

44 • Commercial Cartography and Map Production in the Low Countries, 1500–ca. 1672

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LOUVAIN: CENTER OF LEARNING

The center for commercial cartography in the sixteenth-century Low Countries was Antwerp, a city of printers, booksellers, engravers, and artists. But Louvain was the center of learning and the meeting place of scholars and students at the university. Like the circles in Vienna-Klosterneuburg (in the first half of the fifteenth century), Saint-Dié in the Vosges (ca. 1490–1520), and Basel (where Sebastian Münster worked from 1520 to 1579), Louvain became a center for the exchange of ideas and education and had an important effect on cartography.

Mathematics, globemaking, and instrumentmaking were practiced in and around the University of Leuven (Louvain) as early as the first decades of the sixteenth century.¹ The university is the oldest in the Low Countries (founded in 1425) and the oldest center of both scientific and practical cartography. Without the influence of several outstanding scholars of Louvain (Gemma Frisius, Jacob van Deventer, and Gerardus Mercator), cartography in the Low Countries would not have attained the quality and exerted the influence that it did.

Louvain's connections with England provide an example of its influence. In 1547, John Dee, the versatile English scholar, went overseas to confer with "some learned men, and chiefly Mathematicians, [such] as Gemma Phrysius, Gerardus Mercator, Gaspar à Myrica [Gaspard van der Heyden], Antonius Gogava." After a stay of several months in Louvain, he returned to England and took with him some astronomical instruments made by Gemma Frisius and two great globes made by Mercator.² Between 1548 and 1550, Dee again visited Louvain, and it was during that period that he was most closely associated with Mercator.

An important member of the Louvain geographic circle was the goldsmith and instrumentmaker Gaspard van der Heyden.³ He engraved and constructed the terrestrial globe designed by Franciscus Monachus of Mechelen that was commissioned by Roeland Bollaert about 1526/27, and also globes designed by Gemma Frisius in 1529/30, 1536, and 1537.⁴ No example of the Monachus globe, the first produced in the Low Countries, has been preserved. We know of its existence from a printed descrip-

tion in *De orbis situ* in which a simplified rendering of the globe in two hemispheres was printed on the title page (see fig. 10.2).⁵ Although it is small, it is nevertheless im-

Abbreviations used in this chapter include: *Abraham Ortelius* for M. P. R. van den Broecke, Peter van der Krogt, and Peter H. Meurer, eds., *Abraham Ortelius and the First Atlas: Essays Commemorating the Quadricentennial of His Death, 1598–1998* ('t Goy-Houten: HES, 1998); *Gerardus Mercator Rupelmundanus* for Marcel Watelet, ed., *Gerardus Mercator Rupelmundanus* (Antwerp: Mercatorfonds, 1994); GN for Peter van der Krogt, *Globi Neerlandici: The Production of Globes in the Low Countries* (Utrecht: HES, 1993); KAN for Peter van der Krogt, *Koeman's Atlantes Neerlandici* ('t Goy-Houten: HES, 1997–); and MCN for Günter Schilder, *Monumenta cartographica Neerlandica* (Alphen aan den Rijn: Canaletto, 1986–).

1. Antoine De Smet, "Louvain et la cartographie scientifique dans la première moitié du XVI^e siècle," *Janus* 54 (1967): 220–23.

2. GN, 70; E. G. R. Taylor, *Tudor Geography, 1485–1583* (London: Methuen, 1930), 256; and Antoine De Smet, "Leuven als centrum van de wetenschappelijke kartografische traditie in de voormalige Nederlanden gedurende de eerste helft van de 16^e eeuw," in *Feestbundel opgedragen aan L. G. Polspoel* (Louvain: Geografisch Instituut, Katholieke Universiteit, 1967), 97–116, esp. 113–14, reprinted in *Album Antoine De Smet* (Brussels: Centre National d'Histoire des Sciences, 1974), 329–45, esp. 343. Globes, instruments, and many books were lost when a mob destroyed Dee's library in 1583, as he wrote in his autobiography. See also R. A. Skelton, "Mercator and English Geography in the 16th Century," in *Gerhard Mercator, 1512–1594: Festschrift zum 450. Geburtstag*, Duisburger Forschungen 6 (Duisburg-Ruhrort: Verlag für Wirtschaft und Kultur W. Renckhoff, 1962), 158–70, esp. 159; Peter J. French, *John Dee: The World of an Elizabethan Magus* (London: Routledge and Kegan Paul, 1972); Taylor, *Tudor Geography*, 78–139; and Helen Wallis, "Globes in England Up to 1660," *Geographical Magazine* 35 (1962–63): 267–79.

