dutch Republic: Its Rise, Greatness, and Fall, 1477–1806* (Oxford: Clarendon Press, 1995), 241–53 and 307–12.

225. The mention of Hampton Court, the extreme elegance of the draftsmanship, and the official provenance of many of the maps and state papers in the Cotton Collection (for which see Barber, “England II,” 73 and 83) all suggest that the map was originally intended for display at court. Its unfaded condition is probably due to a small curtain attached to the frame that protected it from light when not being consulted. Many of Henry's smaller paintings and maps are recorded as having such curtain veils in the inventories; see David Starkey, ed., *The Inventory of King Henry VIII: Society of Antiquaries MS 129 and British Library MS Harley 1419* (London: Harvey Miller for the Society of Antiquaries of London, 1998–).

226. BL, Cotton MS. Aug. I.i.9, reproduced in color in Barber, “British Isles,” 50, and Harvey, *Maps in Tudor England*, 10. See also Crone, *Early Maps of the British Isles*, 8–9, 22–23, and pl. 12, and Tyacke and Huddy, *Saxton and Tudor Map-Making*, 7–8. The map's aspirations to accuracy were greater than the achievement, the longitudinal values being particularly inaccurate.

227. See John Leland, *The Itinerary of John Leland in or about the Years 1535–1543*, 5 vols., ed. Lucy Toulmin Smith (London: Centaur Press, 1964).

228. Leland, *Itinerary*, 1:xli and 4:183–85; Barber, “British Isles,” 45; and Frederick John North, *Humphrey Llwyd's Maps of England and Wales* (Cardiff: National Library of Wales and the Press Board of the University of Wales, 1937), 53.

229. Leland, *Itinerary*, 1:xxxvii–xliii, esp. xli.

230. Smith in Leland, *Itinerary*, 1:xiv–v and xvii–xviii. Peter H. Meurer, “Op het spoor van de kaart der Nederlanden van Jan van Hoirne,” *Caert Thresoor* 21 (2001): 33–40, and for his cartographic activity more generally, see Edward Lynam, “An Atlas of England and Wales: The Maps of Christopher Saxton, Engraved 1574–1579,” in *Mapmaker's Art*, 79–90, esp. 80, although his speculation that Saxton originally worked for Wolfe is incorrect; Skelton, *Saxton's Survey*, 10 and 16. See also chapter 57 in this volume.

231. Edward Lynam, *The Map of the British Isles of 1546* (Jenkintown, Pa.: George H. Beans Library, 1934); Crone, *Early Maps of the British Isles*, 24–25; Shirley, *Early Printed Maps of the British Isles*, 20–22; Tyacke and Huddy, *Saxton and Tudor Map-Making*, 7; and Barber, “British Isles,” 45–47 and 52–53.

232. Trapp and Herbrüggen, *Sir Thomas More*, 27 (no. 15), and 135 (no. 269).

233. Almagià, *Monumenta cartographica Vaticana*, 4:7–8. Illustrated in BL, Maps 188.i.2 (5) (with a copy of a letter from R. A. Skel-



FIG. 54.8. REYNER WOLFE (?), ANNE OF CLEVES'S JOURNEY TO CALAIS, 1539. Manuscript showing routes for Anne of Cleves's journey from Cleves to Calais in 1539 that, at the least, was almost certainly acquired, annotated,

and initialed by Wolfe.

Size of the original: 51 × 76 cm. Photograph courtesy of the BL (Cotton MS. Aug. I.ii.63).

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-

ton to Roberto Almagià, 20 June 1953), and see Juergen Schulz, "Maps as Metaphors: Mural Map Cycles of the Italian Renaissance," in *Art and Cartography: Six Historical Essays*, ed. David Woodward (Chicago: University of Chicago Press, 1987), 97–122, esp. 103–4.

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.²³⁸ 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.²³⁹ 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.²⁴⁰

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."²⁴¹ 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 livings that he received late in 1554 and in 1557 and 1558 after conforming to Catholicism under Philip and Mary²⁴² may have been rewards connected with this work.

Close examination of the content of Mercator's multi-sheet 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 Scot-

land, 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.²⁴³ This would help explain the absence from the Mercator map of the sizeable townships of Philipstown and Maryborough in Ireland, created in 1556.²⁴⁴

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, Reynier 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

son, "Defences in Detail," 482), and this may well have generated further maps that are now lost. The survival of two examples, differing in detail, of the manuscript map of Lancashire commissioned by Lord Burghley probably in the 1570s, one in TNA (MPF 123) and the other in the BL (Royal MS. 18.D.III, fols. 82v–83) emphasizing the sands of Morecambe Bay demonstrates continuing government concern about that region.

238. Barber, "British Isles," 47 and 63. For the pilfering more generally, see Hayward, *1542 Inventory*, and James P. Carley, ed., *The Libraries of King Henry VIII* (London: British Library in association with the British Academy, 2000), lxxiv–vi, lxxviii–ix, 32; and Elizabeth Goldring, "An Important Early Picture Collection: The Earl of Pembroke's 1561/62 Inventory and the Provenance of Holbein's 'Christina of Denmark,'" *Burlington Magazine* 144 (2002): 157–60.

239. TNA, SP 10/6 no. 13, calendered in *Calendar of State Papers: Domestic Series of the Reign of Edward VI, 1547–1553*, ed. C. S. Knighton (London: Her Majesty's Stationery Office, 1992), 87–88.

240. Barber, "Tudor Mystery," 20–21; idem, "British Isles," 46; and Karrow, *Mapmakers of the Sixteenth Century*, 344–48.

241. Application for John Rudd to travel, 1561, Durham Chapter Records (Priors Kitchen) Register B, fol. 135, discussed and reproduced in David Marcombe, "Saxton's Apprenticeship: John Rudd, a Yorkshire Cartographer," *Yorkshire Archaeological Journal* 50 (1978): 171–75, and Tyacke and Huddy, *Saxton and Tudor Map-Making*, 6–7. It could be that by 1561 he considered his survey far enough advanced to require only two more years of work. The details about Rudd in the following sentences are taken from Marcombe, "Saxton's Apprenticeship"; idem, "Rudd, John"; and idem, "Forgotten Tudor Mapmaker?"

242. Marcombe, "Saxton's Apprenticeship," 172.

243. Barber, "British Isles," 55–71, and Andrews, *Shapes of Ireland*, 26–56, esp. 44–45.

244. Andrews, *Shapes of Ireland*, 44–45.

mentioned that he intended to create maps of the English provinces.²⁴⁵

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.²⁴⁶

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.²⁴⁷ 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 feckless, ill-directed tour of Europe in 1567.²⁴⁸ 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,²⁴⁹ 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 Wards, for whom, as tutor to the young Earl of Oxford, he was indirectly working.

SAXTON'S SURVEY, 1573–1583

Content

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."²⁵⁰ Wonder has been expressed at his ability to survey such a vast area in an impeccably scientific manner in so short a time.²⁵¹ The atlas has been judged exceptional in terms of the development of English book production and publishing.²⁵² It has been acclaimed as the first English county atlas and indeed as "the first national atlas to be produced in any country."²⁵³

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-

245. Skelton, *Saxton's Survey*, 15–16, for translation of the Latin original (BL, Lansdowne MS. 6 art. 54), and Tyacke and Huddy, *Saxton and Tudor Map-Making*, 10; the original letter is reproduced in Barber, "Tudor Mystery," 19.

246. BL, Add. MS. 62540, and see Barber, "Tudor Mystery," 16–21, with reproductions of the map, and Bernhard Klein, *Maps and the Writing of Space in Early Modern England and Ireland* (Houndmills, Eng.: Palgrave, 2001), 97–99, 114–17 (who has much of interest to say about English perceptions of Ireland as revealed on this map). However, a comparison between the very individualized depiction and the surviving portraits of Cecil would seem to put the identification beyond question, and in his letter Nowell himself mentions Cecil's disapproval and hints at his impatience both of which are alluded to in the image on the map.

247. For instance it does not seem to have been previously noted that an atlas of Battista Agnese dated 1 September 1553 (Museo Correr, Venice, Port. 1), less than two months after Mary's accession, which merited a special Venetian embassy to England, contained a radically new if miniature depiction of the British Isles including the Llyn Peninsula and the Bay of Cardigan, which have previously been regarded as novelties of Nowell and Mercator's maps of ten years later. The chart is reproduced in Battista Agnese, *Atlante Nautico di Battista Agnese 1553*, ed. Giandomenico Romanelli and Marica Milanese (Venice: Marsilio, 1990), pl. VIII. The editors wrongly state (p. 8) that the depiction is copied from the Lily map. It is more likely to derive from one of the maps commissioned by Henry VIII for his palaces and may be representative of many other manuscript maps of the 1540s and 1550s that are now lost.

248. Berkhout, "Laurence Nowell," 8, and Retha M. Warnicke, "Note on a Court of Requests Case of 1571," *English Language Notes* 11 (1974): 250–56.

249. Barber, "British Isles," 70.

250. Tyacke and Huddy, *Saxton and Tudor Map-Making*, 5; Ifor M. Evans and Heather Lawrence, *Christopher Saxton: Elizabethan Map-Maker* (Wakefield, Eng.: Wakefield Historical Publications and the Holland Press, 1979), xiii; Christopher Saxton, *Christopher Saxton's 16th Century Maps: The Counties of England and Wales*, intro. W. L. D. Ravenhill (Shrewsbury: Chatsworth Library, 1992), 25–26; Lynam, "Atlas of England and Wales," 89–90; and idem, "English Maps and Mapmakers," 63.

251. Skelton, *Saxton's Survey*, 9, and Ravenhill in *Saxton's 16th Century Maps*, 16–17 and 20–21.

252. See chapter 57 in this volume.

253. Lynam, "English Maps and Mapmakers," 63, and Skelton, *County Atlases*, 7–16.

lands (1536–47), Wolfgang Lazius'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 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 Reyner 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 conferring 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.

255. Geoffrey Parker, "Maps and Ministers: The Spanish Habsburgs," in *Monarchs, Ministers, and Maps*, 124–52, esp. 130–34 (revised version, "Philip II, Maps and Power," in *Empire, War and Faith in Early Modern Europe*, by Geoffrey Parker [London: Allen Lane, 2002], 96–121, esp. 103–7); Laura Federzoni, "La carta degli Stati Estensi di Marco Antonio Pasi," in *Alla scoperta del mondo: L'arte della cartografia da Tolomeo a Mercatore*, ed. Francesco Sicilia (Modena: Il Bulino, 2002), 241–85; and more generally, Peter Barber, "Maps and Monarchs in Europe, 1500–1800," in *Royal and Republican Sovereignty in Early Modern Europe: Essays in Memory of Ragnbild Hatton*, ed. Robert Oresko, G. C. Gibbs, and H. M. Scott (New York: Cambridge University Press, 1997), 75–124, esp. 83–87.

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. Skelton, *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.

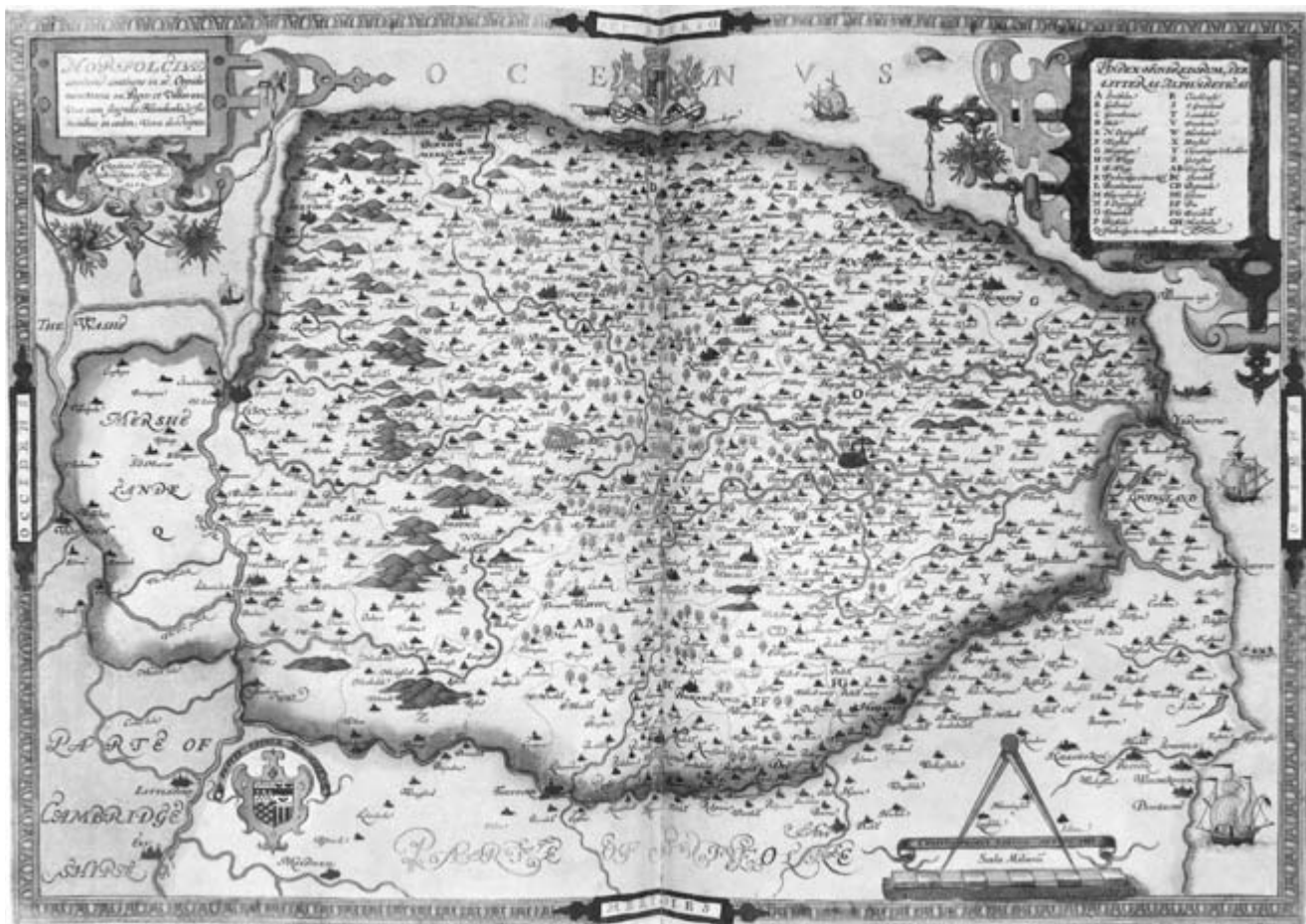


FIG. 54.9. CHRISTOPHER SAXTON, MAP OF NORFOLK, 1574.