3. Van der Heyden was also known as Gaspar à Myrica, de Merica, or Amyricius. See Antoine De Smet, "Heyden (A Myrica, De Mirica, Amyricius) Gaspard van der (Jaspar of Jasper), goudsmid, graveur, constructeur van globen en wellicht van wiskundige instrumenten," in *Nationaal biografisch woordenboek* (Brussels: Paleis der Academiën, 1964–), 1:609–11, and GN, 41–48, esp. 46.

4. GN, 409–12 (BOL I), and Antoine De Smet, "L'orfèvre et graveur Gaspar vander Heyden et la construction des globes à Louvain dans le premier tiers du XVI^e siècle," *Der Globusfreund* 13 (1964): 38–48, reprinted in *Album Antoine De Smet* (Brussels: Centre National d'Histoire des Sciences, 1974), 171–82.

5. *De orbis situ ac descriptione, ad reuerendiss (1526/27)*. See Antoine De Smet, "Cartographes scientifiques néerlandais du premier tiers du XVI^e siècle—Leurs références aux Portugais," *Revista da Faculdade de Ciências, Universidade de Coimbra* 39 (1967): 363–74, reprinted in *Album Antoine De Smet* (Brussels: Centre National d'Histoire des Sciences, 1974), 171–82.

portant, both because it is the oldest engraved map printed in the Low Countries and because it was the first representation of the world in two hemispheres.

Gemma Frisius was one of the most famous representatives of the sixteenth-century geographic circle in Louvain.⁶ Influenced by German scholars such as Peter Apian and Sebastian Münster and by mathematicians in the Low Countries, his globes and his globe manual (*De principiis astronomiae & cosmographiae*, 1530) made substantial contributions to geography. It is important to note, however, that Van der Heyden and Mercator collaborated in the construction and engraving of the globes. This is clear from the legend on the celestial globe: “Made by Gemma Frisius, doctor and mathematician, Gaspar à Myrica [Van der Heyden], and Gerardus Mercator of Rupelmonde in the year of the virgin birth 1537.”⁷

Gemma Frisius is also well known for his new editions of Peter Apian’s *Cosmographicus liber* beginning in 1529.⁸ In a supplement to the Latin edition of 1533, he first published a fundamental new contribution to applied geometry in land surveying, *Libellus de locorum describendorum ratione*.⁹ Gemma Frisius introduced a method of topographic surveying contrary to that described by Münster,¹⁰ a method of intersection of sights from two stations: the “voorwaartse snijding” (forward section or intersection). This was, in fact, the principle of triangulation, and Gemma Frisius was the first to publish a full description of it for mapping. Two additional inventions introduced in his treatise were his “astrolabium catholicum” and a theoretical description of the method of determining difference in geographical longitude by means of traveling with chronometers.¹¹ Thanks to the enormous success of the *Libellus*, Gemma Frisius was long considered the founder of modern surveying. He was even said to have instructed the geographer Jacob van Deventer, who definitively used triangulation in his maps of the provinces and towns of the Low Countries. Although Gemma Frisius and Van Deventer studied at the same university, where they both took courses in mathematics, Van Deventer was registered as a student in 1520, but Gemma Frisius was not registered before 1526. De Smet has suggested that it was not Gemma Frisius but Van Deventer who first used triangulation as a method of topographical surveying in a Dutch regional map.¹² The geometrical accuracy of the map of the duchy of Brabant, surveyed by Van Deventer and published in 1536, and of subsequent maps made by Van Deventer demonstrates without doubt that he employed triangulation. Final proof is found in the legend of the map of Gelderland from 1543: “But those places that do not have this symbol ☉ are not so well and perfectly plotted as the others because one was not free to move and take measurement everywhere. However, those places have a more reliable position than in any other map so far published.” The time between the appearance

of the *Libellus* in 1533 and the publication of the map of Brabant in 1536 was certainly too short for Van Deventer to have triangulated such a large area. More important than the question of which of the two—Van Deventer or Gemma Frisius—first used triangulation is the fact that the theory as well as the practice of this method was the result of the fundamental study of mathematics at the University of Leuven.

ces, 1974), 123–30. Short biographical sketches of Franciscus Monachus can be found in Peter H. Meurer, *Fontes cartographici Orteliani: Das “Theatrum orbis terrarum” von Abraham Ortelius und seine Kartenquellen* (Weinheim: VCH, Acta Humaniora, 1991), 202–3, and Robert W. Karrow, *Mapmakers of the Sixteenth Century and Their Maps: Bio-Bibliographies of the Cartographers of Abraham Ortelius, 1570* (Chicago: For the Newberry Library by Speculum Orbis Press, 1993), 407–9. See also GN, 43–44.

6. Fernand van Ortrooy, *Bio-Bibliographie de Gemma Frisius* (1920; reprinted Amsterdam: Meridian, 1966); Henry de Vocht, *History of the Foundation and the Rise of the Collegium Trilingue Lovaniense, 1517–1550*, 4 vols. (Louvain: Bibliothèque de l’Université, Bureau de Recueil, 1951–55), 2:542–65; Karrow, *Mapmakers of the Sixteenth Century*, 205–15; and Antoine De Smet, “Gemma (Gemme, Jemme, Gemmon, Stratagem), Frisius (Phrysius, de Fries), wiskundige-astronoom en astroloog, geneesheer, professor in de wiskunde en de geneeskunde te Leuven, ontwerper van globen en wiskundige instrumenten, auteur van geografische en wiskundige traktaten,” in *Nationaal biografisch woordenboek* (Brussels: Paleis der Academiën, 1964–), 6: 315–31. There is disagreement over the proper form of Gemma Frisius’s name. Van Ortrooy, in *Bio-Bibliographie*, 9–12, makes it clear that “Gemma” is his Christian name and not his family name. In his scientific work Gemma never used this form, but took the adjectival form of his country, Frisius (the Frisian), as a kind of family name. But see p. 480, note 21.

7. De Smet, “L’orfèvre et graveur Gaspar vander Heyden,” 47 (179 in reprint), and GN, 55 and 410–12 (FRI I/II).

8. Van Ortrooy, *Bio-Bibliographie de Gemma Frisius*, 165–85, and Karrow, *Mapmakers of the Sixteenth Century*, 205.

9. A new typeset edition of the *Libellus* is in Gemma Frisius, *Een nuttig en profijtelijk boekje voor alle geografen*, intro. H. C. Pouls (Delft: Nederlandse Commissie voor Geodesie, 1999).

10. Sebastian Münster, *Erklerung des neuen Instruments der Sünnen nach allen seinen Scheyben und Cirkeln: Item eyn Vermanung Sebastiani Münnster an alle Liebhaber der Künstenn, im Hilff zu thun zu warer unnd rechter Beschreybung Teütscher Nation* (Oppenheim: Iacob Kobel, 1528).

11. “Astrolabium catholicum” means universal (that is, multipurpose) astrolabe. It is similar to astrolabes used in astronomy, which consist of a metal circular plate with graduations over which an alidade with two sights revolves diametrically. Unlike this astronomical device, the *astrolabium* designed by Gemma Frisius is made of thick paper and provided with a circular plate on which the geographical grid of meridians and parallels is shown in a stereographic projection. On top is a ruler and a metal arm that can move over the graticule and set a pointer on any desired geographical coordinate. Pilots used the device to achieve a quick graphic solution to standard problems in navigation (for example, given the geographical coordinates of two ports, the distance between them could be calculated). See C. Koeman, “The Astrolabium Catholicum,” *Revista da Universidade de Coimbra* 28 (1980): 65–76.