Size of the original: ca. 34.2 × 48.5 cm. Photograph courtesy of the BL (Maps C.7.c.2, no. 17).

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 “everlasting 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 Norden,” 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 states 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

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.

273. Burghley to Norris, 27 July 1591, TNA, SP 78/125, fol. 101, quoted from R. B. Wernham, ed., *List and Analysis of State Papers, Foreign Series: Elizabeth I* (London: Her Majesty's Stationery Office, 1964–), 3:269. See also Andrews, "Geography and Government," 181; Andrews, *Irish Maps*, 6–7; and Skelton and Summerson, *Description of Maps*, 26.

274. Morgan, "Cartographic Image," 140 n. 28, citing *Acts of the Privy Council of England: Vol. VII, A.D. 1558–1570* (London: Her Majesty's Stationery Office, 1893), 175 and passim, and Tyacke and Huddy, *Saxton and Tudor Map-Making*, 25.

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).

276. Lynam, "Atlas of England and Wales," 81, and Skelton, *County Atlases*, 8–9.

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 Saxton's predecessors, which has been commented on by earlier writers,²⁸⁰ and why fourteen or (depending on the status of Gloucestershire) fifteen out of 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

278. This seems to be the answer to the hitherto unexplained question (Tyacke and Huddy, *Saxton and Tudor Map-Making*, 31; Skelton, *Saxton's Survey*, 8; and Ravenhill in *Saxton's 16th Century Maps*, 7) of why certain counties were depicted singly and others in groups, once the exigencies of finance and time (in the southeast of England and Wales) have been taken into account.

279. Evans and Lawrence, *Christopher Saxton*, 38–39 (table 4).

280. Evans and Lawrence, *Christopher Saxton*, 41; Skelton, *Saxton's Survey*, 11; and Ravenhill in *Saxton's 16th Century Maps*, 22–23.

281. Charles, *George Owen*, 151–52; Morgan, "Cartographic Image," 138; and Tyacke and Huddy, *Saxton and Tudor Map-Making*, 31–32.

282. Skelton, *Saxton's Survey*, 8, commented that the order in which Saxton surveyed the counties may have been dictated by "political or military exigency."

283. Evans and Lawrence, *Christopher Saxton*, 9–14 and 18–19. It is extremely difficult to pin down the precise sequence of Saxton's surveys, as virtually the only surviving evidence is the date on the printed maps, which could in some cases be considerably later than that of the surveys (the Welsh maps for instance are all dated 1577 and 1578, even though Saxton's pass for his work in Wales is dated July 1576), and the printed maps may not have appeared in the same sequence as the surveys. Nevertheless the overriding concern with mapping the most vulnerable areas notably the southern and eastern coastal areas and the borders with Scotland is clear and is also reflected in the annotations on Burghley's copies of Saxton's maps and the number of manuscript maps relating to these areas in the Burghley-Saxton atlas (Royal MS. 18.D.III.). See also Ravenhill in *Saxton's 16th Century Maps*, 13.

284. Tyacke and Huddy, *Saxton and Tudor Map-Making*, 31.

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-

pressive body of manuscript mapping that was available in Whitehall from the time of Henry VIII, Saxton would also probably have been able to access the increasing amounts of manuscript mapping that had been sent into the Privy Council over the years.²⁹¹ By 1570 these included some detailed manuscript regional maps of areas like Durham and south Yorkshire that had been mapped in connection with invasion scares or internal unrest, such as the rebellion of the northern earls in 1569.²⁹²

Furthermore, Saxton would almost certainly have had access to the mapping of antiquaries, such as Laurence Nowell (then in the hands of Nowell's friend, the Kentish antiquary Thomas Lambarde) and Reyner Wolfe. Printed maps, such as the anonymous "carde of Kent," were probably also occasionally consulted as well as Mercator's wall map of 1564, although in the latter case, Saxton may well have had access to at least part of Elder and Rudd's original survey.²⁹³ Saxton seems also to have read some of the writings of John Leland. These materials, and particularly Leland's, would have been invaluable to Saxton.²⁹⁴ They filled out the information on the strategically less important inland areas of which there would have

285. Skelton, *Saxton's Survey*, 10–12, and Tyacke and Huddy, *Saxton and Tudor Map-Making*, 39–43. What seems to be a trial copperplate 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.

286. Shirley, *Early Printed Maps of the British Isles*, 60–61. Birmingham Public Libraries, 493213; BL, Maps C.7.d.7.

287. Skelton, *Saxton's Survey*, 14–15 and 21–22, and Tyacke and Huddy, *Saxton and Tudor Map-Making*, 41.

288. Ravenhill in *Saxton's 16th Century Maps*, 20–26; W. L. D. Ravenhill, "Christopher Saxton's Surveying: An Enigma," in *English Map-Making*, 112–19; and Gordon Manley, "Saxton's Survey of Northern England," *Geographical Journal* 83 (1934): 308–16. Evans and Lawrence, *Christopher Saxton*, 42–44, were noncommittal, but Morgan ("Cartographic Image," 135) assumed in 1978 that it was so.

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).

291. See Bendall, "Romney Marsh," 37 and 44, and p. 1614.

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 Bavariae* 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 Hooghe, 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).

295. Tyacke and Huddy, *Saxton and Tudor Map-Making*, 28, and Ravenhill in *Saxton's 16th Century Maps*, 18. Unlike Apian, however, none of Saxton's maps contains a key to his conventional signs.

296. For examples, see Evans and Lawrence, *Christopher Saxton*, 92 and 103, and Tyacke and Huddy, *Saxton and Tudor Map-Making*, 49–51. The appendix by M. W. Beresford to P. D. A. Harvey, "Estate Surveyors and the Spread of the Scale-Map in England, 1550–1580," *Landscape History* 15 (1993): 37–49, esp. 49, provides evidence that Saxton completed a pre-enclosure survey (although it could possibly have been written) of Kirby Underdale, East Riding Yorkshire, in 1583, several years earlier than the first mapped survey mentioned by Evans and Lawrence, *Christopher Saxton*, 79–80.

297. Tyacke and Huddy, *Saxton and Tudor Map-Making*, 36, and Ravenhill in *Saxton's 16th Century Maps*, 15.

298. Delano-Smith and Kain, *English Maps*, 71; Tyacke and Huddy, *Saxton and Tudor Map-Making*, 35–36; Evans and Lawrence, *Christopher Saxton*, 35–36; and Ravenhill in *Saxton's 16th Century Maps*, 19–20. It is possible that Humfrey Cole dedicated his 1572 map of Canaan, in the Bishops' Bible, to Burghley as a way of drawing himself to the lord treasurer's attention as a suitable engraver of the expected English provincial maps. This would help explain the detailed biographical note on the map itself: "graven bi Hvmfray Cole goldsmith a English man born in ye north and pertayning to y mint in the Tower" (Barber, "Humphrey Cole's England," 11–13, and "Cole's Map of Palestine," 100).

299. Skelton, *County Atlases*, 7.

300. Skelton, *County Atlases*, 12 and 132; Tyacke and Huddy, *Saxton and Tudor Map-Making*, 30 and 36; and Evans and Lawrence, *Christopher Saxton*, 15–17 and 39.

301. Skelton, *Saxton's Survey*, 8.

302. Morgan, "Cartographic Image," 138–39; Barber, "England II," 74–75; and Skelton and Summerson, *Description of Maps*, 5, 20, 22–23, and 26–27.

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 cuntry first."³⁰³ The 1577 privilege explicitly stated that Saxton's maps would be "trewe and pleasaunte. . . and beneficiall." George Owen of Henllys provided evidence that this final objective was achieved when he wrote that the maps were "daily perused by [all noblemen 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."³⁰⁴

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,³⁰⁵ 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,³⁰⁶ there can be little doubt that at the time the imagery was intended to associate the queen with all parts of her realm.³⁰⁷ 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.³⁰⁸

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.³⁰⁹ 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.³¹⁰

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 fourth in coulleur, conteyninge everye partycular province and shyre by ytself, of v℥ pryce (as is sayd). Here is great care made to have yt over and many meanes and plotts layd to gett 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."³¹¹ Philip II himself eventually acquired a copy of the atlas.³¹²

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

303. Peacham, *Compleat Gentleman*, 51.

304. Charles, *George Owen*, 151, in a quotation from his written description of Pembrokeshire of 1602/3. The 1577 privilege is in Evans and Lawrence, *Christopher Saxton*, 147–48.

305. Evans and Lawrence, *Christopher Saxton*, 20. Also, among many other discussions of the frontispiece, see Roy C. Strong, *Gloriana: The Portraits of Queen Elizabeth I* (New York: Thames and Hudson, 1987), 98–99.

306. Richard Helgerson, *Forms of Nationhood: The Elizabethan Writing of England* (Chicago: University of Chicago Press, 1992), 108–14.

307. J. B. Harley, "Meaning and Ambiguity in Tudor Cartography," in *English Map-Making*, 22–45, esp. 36–37; Barber, "England II," 78; and Klein, *Writing of Space*, 101–2.

308. Tyacke and Huddy, *Saxton and Tudor Map-Making*, 36 (Privy Gallery, Whitehall) and Frederick, duke of Württemberg (Theobalds) quoted in Rye, *England as Seen by Foreigners*, 45. The map was displayed in one hall at Theobalds. It seems that another room, which had been fitted out as a bedchamber for the queen, contained imitation trees with depictions of the counties between them (pp. 44 and 213). And see Malcolm Airs, "'Pomp or Glory': The Influence of Theobalds," in *Patronage, Culture and Power: The Early Cecils*, ed. J. Pauline Croft (New Haven: Yale University Press, 2002), 2–19, esp. 11–12.

309. Skelton, *County Atlases*, 8, and Evans and Lawrence, *Christopher Saxton*, 20–30, esp. 29–30.

310. Skelton, *County Atlases*, 6–8; Tyacke and Huddy, *Saxton and Tudor Map-Making*, 36; and Ravenhill in *Saxton's 16th Century Maps*, 14–15.

311. "Secret Advertisement" to Walsingham, Paris, 1 December 1585. BL, Harley MS. 288, fol. 163v.

312. Cesáreo Fernández Duro, "Noticia breve de las cartas y planos existentes en la biblioteca particular de S. M. el Rey," *Boletín de la Sociedad Geográfica de Madrid* 26 (1889): 361–96 and 27 (1890): 102–65; reprinted in *Acta Cartographica* 5 (1969): 100–199, esp. 164. I am most grateful to Geoffrey Parker for this reference.

had been restricted for these reasons.³¹³ 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.³¹⁴ 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.³¹⁵ 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.³¹⁶ 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.³¹⁷

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 "Councillor 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, Gent[lemen] and others be residing in every one of them."³¹⁸ 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 1583.³¹⁹

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.³²⁰ 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,

313. Schilder, *Monumenta cartographica Neerlandica*, 1:76.

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 Navigacon" cost £5. Mercator's enormous 1569 world map cost £1/6/8d, Thevet's *Cosmographie* £2/4d, three unspecified printed maps 6/8d, and six manuscript charts 6/8d. Recorde's *Castle of Knowledge* and Cuningham's *Cosmographical Glasse* 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.

316. Skelton, *County Atlases*, 7–13.

317. Tyacke and Huddy, *Saxton and Tudor Map-Making*, 39.

318. Excerpted in Read, *Mr. Secretary Walsingham*, 1:428–29.

319. Evans and Lawrence, *Christopher Saxton*, 74–137, and Tyacke and Huddy, *Saxton and Tudor Map-Making*, 46–52.

320. Tyacke and Huddy, *Saxton and Tudor Map-Making*, 29–30 and 33.

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 woorth, 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-

321. Quoted in R. A. Gardiner, “Philip Symonson’s ‘New Description of Kent,’ 1596,” *Geographical Journal* 135 (1969): 136–38, esp. 136.

322. Charles, *George Owen*, 155–58 and pl. 7. Another version of the map provided the model for the map of Pembrokeshire that appeared in the 1607 edition of Camden’s *Britannia* (Charles, *George Owen*, 158–59).

323. For whom, see Frank Kitchen, “Cosmo-choro-poly-grapher: An Analytical Account of the Life and Work of John Norden, 1547?–1625” (Ph.D. thesis, University of Sussex, 1992), and Kitchen, “John Norden,” 43–60. Paula Henderson, “Maps of Cranborn Manor in the Seventeenth Century,” *Architectural History* 44 (2001): 358–64, supplies more information on Norden’s relations with Robert Cecil, first Earl of Salisbury, between 1605 and 1610, and identifies a further map by him. I am grateful to Robert Laurie for this reference.

324. Kitchen, “John Norden,” 44–51, and John Norden, *John Norden’s Manuscript Maps of Cornwall and Its Nine Hundreds*, ed. and intro. W. L. D. Ravenhill (Exeter: University of Exeter Press, 1972), 11–23. The first volume (1591) described Burghley’s home county of Northamptonshire and was dedicated to him. It is now in the BNF, Collection Gaignières, Manuscrits Français [series 58], no. 706, having been acquired by François-Roger de Gaignières from the papers of Burghley’s descendant, the Earl of Exeter, in the early eighteenth century. It was never printed.