12. De Smet, “Leuven als centrum van de wetenschappelijke kartografische traditie,” 334–36.

The “voorwaartse snijding” describes the graphic application of a mathematical fact. Using a baseline with known end points, one can very simply determine the position of another point by calculating the two angles that point makes with the end points of the baseline. It is thus unnecessary to measure or estimate the distances between the point and the baseline. Gemma Frisius explained his finding with reference to a measurement in Brabant, using an imaginary baseline between Brussels and Antwerp (see fig. 19.3). His method of working was faster and more precise than other methods of that time, including the construction of a polygon by measuring its sides and distances across using paces, a rod, or a measuring cord.

The “voorwaartse snijding” was popular among Dutch surveyors for a long time. In the handbook *Practijck des lantmetens* by Johannes Sems and Jan Pietersz. Dou (first edition Leiden, 1600),¹³ the same method is explained using the example of a measurement in the province of Holland with Leiden–Delft as the baseline, which demonstrates the long-term influence of the Louvain tradition in general, and Gemma Frisius in particular, on land surveying in the Low Countries.

Early in the seventeenth century, the Leiden astronomer Willebrord Snell van Royen, or Snellius, produced an extensive triangulation of the provinces of Holland, Utrecht, and Brabant. He was primarily interested in the dimensions of the earth and hoped to determine them using degree measurements. To that end, he made astronomical calculations of the locations of places, which he connected with a network of triangles. The work of Snellius, however, had no influence on the measurement methods of surveyors in the Low Countries. At that time, no one considered the possibility that precise triangulation might be an excellent foundation for measuring and mapping a large area.¹⁴ Although there are indications that triangulation for surveying had been done in what we now call Limburg between 1710 and 1716,¹⁵ the first comprehensive triangulation of the northern part of the Low Countries (then known as the Batavian Republic) was not carried out until 1801–11.

THE RISE OF COMMERCIAL CARTOGRAPHY IN THE LOW COUNTRIES (TO CA. 1672)

The history of commercial cartography—the production and sale of maps, atlases, and globes in order to make a profit¹⁶—in the Low Countries through the end of the seventeenth century can be divided into two parts. The first, the southern Dutch period, lasted until about 1600 with Antwerp as the center of production. It was followed, with several decades’ overlap, by the northern Dutch period, during which the production of maps and atlases was concentrated in Amsterdam. In the Low Countries, Gerardus Mercator was the founder of commercial map

production.¹⁷ He registered at the University of Leuven in 1530 to study philosophy. It was there that he began to enjoy, somewhat later, the support of the instructor Gemma Frisius. He read the *De revolutionibus* of Copernicus and was convinced of its validity. He continued, however, to wrestle with issues of deep religious significance for the rest of his life, primarily the incompatibility of the creation story with Aristotelian theories. He moved from Louvain to Antwerp while he was still a student and ended his study of philosophy in 1534 in order to devote himself to mathematics and the commercial-technical application of his accumulated theoretical knowledge. He also steeped himself in copper engraving, which became the foundation of his cartographic work. Although Mercator saw himself more as an academic cosmographer, it was an economic necessity that he earn his living by trading in maps. The volume of his cartographic production

13. Figure 43.23; on Jan Pietersz. Dou and his relationship with Johannes Sems, see Frans Westra, “Jan Pietersz. Dou (1573–1635): Invlodrijk landmeter van Rijnland,” *Caert-Thresoor* 13 (1994): 37–48. This article includes a list of maps and *kaartboeken* produced by Dou.

14. J. D. van der Plaats, “Overzicht van de graadmetingen in Nederland,” *Tijdschrift voor Kadaster en Landmeetkunde* 5 (1889): 3–42, esp. 3–38; N. D. Haasbroek, “Willebrord Snell van Royen, zijn leven en zijn werken,” in *Instrumentatie in de geodesie* (Delft: Landmeetkundig Gezelschap “Snellius,” 1960), 10–39; and H. C. Pouls, *De landmeter: Inleiding in de geschiedenis van de Nederlandse landmeetkunde van de Romeinse tot de Franse tijd* (Alphen aan den Rijn: Canaletto/Repro-Holland, 1997), 261–64. According to Pouls, Snellius’s method was not adopted in the Low Countries because it was published in Latin, land surveyors were unfamiliar with the idea of determining the size of the earth, and there was no illustration of the network of triangles.

15. Pouls, *De landmeter*, 265–66.

16. Peter van der Krogt, “Commercial Cartography in the Netherlands, with Particular Reference to Atlas Production (16th–18th Centuries),” in *La cartografia dels Països Baixos* (Barcelona: Institut Cartogràfic de Catalunya, 1995), 71–140, esp. 73.

17. See, among other works, Marcel Watelet, ed., *Gerardus Mercator Rupelmundanus*, in French, *Gérard Mercator cosmographe: Le temps et l'espace* (Antwerp: Fonds Mercator Paribas, 1994); *Gerard Mercator en de geografie in de Zuidelijke Nederlanden (16^{de} eeuw)/Gerard Mercator et la géographie dans les Pays-Bas méridionaux (16^e siècle)*, exhibition catalog (Antwerp: Stad Antwerpen, 1994); Karrow, *Mapmakers of the Sixteenth Century*, 376–406; Gerardus Mercator, *Correspondance Mercatorienne*, ed. Maurice van Durme (Antwerp: Nederlandse Boekhandel, 1959); Antoine De Smet, “Gerard Mercator: Iets over zijn oorsprong en jeugd, zijn arbeid, lijden en strijden te Leuven (1530–1552),” *Buitengewone uitgave van de Oudheidkundige Kring van het Land van Waas* 15 (1962): 179–212; Rolf Kirmse, “Mercator-Korrespondenz: Betrachtungen zu einer neuen Publikation,” *Duisburger Forschungen* 4 (1961): 63–77; Fernand van Orttroy, *Bibliographie sommaire de l'oeuvre Mercatorienne* (Paris, 1918–20), reprinted as *Bibliographie de l'oeuvre Mercatorienne* (Amsterdam: Meridian, 1978); idem, “L'oeuvre géographique de Mercator,” *Revue des Questions Scientifiques*, 2d ser., 2 (1892): 507–71, and 3 (1893): 556–82; and Jean van Raemdonck, *Gérard Mercator: Sa vie et ses oeuvres* (St. Nicolas: Dalschaert-Praet, 1869). See also Nicholas Crane, *Mercator: The Man Who Mapped the Planet* (London: Weidenfeld and Nicolson, 2002), and Andrew Taylor, *The World of Gerard Mercator: The Mapmaker Who Revolutionized Geography* (New York: Walker, 2004).

was not large. His work from the Louvain/Antwerp period includes wall maps of Palestine (1537),¹⁸ a world map in folio (1538),¹⁹ a wall map of Flanders (1540),²⁰ and a pair of globes (1541/51).²¹ The majority of Mercator's cartographic production took place in Duisburg in the German Rhineland, where he established himself in 1552. There he was able to realize his most remarkable cartographic works, based on his experience and the skills he had acquired, primarily while in Louvain. Moreover, his business relationship with Christoffel Plantijn allowed Mercator's work to serve as an example for subsequent mapmakers in the Low Countries.²² Mercator's publications, along with those of others, were the basis for the later cartographic work of Hondius and Janssonius, who used the original copperplates.

From a profit perspective, the production of maps and related publications changed during Mercator's time from a matter of secondary importance involving a few scholars and printers to a primary economic activity involving a large group of entrepreneurs. The Frankfurt Book Fair (Buchmesse) played an extremely important role in this development, and the sixteenth-century trade in Dutch maps was spurred on by the fair. Several decades later, it would be seventeenth-century Amsterdam that would provide the world with maps, atlases, and globes.