325. Delano-Smith and Kain, *English Maps*, 72–74; Duffy, *Voices of Morebath*, illustrates the important role played by clergymen as local agents of central government in secular as well as religious affairs, particularly in the more remote areas. Chapels of ease could in practice be virtually indistinguishable from parish churches for settlements that, like Highgate, near London, did not enjoy parochial status. The turret of the tower of Monken Hadley church near Barnet in London, dating from 1494, still has its beacon (Bridget Cherry and Nikolaus Pevsner, *London 4: North* [London: Penguin, 1998], 184).

326. Kitchen, “John Norden,” 44–51, and Ravenhill in *Norden’s Manuscript Maps*, 15. In 1594 he presented the Earl of Essex with a manuscript survey of his Essex volume (now BL, Add. MS. 33769); in 1595 the queen received a manuscript compendium of texts and maps (BL, Add. MS. 31853) and in 1597 a specially printed description of Hertfordshire (BL, G. 3685). In the same year, Norden presented a manuscript copy of the same survey to Lord Burghley (now Lambeth Palace Library MS. 521). Another manuscript copy of the Hertfordshire volume was presented to the countess of Warwick in 1598 (illustrated in Heather Lawrence, “Permission to Survey,” *Map Collector* 19 [1982]: 16–20, esp. 18). Presumably this was an attempt to retain official support after Burghley’s death. See Barber, “England II,” 89 n. 49.

327. Ravenhill in *Norden’s Manuscript Maps*, 14–16; Lawrence, “Permission to Survey,” 18–19, points out significant differences in tone between the passes of January and July 1594.

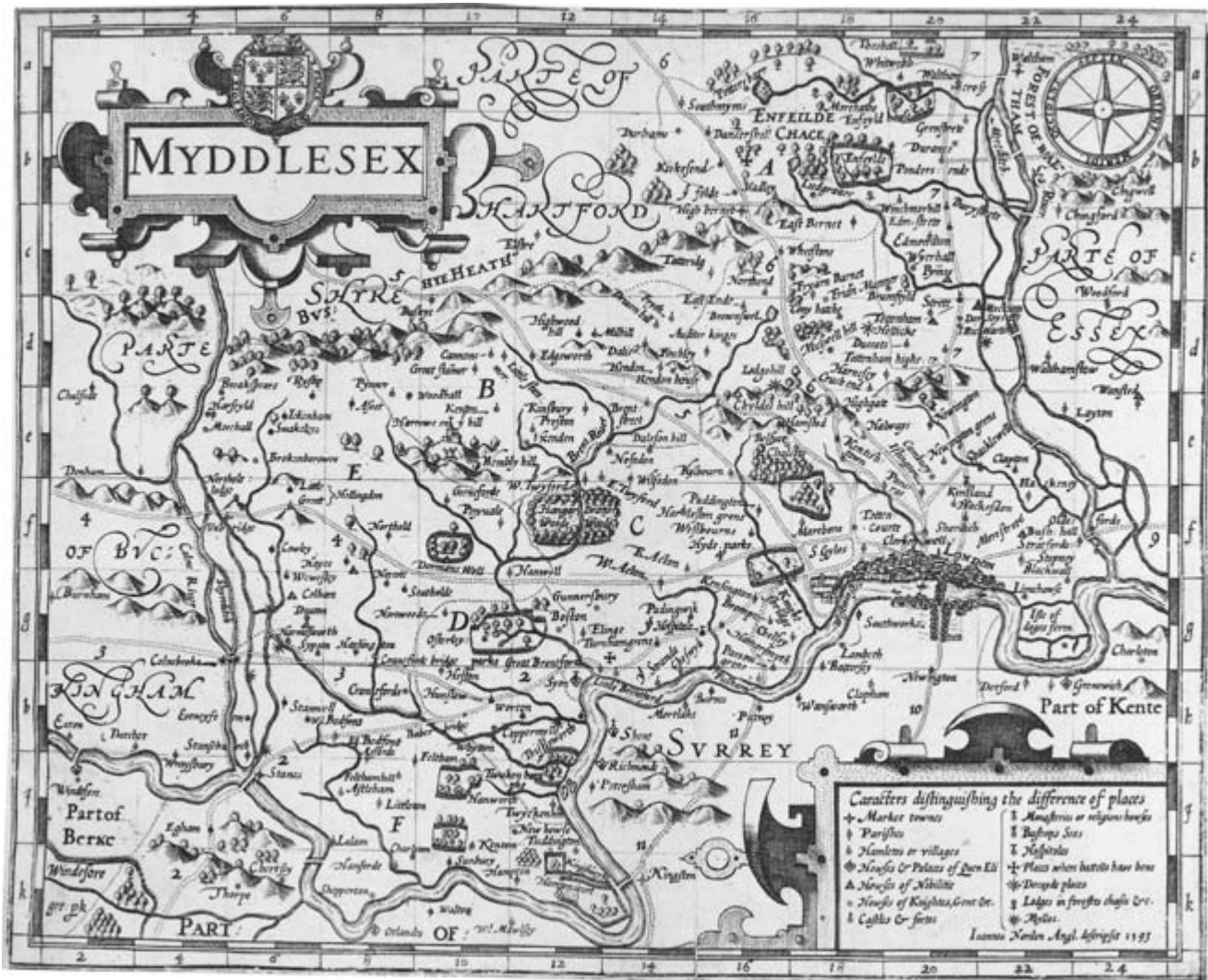


FIG. 54.10. JOHN NORDEN, MYDDLESEX, 1593. A detail of this map is shown in figure 57.1. Size of the original: ca. 17.7 × 21.8 cm. John Norden, *Specu-*

lum Britanniae: The First Parte . . . (London, 1593), between pp. 8-9. Photograph courtesy of the BL (T.799 [2]).

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).

329. Kitchen, “John Norden,” 50–51.

330. See pp. 1656–57.

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 1611.³³¹ 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.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.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.³³⁴ The maps and text for the manuscript "Topographical & 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.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,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.³³⁷ Between about 1578 and 1584 he lived in Nuremberg, the principal south German center of printing and mapmaking.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.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 economy³⁴⁰—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 1567.³⁴¹ 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*.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

331. Kitchen "John Norden," 60.

332. Kitchen, "John Norden," 50–51, and Ravenhill in *Norden's Manuscript Maps*, 18–21.

333. Richard Helgerson, "Nation or Estate? Ideological Conflict in the Early Modern Mapping of England," *Cartographica* 30, no. 1 (1993): 68–74, and Klein, *Writing of Space*, 144–48, though their argument that national mapping had become unacceptable to government primarily on ideological grounds is unconvincing.

334. Kitchen, "John Norden," 51.

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.

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.

337. Sotheby's, map sale, London 11 July 1986, lot 359. It was quite distinct from the English translation of Ortelius published in 1606.

338. See most recently Hermann Maué et al., *Quasi Centrum Europae: Europa kauft in Nürnberg, 1400–1800* (Nuremberg: Verlag des Germanischen Nationalmuseums, 2002), esp. 272–389.

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.

340. William Roach, "William Smith: 'A Description of the Cittie of Noremburg' (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.

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.

342. W. H. Godfrey and Anthony Richard Wagner, *The College of Arms, Queen Victoria Street* (London: London Survey Committee, 1963), 220–21.



FIG. 54.11. WILLIAM SMITH, MAP OF CHESHIRE, 1602–3. Manuscript draft.

Size of the original: ca. 37.6 × 49 cm. Photograph courtesy of the BL (Maps C.2.cc.2 [12]).

identify their creator as William Smith (fig. 54.11).³⁴³ 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' Com-

pany of London, had been involved with maps since the late 1580s. His earliest printed map, a wall map of Canaan, was published in 1595.³⁴⁴ Unlike Smith, who had a prickly temperament,³⁴⁵ Speed emerges from his

343. R. A. Skelton, "Four English County Maps, 1602–3," *British Museum Quarterly* 22 (1960): 47–50; Skelton, *County Atlases*, 19–22; and Delano-Smith and Kain, *English Maps*, 72 and 75. The BL now possesses a full set of the 1602/3 edition of the twelve printed county maps as well as all four manuscript fair drafts for the engraver (BL, Maps C.2.cc.2 [2–4, 9–15, 19–24], the manuscript maps being 12–15).

344. A. Sarah Bendall, "Draft Town Maps for John Speed's *Theatre of the Empire of Great Britaine*," *Imago Mundi* 54 (2002): 30–45, esp. 39. See also A. Sarah Bendall, "Speed, John (1551/2–1629)," in *Oxford Dictionary of National Biography*, 60 vols. (Oxford: Oxford University Press, 2004), 51:771–72, and the three-part biography in Ashley Baynton-Williams, "John Speed," *MapForum.com*, vol. 1, nos. 2–4 [1999] <www.mapforum.com>.

345. "Smith, William," in *The Dictionary of National Biography: From the Earliest Times to 1900*, 22 vols. [1885–1901; reprinted Lon-



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]).

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,³⁴⁶ 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 employments of a manuell 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 1603.³⁴⁷ 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.³⁴⁸ His research and

don: Oxford University Press, 1973], 18:550–51, esp. 550, speaks of his "lack of amiability" and "sharp tongue." And see also David Kathman, "Smith, William (c. 1550–1618)," in *Oxford Dictionary of National Biography*, 60 vols. (Oxford: Oxford University Press, 2004), 51: 358–59.

346. See most recently Colin G. C. Tite, *The Manuscript Library of Sir Robert Cotton* (London: British Library, 1994), and Skelton, *County Atlases*, 32.

347. Skelton, *County Atlases*, 35, 41. The sole surviving example, from the Gardner Collection, is now in Cambridge University Library. Laurence Worms has noted that Rogers did not die soon after 1604, as has been repeatedly stated, but after 1619, so there must have been other reasons for Speed's failure to employ him afterward.

348. Lawrence, "Permission to Survey," 20, quoting a copy of a pass dated 1607 in the Black Book of Warwick. Having the chancellor of the exchequer (or finance minister) as patron seems to have outweighed the poverty of the crown that counted against Norden in the 1590s.

surveying work reached a peak of intensity between 1606 and 1608,³⁴⁹ in which years Jodocus Hondius, who seems to have been a shareholder in the project,³⁵⁰ began engraving the maps, a task which was completed in 1610.³⁵¹ 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.³⁵²

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.³⁵³ 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.³⁵⁴

Recent research has suggested that Speed was being overmodest in his much-quoted and self-deprecating 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.³⁵⁵

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,³⁵⁶ 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.³⁵⁷

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.³⁵⁸ 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.³⁵⁹ 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-

349. Bendall, "Draft Town Maps," 40–41.

350. Skelton, *County Atlases*, 33–34.

351. Skelton, *County Atlases*, 34–35.

352. Skelton, *County Atlases*, 36.

353. Skelton, *County Atlases*, 30–44 and 210–12. For reproductions of the maps, see Alasdair Hawkyard's somewhat misleadingly titled *The Counties of Britain: A Tudor Atlas by John Speed* (London: Pavilion in association with British Library, 1988).

354. Günter Schilder, "Jodocus Hondius, Creator of the Decorative Map Border," *Map Collector* 32 (1985): 40–43, and idem, *Monumenta cartographica Neerlandica*, 6:56–57.

355. Bendall, "Draft Town Maps," 35, and A. Sarah Bendall, "Author's Postscript," *Imago Mundi* 57 (2005): 54.

356. Günter Schilder and Helen Wallis, "Speed Military Maps Discovered," *Map Collector* 48 (1989): 22–26; Shirley, *Early Printed Maps of the British Isles*, 96–98, 103–4 and 106–7; and figure 54.21.

357. Klein, *Writing of Space*, 105–10, and esp. 107–8, and more generally Helgerson, *Forms of Nationhood*, 105–47.

358. Tyacke and Huddy, *Saxton and Tudor Map-Making*, 37–38 and 42–43; Skelton, *Saxton's Survey*, 12–13 and 20–22; and Evans and Lawrence, *Christopher Saxton*, 45–65. The final pulls from the plates, in the late eighteenth-century, however, were made for antiquarian reasons (D. Hodson, comp., *County Atlases of the British Isles Published after 1703: A Bibliography* [Tewin: Tewin Press, 1984–], 1:141–50, esp. 149–50).

359. See, for instance, Harvey, *Maps in Tudor England*, 42–65, 78–93, and 102–13.

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

360. Most recently McRae, *God Speed the Plough*, esp. 169–97; Delano-Smith and Kain, *English Maps*, 116–18; and Klein, *Writing of Space*, 42–45.

361. Joyce A. Youings, *The Dissolution of the Monasteries* (London: Allen and Unwin, 1971), 117–31, who estimates that three-quarters of the former monastic land had been alienated by 1558.

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: Leopard’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 Norden 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.

365. McRae, *God Speed the Plough*, 176–77.

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 under way 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 the 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 manors 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 Felde, and Comptynge the True Nombre of Acres of the Same: Newlye Inuented and Compyled by Syr Rycharde Benese* (Southwark: James Nicolson, 1537).

368. Lawrence, “John Norden,” 54–55. For Norden’s estate surveying, see also John Norden, *John Norden’s Survey of Barley Hertfordshire, 1593–1603*, ed. Jack C. Wilkerson (Cambridge: Cambridge Antiquarian Records Society, 1974), and *Orford Ness: A Selection of Maps* (Cambridge: W. Heffer and Sons, 1966).

369. The following paragraph is based on Eden, “Three Elizabethan Estate Surveyors,” 77. See also Bendall, *Dictionary*, 1:22–23, and A. Sarah Bendall, “Interpreting Maps of the Rural Landscape: An Example from Late Sixteenth-Century Buckinghamshire,” *Rural History* 4 (1993): 107–21.

370. 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 3/49Ci), 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).

371. Also illustrated and discussed in Harvey, *Maps in Tudor England*, 105 and 107.

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 Remayning 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 (Bodley 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

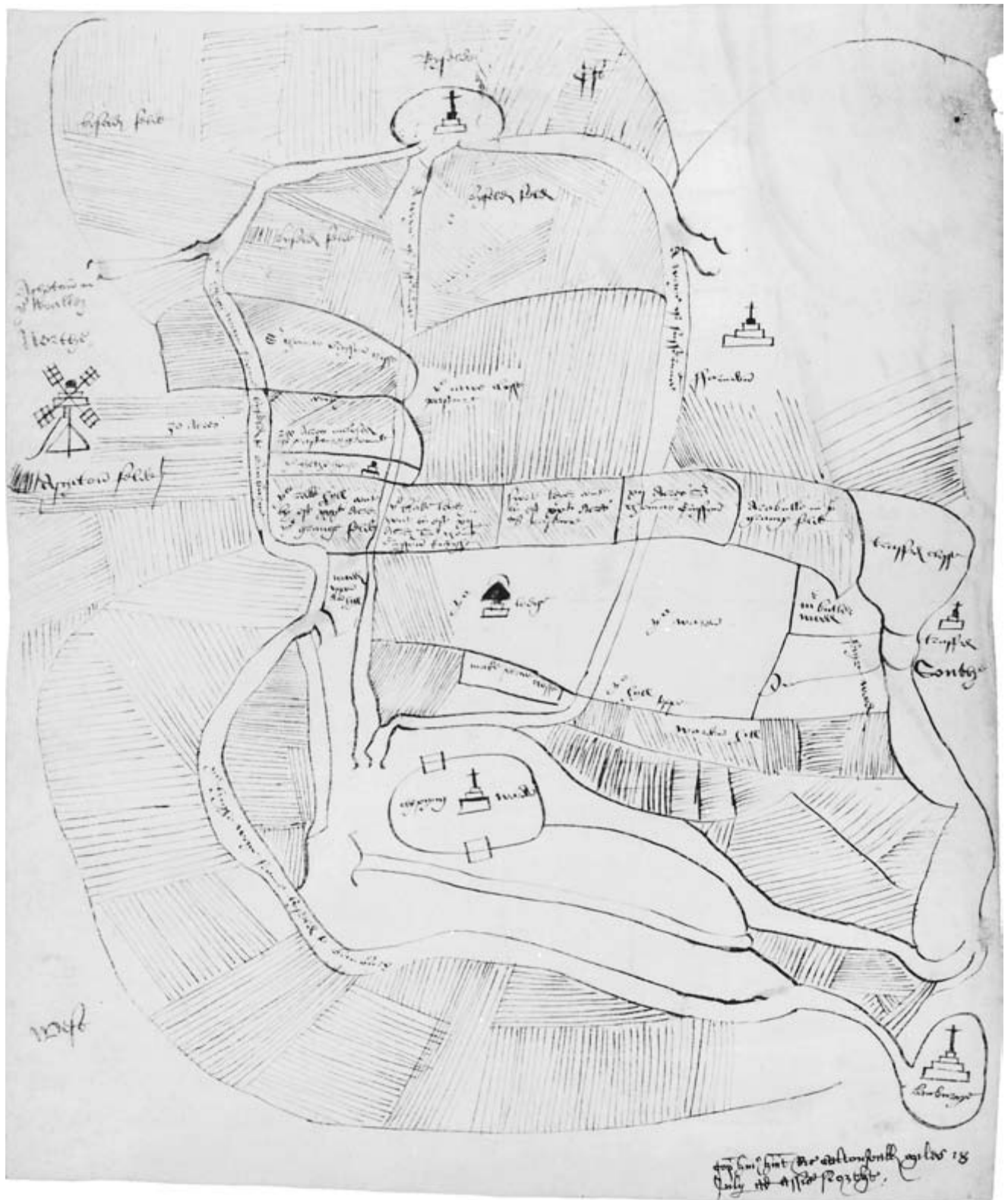


FIG. 54.13. ANONYMOUS, MAP OF BYFIELD AND CHIPPING WARDEN, CA. 1550. Lower right: "Copia huius habit Ricardus Saltonstall Miles 18 July ad assisas Northt."

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 Governour*, 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 Cuningham (*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 Surveior's Dialogue* (1607; expanded second edition, 1610), and Aaron Rathborne's *The Surveior 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 instruments³⁷⁸ 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. Klein, *Writing of Space*, 50; Bendall, *Maps, Land and Society*, 141–43; and J. A. Bennett, "Geometry and Surveying in Early-Seventeenth-Century England," *Annals of Science* 48 (1991): 345–54, esp. 334–37 on Thomas Hood's years between 1588 and 1592 as the first mathematical lecturer at Gresham College.

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.

377. Darby, "Agrarian Contribution," 529–35; Harvey, "Estate Surveyors," 40–42; Turner, "Mathematical Instrument-Making," 97; Bendall, *Maps, Land and Society*, 131–34; and Morgan, "Cartographic Image," 134–35.

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).

379. Harvey, "Estate Surveyors," 39–40.

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 Arithmeticke 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.



FIG. 54.14. RICHARD BANKES, DETAIL FROM MAP OF SHERWOOD FOREST, 1609. This detail of the bottom portion shows Welbeck Abbey and the surrounding lands. Size of the entire original: 116.8 × 81.3 cm; size of this detail: ca. 69.6 × 48.4 cm. Photograph courtesy of TNA (MR 1/429/1).

problematical.³⁸² 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 abutments, 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-

382. For emphatic arguments for their significance in this context, see Harvey, "English Estate Maps," 29, and in greater detail in idem, "Estate Surveyors," 44–45: "but for Saxton's county maps in the 1570s there would have been no estate maps in the 1580s," pointing out that the appearance of the first estate maps followed close on the appearance of Saxton's maps of the counties (Norfolk and Suffolk) in which the lands were situated. The landowners commissioning these maps were precisely the gentry whom Burghley seems to have intended should be the primary purchasers of Saxton's maps. Robert Mawe, who was making sketch maps of his estates in Dedham in August 1573, albeit while preparing a written survey, knew both Seckford and Saxton (p. 40). One of the maps (TNA, MPC 77, fol. 4) is illustrated in Harvey, *Maps in Tudor England*, 85. Yet at least some of the more sophisticated gentry seem to have set more stock by Ortelius: in the 1620s the Norfolk squire and amateur artist Sir Nathaniel Bacon chose to portray himself in front of an opening from an Ortelius atlas rather than an English county atlas; see plate 23 in this volume and Hearn, *Nathaniel Bacon*, 17–18.

383. "Thistlethwaite County of Cumberland belonging to Imanuel Halton gent," BL, Add. MS. 78700.

384. Eden, "Three Elizabethan Estate Surveyors," 77.

385. Stephanos Mastoris, "A Newly-Discovered Perambulation Map of Sherwood Forest in the Early Seventeenth-Century," *Transactions of the Thoroton Society of Nottinghamshire* 102 (1998): 79–92, esp. 83.

386. Harvey, *Maps in Tudor England*, 91; idem, "Estate Surveyors," 43; idem, "English Estate Maps," 43; and McRae, *God Speed the Plough*, 194–95.

commended 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 driving 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 Blagrave, and, later in the century, William Fowler; clergymen like Agas; schoolmasters or self-styled “professors of the Mathematiques” 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

387. Ralph Agas, *A Preparative to Platting 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.

388. Eden, “Three Elizabethan Estate Surveyors,” 71.

389. London Metropolitan Archives, MP3/79, and see Bendall, *Maps, Land and Society*, 177 (for George King, 1613); for Burton, see BL, Maps MT 6 b.1 (30), discussed by Edward Lynam, “The Character of England in Maps,” in *Mapmaker’s Art*, 1–35, esp. 15, and Harvey, “English Estate Maps,” 36–37.

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.

391. Harvey, “Estate Surveyors,” 44.

392. A. Sarah Bendall, “Estate Maps of an English County: Cambridgeshire, 1600–1836,” in *Rural Images*, 63–90, esp. 70.

393. Devon Record Office, 189M/add 3/Maps, discussed in Audrey M. Erskine, J. B. Harley, and W. L. D. Ravenhill, “A Map of ‘the Way to Deartmoore Forest, the Comen of Devonshire,’ Made circa 1609,” *Devon and Cornwall Notes and Queries* 33 (1974–77): 229–36. I am grateful to the late Professor William Ravenhill for this reference; Lincolnshire Archives Office, Misc. Dep. 264/2, illustrated and discussed in *The Common Chronicle: An Exhibition of Archive Treasures from the County Record Offices of England and Wales* (London: Victoria and Albert Museum, 1983), 14–15.

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

395. Eden, “Three Elizabethan Estate Surveyors,” 77–78; Harvey, *Maps in Tudor England*, 93; Harvey, “Estate Surveyors,” 39; and Agas, *Preparative* (ca. 1596), quoted in McRae, *God Speed the Plough*, 177.

396. Bennett, “Geometry and Surveying,” 352. Rathborne, in 1616, had still devoted book 4 of his treatise, *The Surveyor*, to legal matters.

397. Bendall, *Maps, Land and Society*, 114–19 (although covering a wider period); Eden, “Three Elizabethan Estate Surveyors”; “Treswell, Ralph,” in *The Dictionary of National Biography: Missing Persons*, ed. C. S. Nicholls (Oxford: Oxford University Press, 1993), 681; Bendall, *Dictionary*, 1:19, 24–27, and the related dictionary entries in volume 2; A. C. Edwards and Kenneth Charles Newton, *The Walkers of*

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.³⁹⁸ 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 *Surveior’s Dialogue*, 1607] hath in it worthy directions not to be expected against and the use of a perfect surveior thereby intended, yet it will appear that amongst the 36 surveiors or more [of the crown lands] of particuler 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 pinning 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 Yellow Oker and white leade or of Pincke and Verdigrece.” Meadows, he suggested, are best rendered in a light green and pastures in a deeper green. Heaths and fens should be distinguished with an even

Hanningfield: Surveyors and Mapmakers Extraordinary (London: Buckland Publications, 1984); A. D. M. Phillips, “The Seventeenth-Century Maps and Surveys of William Fowler,” *Cartographic Journal* 17 (1980): 100–110, esp. 101. It would seem that the later Sir Nathaniel Bacon, the best-known English amateur artist of the early seventeenth century, must have inherited his artistic skills from his grandfather Sir Nicholas, who was drawing his own estate maps as early as 1575.

398. Bendall, *Maps, Land and Society*, 119–29, and idem, “Estate Maps,” 69–70.

399. Bennett, “Geometry and Surveying,” 347–48.

400. BL, Add. MS. 38444, fol. 96. Quoted from Lawrence, “John Norden,” 55.

401. Bennett, “Geometry and Surveying,” 348–54, and Bendall, *Maps, Land and Society*, 131–34.

402. Bendall, *Maps, Land and Society*, 130.

403. “The table through her lightness, and shrinking to the wether, is tottering, and unsure . . . the pointes, lines and other observations are againe often so blemished, and blurred with wette, as their use is therby taken cleane away: and the same otherwhile, so put downe in haste for feare of a storme . . . neyther is ther any comparison in a point, lyne angle or measure wrought in the fieldes and foule wether, unto the operations, framed in a well lighted house, upon a faire levell, and smooth table” [made possible by a theodolite]. Agas, *Preparative* (1596), 4–5. I am grateful to William Ravenhill for this quotation. See also Harvey, “Estate Surveyors,” 41–42.

404. McRae, *God Speed the Plough*, 177, citing John Norden’s *Surveior’s Dialogue*, 14, and instancing Agas’s printed sheet of about 1596 (now BL, Lansdowne MS. 165, fol. 95).

405. Bendall, *Maps, Land and Society*, 132. Klein, *Writing of Space*, 46–49, gives a slightly different interpretation. Bennett, “Geometry and Surveying,” 348–50. The lower vignette on the frontispiece criticizes the misuse of the plane table by ignorant practitioners rather than the instrument itself, which Rathborne grudgingly accepted, if “artificially handled” on flat terrain “is an excellent Instrument” (quoted in Bennett, “Geometry and Surveying,” 351). The very title of Worsop’s tract of 1582 gives the general tone of the theorists, but see also Agas to Burghley in 1592, complaining that “the great number of land meaters at this presente, with the diversitie of device for measure are soe differenge among themselves . . . as infinite errors are therein dailie committed and the rare and excellent skill in mesure almost utterlie contempned” (BL, Lansdowne MS. 73, item 29), and that in London “he saw a plaine Table man (mary he was a plumber, and had learned from a Painter [possibly a dig at Ralph Treswell who was originally a painter-stainer], in lesse than an acre and halfe of levell marrish grounde taken by foure stations fel short at his cloase two perches at the least” (*Preparative*, B2). I am grateful to William Ravenhill for these quotations. See also Morgan, “Cartographic Image,” 135.

406. C. M. Woolgar, “Some Draft Estate Maps of the Early Seventeenth Century,” *Cartographic Journal* 22 (1985): 136–43, esp. 142. The maps show estates of the Lincolnshire estates of Corpus Christi College, Oxford (C.C.C. Archives Dg 1/1 [drafts]; Da 5/2 [engrossed]): two examples are reproduced in Tyacke, *English Map-Making*, pls. 41 and 42).