ANTWERP AS THE CENTER OF MAP PRODUCTION

Around 1500, Antwerp was already an important seaport town of forty thousand inhabitants. However, business activities there still had a distinctly regional character. Twice a year, the Fairs of Brabant in the nearby town of Bergen op Zoom took place. Antwerp was the place where the Portuguese exchanged their wares from the East for large quantities of southern German gold, silver, and copper. The mutually profitable enterprise made it possible for the Portuguese and southern Germans to make large-scale purchases of English cloth, among other things. Eventually, products from the Low Countries also made their way into Antwerp's developing world market, including linen and wool. In the middle decades of the sixteenth century, Antwerp occupied a position of hegemony in trade and industry and was the leading commercial city of western Europe. Around 1560, the population of Antwerp had increased to one hundred thousand, the largest urban agglomeration in Europe after Paris and a few Italian cities. The city's prosperity created excellent conditions for the development of the arts and sciences and provided fertile ground for the growth of both geographical studies and the graphic arts. The printing houses of Antwerp also profited from this surge in prosperity, and beginning at the end of the fifteenth century, many grew into large enterprises that managed to secure a monopoly on book and print production. Trying to strengthen their foothold, especially in the lucrative Ger-

man market, typographers from Antwerp were prominently in attendance at the Frankfurt Book Fairs, where printers, publishers, and booksellers met to conduct business. They were accompanied by colleagues from Antwerp who specialized in prints and maps. Thus, just as Antwerp had a concentration of the printing industry within its city walls, it also functioned as a magnet for people involved in the map industry. Consequently, it is no surprise that we find the roots of a great map industry in this economic center of the Low Countries.²³ The leadership of this industry gradually passed to the Northern

18. Catherine Delano-Smith and Elizabeth Morley Ingram, "De kaart van Palestina," in *Gerardus Mercator Rupelmundanus*, 268–83; Roberto Almagià, "Una serie di preziose carte di Mercator conservate a Perugia," *L'Universo* 7 (1926): 801–11, esp. 804–6; and idem, *La carta delle Palestina di Gerardo Mercatore (1537)* (Florence: Istituto Geografico Militare, 1927). A second copy of this map (printed by Claes Jansz. Visscher before 1618) can be found in the collection of Jean-Baptiste Bourguignon d'Anville in the BNF. See Marcel Destombes, "Un nouvel exemplaire de la carte de Palestine de Mercator de 1537," *Annales van de Oudheidkundige Kring van het Land van Waas* 75 (1972): 19–24.

19. Two copies exist, one in New York, New York Historical Society, and the other in Milwaukee, American Geographical Society Collection. See Jean van Raemdonck, *Orbis imago: Mappemonde de Gérard Mercator de 1538* (Saint-Nicolas: J. Edom, 1886), extract from *Annales du Cercle Archéologique du Pays de Waas* 10 (1886): 301–93; Gilbert A. Cam, "Gerard Mercator: His 'Orbis Imago' of 1538," *Bulletin of the New York Public Library* 41 (1937): 371–81; Rodney W. Shirley, *The Mapping of the World: Early Printed World Maps, 1472–1700*, 4th ed. (Riverside, Conn.: Early World Press, 2001), 83–84 (no. 74); and A. E. Nordenskiöld, *Facsimile-Atlas to the Early History of Cartography*, trans. Johan Adolf Ekelöf and Clements R. Markham (Stockholm: P. A. Norstedt, 1889), 107–8 and pl. 43.

20. See, figure 43.11 and, among other works, Alfred van der Gucht, "De kaart van Vlaanderen," in *Gerardus Mercator Rupelmundanus*, 284–95.

21. Elly Dekker and Peter van der Krogt, "De globes," in *Gerardus Mercator Rupelmundanus*, 242–67, and GN, 413–15 (MER).

22. D. Imhof, "De 'Officina Plantiniana' als verdeelcentrum van de globes, kaarten en atlases van Gerard Mercator/L' 'Officina Plantiniana,' centre de distribution des globes, cartes et atlas de Gerard Mercator," in *Gerard Mercator en de geografie in de Zuidelijke Nederlanden (16^{de} eeuw)/Gerard Mercator et la géographie dans les Pays-Bas méridionaux (16^e siècle)*, exhibition catalog (Antwerp: Stad Antwerpen, 1994), 32–41; Peter van der Krogt, "Erdgloben, Wandkarten, Atlanten—Gerhard Mercator kartiert die Erde," *Gerhard Mercator, Europa und die Welt*, exhibition catalog (Duisburg: Stadt Duisburg, 1994), 81–130; Jean van Raemdonck, "Relations commerciales entre Gérard Mercator et Christophe Plantin à Anvers," *Bulletin de la Société de Géographie d'Anvers* 4 (1879): 327–66; Jean Denucé, *Oud-Nederlandsche kaartmakers in betrekking met Plantijn*, 2 vols. (Antwerp: De Nederlandsche Boekhandel, 1912–13; reprinted Amsterdam: Meridian, 1964), 2:279–323; and Léon Voet, "Les relations commerciales entre Gérard Mercator et la maison Plantinienne à Anvers," in *Gerhard Mercator, 1512–1594: Festschrift zum 450. Geburtstag*, Duisburger Forschungen 6 (Duisburg-Ruhrort: Verlag für Wirtschaft und Kultur W. Renckhoff, 1962), 171–232.

23. For a description of the milieu surrounding map production in Antwerp at that time, see Léon Voet, "Abraham Ortelius and His World," in *Abraham Ortelius*, 11–28, esp. 11–15.

Provinces after Antwerp fell to the Spanish governor general, Alessandro Farnese, the Duke of Parma, in 1585, securing the southern Netherlands for Spain.

Early Development: Plantijn and Cock

Several printers, engravers, and scholars settled temporarily or permanently in Antwerp in order to share in the prosperity of that town. Those involved in print and map production included Hieronymus Cock, Gerard de Jode, Filips Galle, Abraham Ortelius, Bernard van den Putte, Arnold Nicolai, Willem Sylvius, Hans Lieftrinck, and Joan Baptista Vrients.

Christoffel Plantijn did not play a significant role in the compiling, engraving, and printing of maps, but his extensive trade in maps and atlases in the southern Netherlands is revealed by his remarkable archives.²⁴ Although many maps recorded in his registers have not survived, the Plantijn archives, when combined with the list of mapmakers in the various editions of Ortelius's *Theatrum orbis terrarum* and the inventory lists of collections (such as those of Viglius van Aytta), provide an extraordinarily important source for the study of sixteenth-century cartography in the Low Countries.

Hieronymus Cock, who was working at the sign of the Four Winds (aux Quatre Vents), must be considered one of the first publishers of large-scale map prints in northern Europe; his output surpassed that of Hans Lieftrinck and Gerard de Jode in the mid-1550s.²⁵ The engravers and etchers Joannes van Doetecum and his brother Lucas were employees of Cock,²⁶ who favored etching less for its aesthetic qualities than for its technical facility. Very few of the maps printed by Cock have survived (fig. 44.1). Although the work of several cartographers can be identified, the authorship is unknown for a number of the original drawings on which the maps are based. The maps printed by Cock at aux Quatre Vents are listed in appendix 44.1.

Initially, neither Plantijn nor Cock sold many Dutch maps abroad. Around 1550, the international map business was still dominated by Italian publishers, and only the globes of Gemma Frisius and Mercator enjoyed an export market. This situation changed gradually during the second half of the sixteenth century. Eventually, Plantijn successfully monopolized the map industry, although distribution diminished following the Spanish Fury of 1576, the riot of Spanish soldiers caused by their nonpayment. Between 1566 and 1576, for example, Plantijn sold almost 250 maps in France. With respect to Germany, England, Spain, and Italy, however, sales involved only several dozen maps.²⁷ Not until the emergence of Amsterdam as a cartographic center in the seventeenth century did the map material of the Low Countries attain substantial international distribution.