407. Woolgar, “Draft Estate Maps,” 137.

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 disputes over boundaries, and land or water rights rather than land administration.⁴¹³ Other “estate maps” were intended not for general use but specifically to provide the basis for decisions over the division of an estate following the death of its owner, like Israel Amyce’s plans of Edmund Tirrell’s lands in Essex.⁴¹⁴ The handsome plans of Sir Christopher Hatton’s lands in Holdenby and Kirby in Northamptonshire, produced by Treswell in the course of the 1580s, seem primarily to have been tools to plan and then to record the enclosure of farmland to create a park,⁴¹⁵ and scale mapping was a particularly valuable instrument in the context of agricultural enclosure.⁴¹⁶ By the end of the sixteenth century scale maps were also being used for drainage schemes, whether in the Fens or in Romney Marsh.⁴¹⁷ Just as Lord Burghley reused maps sent to him for other purposes, so maps commissioned

for use in legal disputes seem regularly to have been retained for reuse afterward as administrative, general reference, “estate” maps. Bendall has shown how in the Romney Marsh area, maps and plans commissioned from Thomas Clerke by All Souls College, Oxford, in the early 1590s to defend its rights in the law courts were subsequently copied and reused as estate maps (fig. 54.15).⁴¹⁸

Even when the map seems to meet all the “general reference” criteria and may in the course of time have been so used, it is likely to have been created under specific 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.⁴¹⁹ 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, *Fevdigraphia: 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.

410. Aaron Rathborne, *The Surveyor* (London: W. Stansby for W. Burre, 1616), 174–75.

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 Stiffkey estate, which, given his background and interests, may well have been to a consistent scale (Bendall, *Dictionary*, 1:19).

412. Harvey, “English Estate Maps,” 27.

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).

414. BL, Harley MS. 6697. A map is illustrated in Harvey, *Maps in Tudor England*, 86–87.

415. Northamptonshire Record Office, Finch Hatton, MS. 272, fols. 5 and 6, and Harvey, “English Estate Maps,” 52–53. The maps are reproduced and discussed also in Harvey, *Maps in Tudor England*, 89–91, and in Barber, “England II,” 82.

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

417. For an introduction to the enormous and growing literature on maps of the drainage of the Fens, see Peter Eden, “Land Surveyors in Norfolk, 1550–1850,” *Norfolk Archaeology* 35 (1973): 474–82 and 36 (1975): 119–48; Edward Lynam, “Early Maps of the Fen District,” *Geographical Journal* 84 (1934): 420–23; idem, “Maps of the Fenland,” 291–306; and Bolam and Thorpe, “Charles Lynn Marshland Map” (now BL, Add. MS. 71126). See also Bendall, “Romney Marsh.”

418. Bendall, “Romney Marsh,” 42–43. See also Eden, “Three Elizabethan Estate Surveyors,” 70–71, and M. W. Beresford, *History on the Ground: Six Studies in Maps and Landscapes* [1957; Gloucester: Sutton, 1984], 116–23.

419. Bendall, “Estate Maps,” 80.

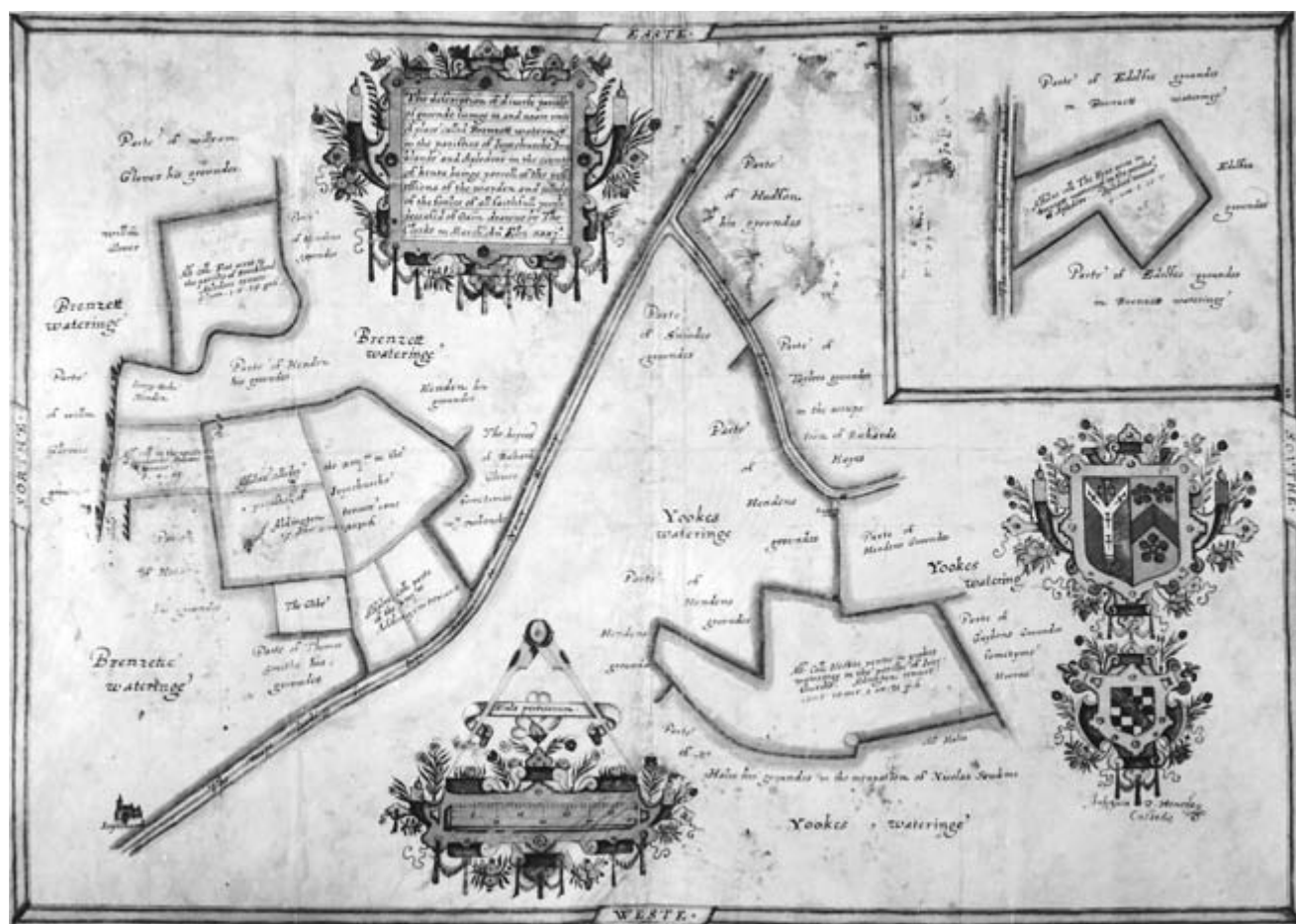


FIG. 54.15. THOMAS CLERKE, MAP OF IVYCHURCH, COPIED BY THOMAS LANGDON. Size of the original: 46 × 64 cm. Photograph courtesy of the

Warden and Fellows of All Souls College, Oxford (Hov. Map. III, no. 12).

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

420. Bendall, *Maps, Land and Society*, 159–77, and Bendall, "Estate Maps," 70.

421. "This Nobel Survey Taken of Chrughoel & Tretowre by Robert Johnson Gent. Auditor & Supervizor to the most noble William Earl of Worcester Knight of the most Noble Order of the Garter. Being the first of October on the twenty ninth of Queen Elizabeths Reign Viz. Anno 1587." National Library of Wales, Badminton 3.

422. P. W. Hasler, *The House of Commons, 1558–1603*, 3 vols. (London: For the History of Parliament Trust by Her Majesty's Stationery Office, 1981), 2:380–81.

dues (including dues in kind) were payable. The text also 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 a commercial level of 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.⁴²⁷ 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.⁴²⁸ 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.⁴²⁹ In other cases, again, the maps were almost totally denuded of text, lacked written terriers, and were presumably intended simply for display.⁴³⁰ 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.⁴³¹ 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

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, obliterate, and very much worn; besides the quickening and reviving of Rents, Customes, Liberties, Priveleges, Etc" (BL, Lansdowne MS. 165, fol. 95, quoted by Darby, "Agrarian Contribution," 531–32, and see McRae, *God Speed the Plough*, 177).

424. For other examples in the context of Mark Pierse's splendid map of Laxton (see plate 69), J. V. Beckett, *A History of Laxton: England's Last Open-Field Village* (Oxford: B. Blackwell, 1989), 62, and, for the omission of landless laborers' hovels in Thomas Clay's map of Great Bookham, Surrey, see John H. Harvey, "Thomas Clay's Plan of the Manor of Great Bookham, 1614–1617," *Proceedings of the Leatherhead & District Local History Society* 2 (1957–66): 281–83, esp. 282.

425. Bendall, *Maps, Land and Society*, 39–40. According to Felix Hull, "Aspects of Local Cartography in Kent and Essex, 1585–1700," in *An Essex Tribute: Essays Presented to Frederick G. Emmison as a Tribute to His Life and Work for Essex History and Archives*, ed. Kenneth James Neale (London: Leopard's Head Press, 1987), 241–52, esp. 242, the standard scale for seventeenth-century Essex maps was also four chains to the inch. The adoption of a standard scale is significant in the context of the evolution of the concept of the atlas in Britain.

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 née Fromond.

431. Harvey, "English Estate Maps," 36.

Long Melford in Suffolk of 1580.⁴³² 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."⁴³³

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.⁴³⁴

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.⁴³⁵ 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,⁴³⁶ 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.⁴³⁷ 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, 1550–1611⁴³⁸

THE CONTINENTAL INSPIRATION

If estate mapping seems to have been particularly characteristic of and perhaps unique to England and its colonies,⁴³⁹ a consequence of the growing power of the great landowners in English society and the country's rel-

ative 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. Reyner 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.⁴⁴⁰ The physician William Cuningham, the

432. Bendall, "Pride of Ownership," 94–95.

433. Harvey, "English Estate Maps," 59. For the general phenomenon, see Hill, *Cartographical Curiosities*, and for a particular example, Giles Burton, "An exact survey of certayne lands & tenements lying in the pa[r]lish of Northiam," showing the lands of Thankful Frewen in Sussex 1632 (BL, Maps M.T.6b.1[30]).

434. For these surveyors, see the relevant entries in Bendall, *Dictionary*, vol. 2, and Edwards and Newton, *Walkers of Hanningfield*. Treswell's plans of urban properties were sometimes more pictorial: see Schofield, *London Surveys*, 56, 144, pls. 1 and 2, and fig. 52.

435. Woolgar, "Draft Estate Maps," discusses an interesting group from the archives of Corpus Christi College, Oxford, from the standpoint of the information that they reveal about surveying techniques and map production, without speculating on any use to which they may subsequently have been put.

436. Woolgar, "Draft Estate Maps," 140.

437. In the early twentieth century the Spencer family, presumably enshrining their existing practice, bound what are clearly drafts for eighteenth-century estate maps together with more finished estate maps in enormous corduroy bindings, probably for use in the estate office. (BL, Add. MS. 78155* is a surviving example with photographs showing it with its original contents.) By the early nineteenth century, Bendall records ("Estate Maps of an English County," 78–79) how two copies were produced of Alexander II Watford's atlas of the estates of Queen's College, Cambridge, one handsome example on parchment for the master and "an inferior paper copy" (originally the draft?) for the bursar. See also Harvey, "English Estate Maps," 43 and 58–59.

438. This section owes much to information supplied in the typescript of the late William Ravenhill, and I again express my gratitude to his widow, Mary, and his literary executor, Roger Kain, for allowing me to use it, although the structure and the argument are mine except where otherwise stated.

439. David Buisseret, "The Estate Map in the Old World," in *Rural Images*, 5–26; for a comparison with the cadastral mapping that tended to be found elsewhere in Europe, see R.J. P. Kain and Elizabeth Baigent, *The Cadastral Map in the Service of the State: A History of Property Mapping* (Chicago: University of Chicago Press, 1992).

440. R. A. Skelton, "Tudor Town Plans in John Speed's *Theatre*," *Archaeological Journal* 108 (1951): 109–20, esp. 116; "Speed, John," in *The Dictionary of National Biography: From the Earliest Times to 1900*, 22 vols. (1885–1901; reprinted London: Oxford University Press, 1973), 18:726–28; and Bendall, "Speed, John." Nicholas Reynolds' mention of Wolfe in a letter to Ortelius that also mentioned



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).

Photograph courtesy of the Museum of London. Permission courtesy of the Anhaltische Gemäldegalerie Dessau and the Museum of London.

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.⁴⁴¹ 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.⁴⁴² In addition, one of the most prolific and influential of the English Tudor urban mapmakers, the herald William Smith, spent eight

ham (also spelled Kenningham) only obtained his MD from Heidelberg in 1559 and not in 1557, a few months before the publication of his book, suggesting that he may actually 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.

⁴⁴² Peter Barber, “The Copperplate Map in Context,” in *Tudor London: A Map and a View*, ed. Ann Saunders and John Schofield (London: London Topographical Society, 2001): 21–26.

a copperplate map of London in 1562–63 (Ortelius, *Epistvlae*, 103–4 [letter 43] and 897–98, ca. 1573, now BL, Add. MS. 63650 Q), may have been in this connection.

⁴⁴¹ Taylor, *Mathematical Practitioners of Tudor & Stuart England*, 172. According to Taylor, Cuningham had graduated as recently as 1557, so the German influence was very fresh when he started his *Cosmographical Glasse*, which was published late in 1559. The unpublished research of Matthew Champion, however, indicates that Cuning-

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 1552⁴⁴⁷ (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 Anthonisz.'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 Geminus 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 Patten's perspective view of Durham.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

443. Delano-Smith and Kain, *English Maps*, 182, and David Smith, "The Enduring Image of Early British Townscapes," *Cartographic Journal* 28 (1991): 163–75, esp. 163–64.

444. Skelton, "Tudor Town Plans," 119.

445. Definitions of the terminology for various kinds of urban portrayal have been the subject of much international discussion. See, for example, in W. L. D. Ravenhill, "Compass Points: Bird's-eye View and Bird's-flight View," *Map Collector* 35 (1986): 36–37; Helen M. Wallis and Arthur H. Robinson, eds., *Cartographical Innovations: An International Handbook of Mapping Terms to 1900* (Tring, Herts: Map Collector Publications in association with the International Cartographic Association, 1987), 41–43 and 52–55; Smith, "Enduring Image," 163–64; and Lucia Nuti, "The Perspective Plan in the Sixteenth Century: The Invention of a Representational Language," *Art Bulletin* 76 (1994): 105–28.

446. As well as the better-known colored example now in Augsburg and reproduced and discussed in Schulz, "View of Venice," 468–70, the BL has an uncolored example (Maps *30415[6]), reproduced in *Segni e sogni della terra: Il disegno del mondo dal mito di Atlante alla geografia delle reti*, exhibition catalog (Novara: De Agostini, 2001), 78 (no. 41), and in Barber, "Maps, Town-Views," 1:256 and 2:507–9 (figs. 445 and 446).

447. Reproduced in James Elliot, *The City in Maps: Urban Mapping to 1900* (London: British Library, 1987), 28–29.

448. It may be significant that both Mercury and Neptune are depicted in de Barbari's 1500 plan view of Venice. All three plan views are reproduced in Elliot, *City in Maps*, 18, 22–23, and 40–41.

449. Skelton, "Tudor Town Plans," 116.

450. John Bennell has most recently proposed Geminus in a paper delivered in the London history seminar in the Institute of Historical Research, London, in May 2002. For the alternative suggestion, Antwerp, see Barber, "Copperplate Map," and particularly 20, 26.

451. Hind, *Engraving in England*, 1:150 (Muser, whom Hind thought came from the Netherlands), 228–30 (Schwytzer); Skelton, "Tudor Town Plans," 113; for Durham, see Phyllis Mary Benedikz, *Durham Topographical Prints up to 1800: An Annotated Bibliography* (Durham: University Library, 1968).

Hogenberg himself also created a number of English town views.⁴⁵²

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 surveys⁴⁵³ 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 Citie, Borough, and Towne, except you so lay out the streets, waies, and allies, as may serue for a iust measure for pausing thereof.”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.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.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.⁴⁵⁷

Colonial policy led to the production of plans of Irish towns (although fortresses continued to be the main pre-occupation well into the reign of James I)⁴⁵⁸ and to the creation of John White’s oblique views of the Indian villages of Pomeoic and Secoton near the English settlement of Roanoke in the abortive first Virginia colony in what is now North Carolina.⁴⁵⁹

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).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.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.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

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), 1:VII–XXIII.

453. Bendall (“Draft Town Maps,” 32 and 35) has come across strong evidence in the volume of town plans in Merton College, Oxford, that Speed, the most prolific creator of Tudor or Stuart town plans, used the plane table and chain.

454. Quoted by Skelton, “Tudor Town Plans,” 115.

455. Generally, see vol. 4 of HKW and Skelton and Summerson, *Description of Maps*. For Portsmouth, see D. Hodson, comp., *Maps of Portsmouth before 1800: A Catalogue* (Portsmouth: City of Portsmouth, 1978). BL, Cotton MS. Aug. I.ii.117 (ca. 1584), probably by Popinjay, is also discussed in Tyacke and Huddy, *Saxton and Tudor Map-Making*, 57; for Carlisle in ca. 1563 (BL, Cotton MS. Aug. I.i.13), see Harvey, *Maps in Tudor England*, 72; for Plymouth, see Stuart, *Lost Landscapes*; for Berwick (Cotton MS. Augustus I.ii.14 of ca. 1570), see Rodriguez-Salgado, *Armada*, 69.

456. Biddle and Summerson, “Dover Harbour,” 4:759–64, citing particularly BL, Cotton Aug. I.i.46, illustrated in Robinson, *Marine Cartography in Britain*, pl. 9.

457. BL, Cotton MS. Aug. I.i.74, reproduced in Tyacke and Huddy, *Saxton and Tudor Map-Making*, fig. 16, and Harvey, *Maps in Tudor England*, 18–21.

458. See chapter 55 in this volume, and, more extensively, Andrews, *Plantation Acres*, and Hayes-McCoy, *Ulster and Other Irish Maps*; and see the numerous fortification plans in the Cotton collection for the period after 1600.

459. These views, now in the Department of Prints and Drawings, British Museum, are reproduced in White, *Complete Drawings*, 62 and 66. Engraved by Theodor de Bry in his 1591 edition of Thomas Hariot’s *A Briefe and True Report . . . of Virginia*, these views became standard icons for indicating native American villages on European maps for the next two centuries.

460. For example, BL Cotton MSS. Aug. I.ii.87, 89, 90, 91 (Rouen 1541–42, mainly by Edmund Yorke) and BL Cotton MS. Aug. I.ii.93; Cotton MS. Galba D.X., fols. 189 and 190 (Groningen, 1594).

461. Also Hatfield House, CPM.II.43, reproduced in Skelton and Summerson, *Description of Maps*, 65 (no. 104) and pl. 17; Barber, “England II,” 69; and Rodriguez-Salgado, *Armada*, 118.

462. BL, Egerton MS. 2579; Walter Bigges, *A Summarie and True Discourse of Sir Frances Drakes West Indian Voyage* (London: R. Field, 1589); and *Sir Francis Drake*, 108–11.



FIG. 54.17. RICHARD LYNE, PLAN OF CAMBRIDGE, 1574. Detail of *Oppidum Cantebrixiæ*; the full map is shown as figure 57.7. The plan appeared in John Caius's *Historiæ*

Cantebrixiensis Academiæ ab vrbe condita.

Size of the entire original: 43 × 30 cm. Photograph courtesy of the BL (C.24.a.27[3]).

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).⁴⁶³ 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).⁴⁶⁴

463. Delano-Smith and Kain, *English Maps*, 201, and Harvey, *Maps in Tudor England*, 16.

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.



FIG. 54.18 JOHN WALKER, MAP OF CHELMSFORD, 1591.

Size of the original: ca. 66 × 71.1 cm. Photograph courtesy of Essex Record Office, Chelmsford (D/DM P1).

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.⁴⁶⁵ 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.⁴⁶⁶ 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.

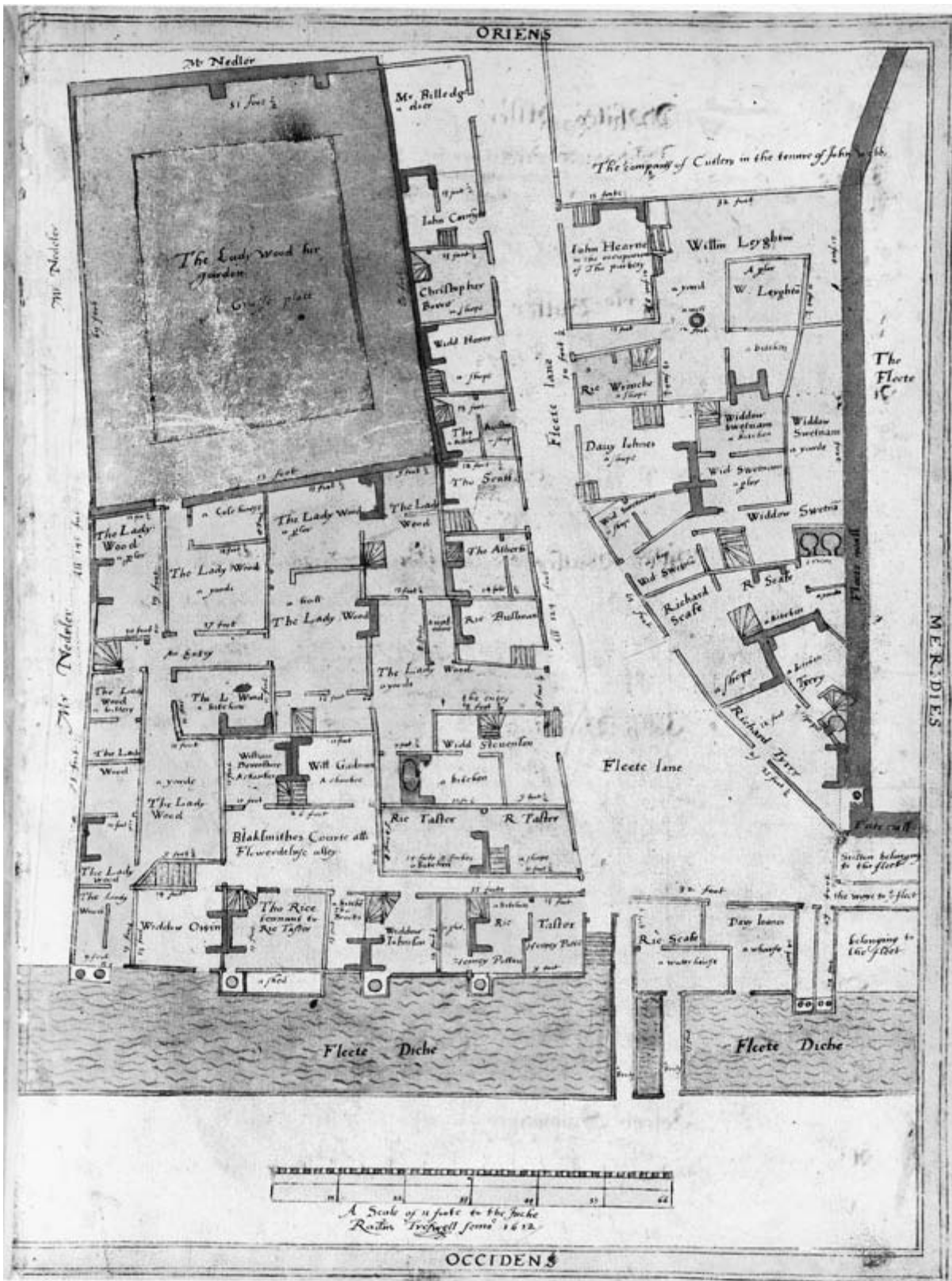


FIG. 54.19. RALPH TRESWELL, PLAN OF LONDON PROPERTY, 16-21 FLEETE LANE, 1612. Size of the original: 49.4 × 37 cm. Photograph reproduced by

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 Cuninghame'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 Cuninghame 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 *Historiæ Cantabrigiæ Academiae ab vrbe 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

Cuninghame 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. Cuninghame, *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 Cuninghame 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 Cuninghame 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.

473. Barber, "Copperplate Map," 20–23.

474. Figures 54.17 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.

475. Only one example, in the Selden Library in Oxford, survives. See Ralph Agas et al., *Old Plans of Oxford* (Oxford, 1899), and Nicholas Millea, *Street Mapping: An A–Z of Urban Cartography* (Oxford: Bodleian Library, 2003), 30–31. In 1587 Agas created a town plan of Dunwich, which (like most of the town) is now lost (Bendall, "Draft Town Maps," 30).

476. Only one example, in the Selden Library in Oxford, survives. See John Willis Clark, *Old Plans of Cambridge, 1574–1798* (Cambridge: Bowes and Bowes, 1921), 21–130, map no. 3, and Millea, *Street Mapping*, 4–5. Delano-Smith has recently, though tentatively, suggested that the map may be the work of John Rudd's son, Edmund. See Delano-Smith and Kain, *English Maps*, 191, and Catherine Delano-Smith, "Son of Rudd: Edmund, another Tudor Mapmaker?" *Map Collector* 64 (1993): 38. Millea has suggested Agas's involvement.

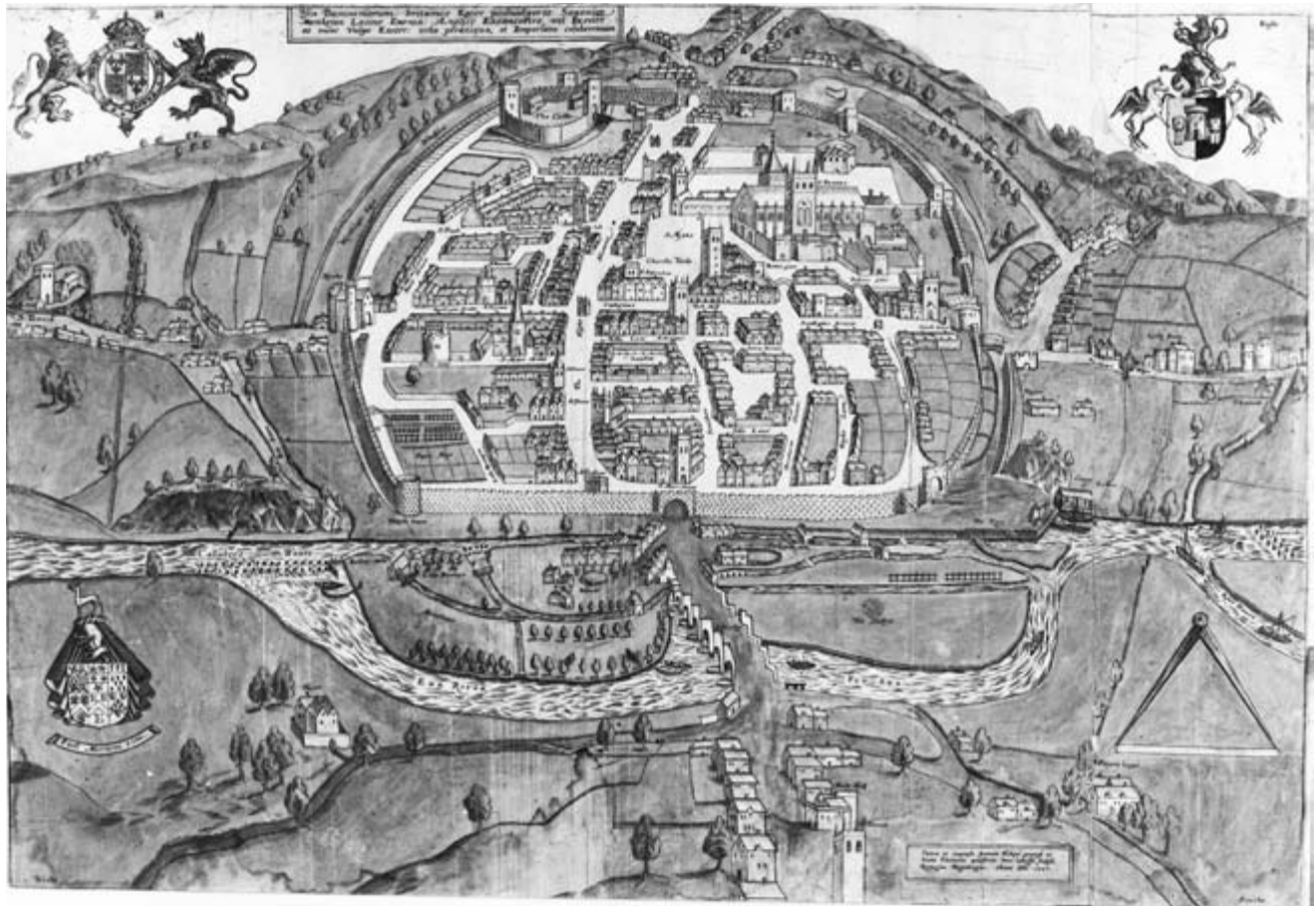


FIG. 54.20. JOHN HOOKER, MAP OF EXETER, 1587. This is state A of the map (state B, in private hands; state C, Exeter City Council).

Size of the original: ca. 35 × 50.8 cm. Photograph courtesy of the BL (Maps C.5.a.3).

est point of perfection . . . using a technique which . . . seems not to have been surpassed even in our own time.”⁴⁷⁷

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.⁴⁷⁸

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*,⁴⁷⁹ and the way in which both authors appeal to local patriotism, is self-evident. But Smith’s *Particular Description of England with the Portraits of Certain 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).

478. Kenneth M. Constable, “Early Printed Plans of Exeter, 1587–1724,” *Report and Transactions of the Devonshire Association for the Advancement of Science, Literature and Art* 64 (1932): 455–73, and Ravenhill and Rowe, “Decorated Screen,” 1–12 and pl. 1.

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.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.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.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)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,⁴⁸⁴ Launceston in Cornwall (1604),⁴⁸⁵ and Windsor in Berkshire (1607), remained in manuscript.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.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.⁴⁸⁸

ICONS, EMBLEMS, AND DECORATION, 1550–1611

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,⁴⁸⁹ within twenty years wall maps had become commonplace in the homes of merchants and the gentry as well as the aristocracy.⁴⁹⁰ Cheaper woodcut versions of

480. Smith's works containing town plans are his well-known "Particuler 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 Noremburg" of 1594 (see note 340), and his "Description of the Covntie Pallatine of Chester Collected and sett downe by W. Smith Citizen of Noremburge" (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.

481. Bendall, "Draft Town Maps," 41; Skelton, "Tudor Town Plans," 115; and Lawrence, "Permission to Survey," 20.

482. Smith, "Enduring Image," 173 n. 17, correcting Wheatley and Ashbee.

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.

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).

485. In his *Speculum* volume on Cornwall, for which see Norden, *Norden's Manuscript Maps*.

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

487. Smith, "Enduring Image," 166. The image of Chichester preceded the appearance of urban images on the borders of Dutch maps by a few years. Schilder, *Monumenta cartographica Neerlandica*, 1:124–35 and 3:154–60.

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 (press-mark 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.

489. Barber, "England I," 42–45.

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 at the Siege of Terouanne that had probably been presented by Emperor Maximilian I⁴⁹⁵—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,

Barbara Winchester, *Tudor Family Portrait* (London: J. Cape, 1955), 111 and 114 (for “Cabota his map,” presumably a copy either of the now-lost world map engraved in London of 1549 or of the 1544 version, of which two examples now survive; see fig. 40.20); Delano-Smith, “Map Ownership”; Delano-Smith and Kain, *English Maps*, 242–43; and Goldring, “Picture Collection,” 160 (I am grateful to Hilary Turner for bringing this to my attention).

491. Peter Barber, “Court and Country: English Cartographic Initiatives and Their Derivatives under Henry VIII and Philip and Mary,” in *Actas—Proceedings—Comptes-Rendus: 19th International Conference on the History of Cartography, Madrid, 1–6 June 2001*, CD-ROM (Madrid: Ministerio de Defensa, 2002), 1–11; Howgego, *Printed Maps of London*, 10–11 and 48–49; Stephen Powys Marks, “Dating the Copperplate Map and Its First Derivatives,” in *Tudor London: A Map and a View*, ed. Ann Saunders and John Schofield (London: London Topographical Society, 2001), 7–15, esp. 9–12.

492. Rye, *England as Seen by Foreigners*, 159–62 and 164, and Wallis, “Cartography of Drake's Voyage,” 122–23 and 141, for maps on the walls of royal palaces during the reign of James I.

493. Such was the impression given. Some, particularly Maximilian I, had been particularly active patrons whereas others, such as Charles V, were somewhat less active but had agents like Charles V's sister, Mary, Queen of Hungary and regent of the Netherlands, who were active on their behalf.

494. As long ago as the 1780s, Ayloffe rightly considered that the surviving panel showing the Field of the Cloth of Gold now on display in Hampton Court could “as properly be styled a picturesque map as an historical picture” (Joseph Ayloffe, “An Historical Description of an Ancient Painting in Windsor Castle,” *Archaeologia* 3 [1786]: 185–229, quoted by Sydney Anglo, “The Hampton Court Painting of the Field of Cloth of Gold Considered as an Historical Document,” *Antiquaries Journal* 46 [1966]: 287–307, esp. 287). Illustrated and discussed in Starkey, *European Court in England*, 50–51.

495. Reproduced and discussed in Barber, “England I,” 47–48 n. 30 and pl. 1, and in Simon Thurley, “The Banqueting and Disguising Houses of 1527,” in *Henry VIII: A European Court in England*, ed. David Starkey (London: Collins and Brown in association with National Maritime Museum, Greenwich, 1991), 64–69, esp. 68.

496. These are known from engravings of related murals at Cowdray Park in Sussex, executed by Samuel Hieronymus Grimm shortly before their destruction by fire in 1793 (reproduced and discussed in Hope, *Cowdray and Easebourne*, 50–53, pl. XV, and Christopher Lloyd and Simon Thurley, *Henry VIII: Images of a Tudor King* [Oxford: Phaidon Press in association with the Historical Royal Palaces Agency, 1990], 44–45, 54, 56, 78–79, and 120), from the mention of the maps in the inventories of Henry VIII's goods of 1547–49 (for which see Starkey, *Inventory*, no. 10773) and from BL, Cotton MS. Aug. I.ii.116, which I have identified as a contemporary drawing, showing the last stage of the siege of Boulogne either copied from or a draft for one of the murals. I touched on these history paintings briefly in “England I,” 29–30, 41, 47–48 n. 30, and pl. 1, and again in Thurley, “Banqueting and Disguising Houses,” 68–69, but I have discussed these paintings more fully and reached different detailed judgments about them in “Cartography, Topography.”

497. Bodleian Library, Bod. MS. Eng. Misc. C.13. The depiction of the coronation procession through London of Edward VI at Cowdray, also commemorated in a Grimm engraving, may be another fragment from the intended series.

498. Wallis, “Cartography of Drake's Voyage,” 121–22 and 133–35.

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-

beth's lord high admiral, Lord Howard of Effingham, from Francis Spierincx of Brussels in the early 1590s and based on Robert Adams's maps. The tapestries adorned the walls of the House of Lords from 1595 until their destruction by fire in 1834.⁵⁰²

Another example is provided by a set of tapestry maps of Gloucestershire, Worcestershire, Oxfordshire, and Warwickshire. These were probably commissioned by Ralph Sheldon in about 1590 from the tapestry works at Barchester near Shipston on Stour, founded in 1570 by his uncle William Sheldon (plate 68). The tapestries typified much of English culture of the time. Flemish in inspiration both as regards medium and function,⁵⁰³ their subject matter is typically English. Clearly influenced by Saxton's county maps, they are nevertheless augmented by origi-

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, *Momumenta 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 Tapisserien*, 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").

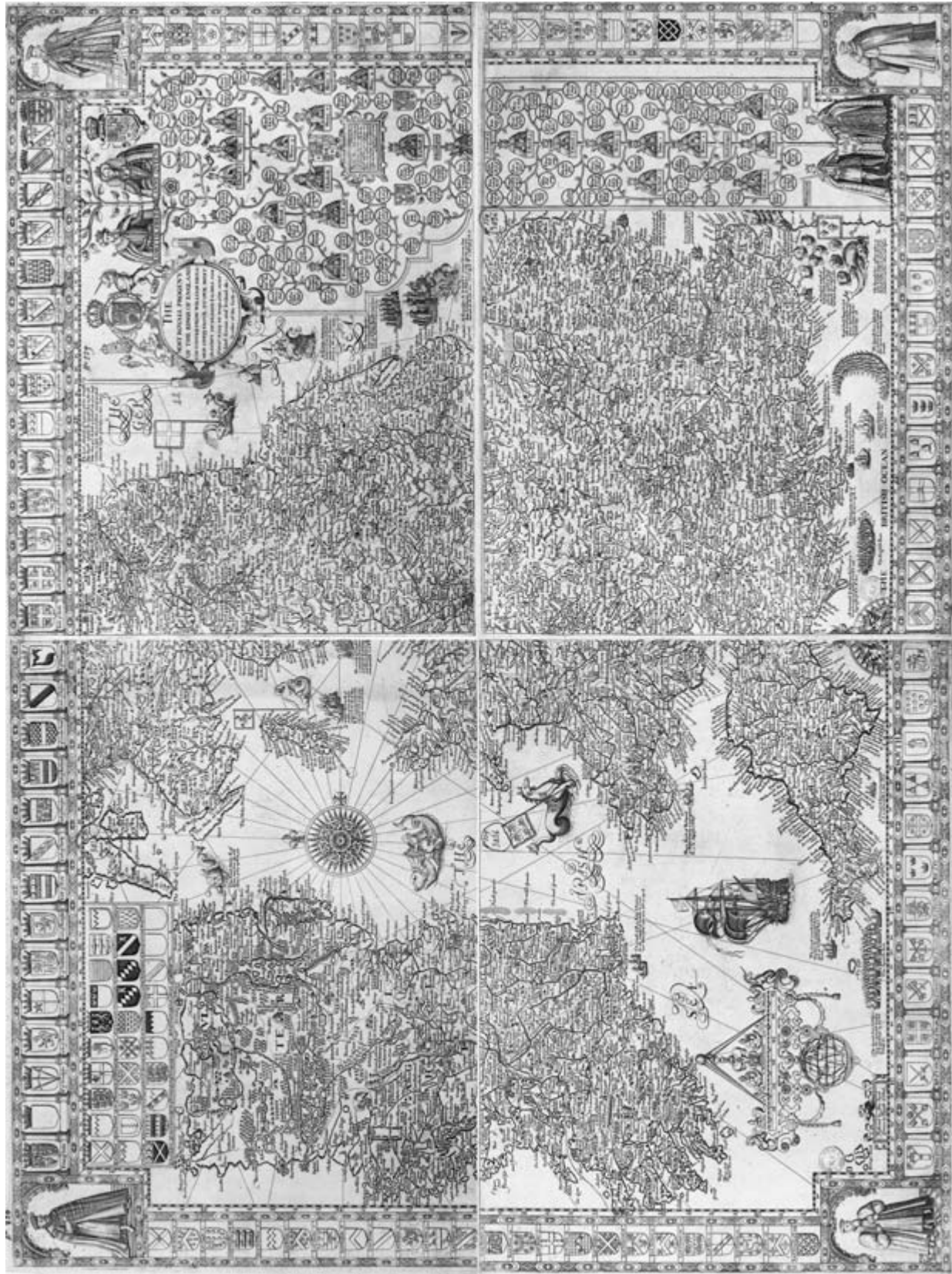


FIG. 54.21. JOHN SPEED'S "INVASIONS" MAP, 1603/4. Size of the original: 80 × 106 cm. Photograph courtesy of the BNF (Rés. Ge. DD. 6056).

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.⁵⁰⁴ 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),⁵⁰⁵ while reflecting the family’s Catholic beliefs, were also covert declarations of Ralph Sheldon’s loyalty to Elizabeth I in the years following the Armada.⁵⁰⁶

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.⁵⁰⁷ 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 maps⁵⁰⁸ 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.”⁵⁰⁹ 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 Cheney (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,⁵¹⁰ 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.⁵¹¹ 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.”⁵¹² 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.⁵¹³

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 Cordell⁵¹⁴ 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

504. Hilary L. Turner, “The Sheldon Tapestry Maps belonging to the Bodleian Library,” *Bodleian Library Record* 17 (2002): 293–311. For the Sheldon tapestries, see also Morgan, “Cartographic Image,” 152–53, and Delano-Smith and Kain, *English Maps*, 49–50.

505. Hilary L. Turner, “An Early Map of Brailes: ‘Fit Symbolographie?’” *Warwickshire History* 11 (2001): 182–93.

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.

507. Cormack, *Charting an Empire*, esp. 163–202.

508. See Delano-Smith, “Map Ownership,” passim.

509. Quoted by Mason, “Measure of Essex Cartography,” 260, and see Harvey, “English Estate Maps,” 53–56.

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.

512. William Leybourn, *The Compleat Surveyor: Containing the Whole Art of Surveying of Land* (London: Printed by R. and W. Leybourn for E. Brewster and G. Sawbridge, 1653), 274–75, quoted from Bendall, *Maps, Land and Society*, 178. For Norden’s (and Lucar and Leybourn’s) image of the Lord “sitting in his chayre [seeing] what he hath, where and how it lyeth, and in whose use and occupation every particular is,” see McRae, *God Speed the Plough*, 192–93, quoting John Norden’s *Surveior’s Dialogue*, 16.

513. “Of that Inestimable Content He Enjoys in the Muses” (lines 123–25), in Thomas Randolph, *Poems with the Muses Looking-Glasse, and Amyntas* (Oxford, 1638), 5, quoted by Bendall, *Maps, Land and Society*, 146.

514. Bendall, “Pride of Ownership.”



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).

as Israel Amyce, Mark and Samuel Pierse,⁵¹⁵ Moses Glover, or the Walker dynasty of Hanningfield in Essex⁵¹⁶ 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.⁵¹⁷

Hanging rolled or framed in their entrance halls, galleries, parlors, and great chambers, close to the family por-

traits, the maps were intended to impress visitors with the power, taste, and knowledge of the person and family who had commissioned them.⁵¹⁸ The maps would thereby rein-

515. In addition to the sources quoted in Bendall, *Dictionary*, vol. 2 (see also 1:31–32), see Mary R. Ravenhill, "Sir William Courten and Mark Peirce's Map of Coullompton of 1633," in *Devon Documents in Honour of Mrs Margery Rowe*, ed. Todd Gray (Tiverton: Devon and Cornwall Notes and Queries, 1996), xix–xxiii.

516. Edwards and Newton, *Walkers of Hanningfield*.

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

force the owners' place in society, and by extension, support the social hierarchy of which they were beneficiaries.⁵¹⁹ 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 younger 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.⁵²⁰

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,⁵²¹ 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.⁵²² 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 *Germania* 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).⁵²³ 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).⁵²⁴ 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 Pertayning to the Perfecte Arte of Navigation* (1577). In the "Armada" portrait, which is also known in several versions, the queen has her hand

Lordshippes and part of the Revenues of that potent peere and truly Honoured Algernon Percy, Earl of Northumberland, My Noble Lord and Master" by Moses Glover "Paynter and Architect" of 1635, in the style of a German *Landtafel*, 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 Hammerden 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 *Common Chronicle*, 14 and pl. 1.

519. Klein, *Writing of Space*, 55–60; Harley, "Meaning and Ambiguity," 37–38; and McRae, *God Speed the Plough*, 190 and 192.

520. Oliver Millar, *The Age of Charles I: Painting in England, 1620–1649* (London: Tate Gallery Publications, 1972), 106–8.

521. In the National Maritime Museum, London, and the Bodleian Library, respectively (discussed and illustrated in Rodríguez-Salgado, *Armada*, 226–27 and 230.)

522. 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.

523. 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.

524. Presumably 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 misdating of the painting); and Strong, *Gloriana*, 100–107.



FIG. 54.23. QUENTIN MATSYS THE YOUNGER, POR-
TRAIT 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.



FIG. 54.24. DIEGO DE ÇAIAS, HUNTING KNIFE OF HENRY VIII, CA. 1545. Knife detail of the siege of Boulogne. Length of the knife: 65.4 cm. Photograph courtesy of the Royal Collections © 2006, Her Majesty Queen Elizabeth II. Royal Library, Windsor (RCIN 61316).

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's county maps were to be found on playing cards, the fact that the English and Welsh counties totaled fifty-two being particularly convenient in this context.⁵²⁷ Although probably intended for card players, their production was justified on educational grounds and the cards were accompanied by text describing the whole country and its constitution. About five years later reductions from Saxton's maps appeared in a collection of miniature maps engraved in Amsterdam by Pieter van den Keere, a

brother-in-law of Jodocus Hondius, who in the 1590s had engraved some of Norden's *Speculum Britanniae* volumes.⁵²⁸

The sophisticated awareness of mapping in Jacobean England found perhaps its strangest expression in the regional maps by William Hole, the engraver of the maps adorning the 1607 edition of Camden's *Britannia*, which prefaced the poems in Michael Drayton's *Poly-Olbion, or a Chorographical Description of Tracts, Rivers, Mountains, Forests, and Other Parts of This Renowned Isle of Great Britain . . .* (1612–22). These relatively accurate depictions of rivers and hills 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 Owen must have regarded the event as important, as he got his cousin George Owen Harry, the rector of Whitchurch, to decorate the charter. Right at the start, before an upper margin adorned with a fox, birds, sheep, hares, monkeys, deer, squirrels, dogs, and flowers, there is a decorated initial. Standard practice dictated that it should be filled with a depiction of the en-

525. Rodríguez-Salgado, *Armada*, 270 and 274; Strong, *Gloriana*, 131–34; and Barber, "England II," 96 n. 180.

526. Claude Blair, "A Royal Swordsmith and Damascener: Diego de Çaias," *Metropolitan Museum Journal* 3 (1970), 149–92, esp. 166–72; Simon Thurley, "The Sports of Kings," in *Henry VIII: A European Court in England*, ed. David Starkey (London: Collins and Brown in association with National Maritime Museum, Greenwich, 1991), 163–71, esp. 164; *Treasures from the Royal Collection*, exhibition catalog ([London]: Queen's Gallery, Buckingham Palace, 1988), 127–28; and Jane Roberts, ed., *Royal Treasures: A Golden Jubilee Celebration* (London: Royal Collections, 2002), 238–39.

527. Hind, *Engraving in England*, 1:182–86 and pls. 103–5; Morgan, "Cartographic Image," 150–51; and Skelton, *County Atlases*, 16–18.

528. Hind, *Engraving in England*, 2:330–31, and Skelton, *County Atlases*, 22–25.

529. See particularly Helgerson, *Forms of Nationhood*, 117–22; Klein, *Writing of Space*, 150–62, esp. 156–58; and Skelton, *County Atlases*, 45–46.

530. Aberystwyth, National Library of Wales, Bronwydd 1385, reproduced and discussed in Charles, *George Owen*, 114–15 and pl. 1.

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.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.⁵³² Edward Wright enjoyed the favor of James I's eldest son Henry, Prince of Wales, who also patronized other mathematicians and mapmakers.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 mapmaking. 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 1627,⁵³⁴ 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),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.⁵³⁶ It is to be seen in the "Northumberland world map" of 1614–15,⁵³⁷ in the mapping of the Ulster plantations by such surveyors as Thomas Raven,⁵³⁸ the mapping of the northern voyages of Henry Hudson and William Baffin,⁵³⁹ John Smith's mapping of the Virginia and New England colonies,⁵⁴⁰ and Richard Norwood's accomplished survey of the newly-established English colony on

531. Alfred Benjamin Wyon, *The Great Seals of England, from the Earliest Period to the Present Time . . .* (London: E. Stock, 1887), 90–94 and pls. XXX and XXXI. Alan J. Nathanson, *Thomas Simon: His Life and Work, 1618–1665* (London: Seaby, 1975), 19–20. The Great Seal of 1649 was soon replaced by a better engraved version in 1651.

532. Bendall, *Dictionary*, 1:59–65 (table 1).

533. See Roy C. Strong, *Henry, Prince of Wales and England's Lost Renaissance* (New York: Thames and Hudson, 1986), esp. 60–61, 215, 217–19, and 222, and T. A. Birrell, *English Monarchs and Their Books: From Henry VII to Charles II* (London: British Library, 1987), 30–40.

534. Anonymous, *A Relation Apertaining to the Iland of Ree . . . with the Manner of the Siege Now Laid vnto It by the Duke of Buckingham . . . Delineated by a Well Experienced Fortificator, and an Eye Witnesse* (London: Nathaniel Butter, 1627), BL Maps CC.5a.394.

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.

536. R. Tindall to Henry Prince of Wales, 22 June 1607 (BL, Harley MS. 7007, fol. 139). Though BL, Cotton MS. Aug. I.ii.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 "draughte." 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.

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.

538. On mapping in Ireland, see chapter 55 in this volume.

539. Andrews, *Trade, Plunder and Settlement*, 344–53.

540. Andrews, *Trade, Plunder and Settlement*, 314–18, and for the map *Virginia, Discovered and Described by Captayn John Smith* (London: William Hole, 1612), see figure 59.12 and Coolie Verner, *Smith's Virginia and Its Derivatives: A Carto-Bibliographical Study of the Diffusion of Geographical Knowledge* (London: Map Collectors' Circle, 1968); for the maps of New England (1616 and later), see figure 59.13; J. B. Harley, *Maps and the Columbian Encounter: An Interpretive Guide to the Travelling Exhibition* (Milwaukee: Golda Meir Library, University of Wisconsin, 1990), 134–36; Burden, *Mapping of North America*, 202–5 and 226–29; and Barbara B. McCorkle, *New England in Early Printed Maps, 1513 to 1800: An Illustrated Carto-bibliography* (Providence R.I.: John Carter Brown Library, 2001), 16.

Bermuda in 1617.⁵⁴¹ 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 *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,⁵⁴² London was the only town that merited such treatment on account of its size. Even then the plan, or *Guide for Country Men to the Famous Cittie of London . . . by the Help of wich . . . 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.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 commemorative plans of Civil War battles published in the 1640s.⁵⁴⁴ Aaron Rathborne's attempt in 1617 to win support for the creation of a series of town plans came to nothing.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.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.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.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.⁵⁴⁹ Bendall has suggested that the fraction of named mapmakers engaged in

541. William Blathwayt, *The Blathwayt Atlas: A Collection of 48 Manuscript and Printed Maps of the 17th Century . . . Brought Together . . . By William Blaythwayt*, 2 vols., ed. Jeannette Dora Black (Providence, R.I.: Brown University Press, 1970–75), vol. 2, *Commentary*, by Jeannette Dora Black, 149–53, and Edward Lynam, "Early Days in Bermuda and the Bahamas," in *Mapmaker's Art*, 117–36, esp. 118 and 120–21. Figure 59.11 is a later printed version of the map of Bermuda.

542. Thomas Frangenberg, "Chorographies of Florence: The Use of City Views and City Plans in the Sixteenth Century," *Imago Mundi* 46 (1994): 41–64, who dates the appearance of the first single-sheet maps of Florence intended for tourists to the very end of the sixteenth century.

543. Howgego, *Printed Maps of London*, 5. The unique surviving copy of the first impression is in the Royal Library, Windsor Castle.

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.

545. Delano-Smith and Kain, *English Maps*, 214.

546. Smith, "Enduring Image," 172.

547. Bendall, *Dictionary*, 1:59–65 (table 1).

548. Now in Vatican City, Biblioteca Apostolica Vaticana, Barb. Lat. 4357 (old number XLVIII, 125; Har. 36; Kr. 41 or 42): an atlas of 1541/42, with ten charts, declination table, armillary sphere, and zodiac with a dedication to Henry VIII and his arms. Roberto Almagià, *Monumenta cartographica Vaticana*, 4 vols. (Vatican City: Biblioteca Apostolica Vaticana, 1944–55), 1:68–69, and, more generally, in Ronald Lightbown, "Charles I and the Tradition of European Princely Collecting," in *The Late King's Goods: Collections, Possessions and Patronage of Charles I in the Light of the Commonwealth Sale Inventories*, ed. Arthur MacGregor (London: A. McAlpine in association with Oxford University Press, 1989), 53–72.

549. For the cartographic offshoots of this activity, see, for instance, the "Map of the Fens" (1642) to which Cornelis Vermuyden contributed in his *A Discourse Touching the Drayning of the Great Fennes* (London: T. Fawcett, 1642).



FIG. 54.25. BERNARD DE GOMME, FORTIFICATION OF LIVERPOOL, 1644. A plan of Liverpool, which according to an inscription, “was beginning but not finitz.” Size of the original: ca. 41 × 55.1 cm. Photograph courtesy of the BL (Add. MS. 5027A, fol. 69).

estate and other local mapped surveys rose from 40 percent in 1600 to no less than 68 percent by 1650—a percentage that was maintained to the mid-nineteenth century. Numerically this percentage translated into an increase from about 220 named local mapmakers in 1600 to 600 in 1650.⁵⁵⁰ In the same period the fraction of named mapmakers involved in mapping plantations in Ireland is estimated to have grown from 6 percent of all named local mapmakers to no less than 11 percent.⁵⁵¹ Surveyors involved with colonial mapping in North America, as discussed in chapter 59 in this volume, probably increased in number to a similar extent. From the 1590s, as explained in chapter 58 in this volume, chartmaking had taken root on the banks of the River Thames in the docklands east of the Tower of London through a series of master-apprentice relationships that were to continue into the eighteenth century.

As seems universally to be the case, the outbreak of the Civil Wars provided a slight spur to cartographic activity. At Thomas Jenner’s instigation, in 1644 Wenceslaus Hollar re-engraved Saxton’s wall map of 1583 as the so-called Quartermaster’s map that was explicitly intended to assist in the search for billets for the troops.⁵⁵² In the same spirit Jenner was also stimulated to reissue miniature county maps by Jacob Floris van Langren, sometimes accompanied by distance tables, which were revised to reflect the course of the wars.⁵⁵³ Also in this period a young Dutch military engineer in the service of Charles I, Bernard de Gomme, who was to make a career for himself under Charles II, produced manuscript plans of the fortifications of a handful of towns and harbors (fig. 54.25), although no action seems to have resulted from them.⁵⁵⁴ Crude

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.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

550. Bendall, *Dictionary*, 1:11–17.

551. Bendall, *Dictionary*, 1:59–65 (table 1), and Andrews, *Plantation Acres*.

552. Skelton, *Saxton’s Survey*, 14–15 and 21–22.

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, *County Atlases*, 68–70.

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.

555. For instance, *The Description of the Armies of Horse and Foot of His Majesties, and Sr Thomas Fairefax His Excellency, as They were Drawn into Severall Bodyes at the Battayle at Nasbye the Fowerteenth Day of June 1645. Streeter fecit*, in *Anglia rediviva*, by Joshua Sprigg (London: John Partridge, 1647); *A Description of the Seidge of Newark upon Trent, with the Fortifications about the Toune as also the Forme of the Entrenchements, 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. Eglesfield, 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.