Antwerp Mapmakers in the Second Half of the Sixteenth Century

Contrary to the situation in the first half of the seventeenth century, relatively few maps were produced in the Low Countries in the second half of the sixteenth century, and no publishers were seriously occupied with the publication of maps. In order for their businesses to make any profit, they had to deal in prints and books. A contemporary of Cock in the field of printselling and map publishing was Gerard de Jode from Nijmegen, who in 1547 entered the Antwerp Saint Lucas Guild, a union of book and map printers and sellers that served the economic and social interests of the associated members.²⁸ De Jode was himself a very capable copper engraver. His publishing house, which he ran with his employees the Van Doetecums and the Wierix brothers, Jan and Anton, was substantial and turned out prints of all kinds—religious, political, and emblematic, as well as portraits and maps—in ever-increasing quantities. He was also engaged in the import, sale, copying, engraving, and publication of prints, and by the mid-1550s he had started a very profitable business engraving and publishing copies of the best existing maps of the countries of Europe. De Jode's stand at the Frankfurt Book Fair played a crucial role in the development of his business. It provided not only an outlet for the sale of his own work, but a means of acquiring foreign prints and maps—especially German, Italian, and French—which he and his partners often used as models for their own work. Thus, the Frankfurt Book Fair served as an extremely important link in the international map trade.²⁹

24. Denucé, *Oud-Nederlandsche kaartmakers*, and Léon Voet, *The Golden Compasses: A History and Evaluation of the Printing and Publishing Activities of the Officina Plantiniana at Antwerp*, 2 vols. (Amsterdam: Vangendt, 1969–72).

25. Timothy A. Riggs, *Hieronymus Cock: Printmaker and Publisher* (New York: Garland Publishing, 1977). Günter Schilder provides a list of copperplates from Cock's inventory in *MCN*, 5:223 n. 28.

26. For a detailed summary of the activities of the Van Doetecums, see *The New Hollstein Dutch & Flemish Etchings, Engravings and Woodcuts, 1450–1700*, vols. 7–10, *The Van Doetecum Family*, in 4 pts., comp. Henk Nalis, ed. Ger Luijten and Christiaan Schuckman (Rotterdam: Sound & Vision Interactive Rotterdam, 1998); pts. 1–3 discuss specifically their activities in Antwerp.

27. Imhof, "De 'Officina Plantiniana,'" 35–37; Léon Voet, "Christoffel Plantijn (ca. 1520–1589), drukker van het humanisme," and Elly Cockx-Indestege, "Plantijn en de exacte wetenschappen," both in *Christoffel Plantijn en de exacte wetenschappen in zijn tijd*, ed. Elly Cockx-Indestege and Francine de Nave, exhibition catalog (Brussels: Gemeentekrediet, 1989), 32–43 and 45–60; and Voet, "Les relations commerciales."

28. Fernand van Ortroy, *L'œuvre cartographique de Gérard et de Corneille de Jode* (Gand, 1914; reprinted Meridian, 1963); Denucé, *Oud-Nederlandsche kaartmakers*, 1:163–220; and *MCN*, 5:36–47.

29. *MCN*, 1:89–109, 5:36, and 5:219–20, and Günter Schilder, "The Cartographical Relationships between Italy and the Low Countries in the Sixteenth Century," *Map Collector* 17 (1981): 2–8.



FIG. 44.1. WALL MAP OF SPAIN, HIERONYMUS COCK, 1553.

Size of the original: 76.8 × 95 cm. Photograph courtesy of the

Klassik Stiftung Weimar/Herzogin Anna Amalia Bibliothek (Kt 221-311 R).

Even before the publication of his magnum opus, *Speculum orbis terrarum*, in 1578, De Jode had been active in the publication of unbound maps (fig. 44.2). In some cases, he was responsible for preserving sixteenth-century maps by engraving copies of maps by major cartographers that would otherwise have been lost. He had a special affinity for the maps of Giacomo Gastaldi, some of which he had copied to incorporate in his atlas but offered for sale separately.

The separate maps published by De Jode that were not included in his later atlases are now extremely rare and often known only from a single example. The list in appendix 44.2 gives a summary of all of De Jode's maps and includes several sheets that were unknown until recently. These maps all bear Gerard de Jode's imprint as publisher, but only five bear the engravers' name—three by

Joannes and Lucas van Doetecum and two by De Jode himself.³⁰

De Jode's son Cornelis, who entered the Saint Lucas Guild as a copper engraver (*plaetsnyder*) in 1593, was more scholar than craftsman. In 1593, he edited the second edition of his father's atlas, *Speculum orbis terrae*. The two survivals of his further cartographic activity are a wall map of France from 1592 in twelve sheets, which

30. The five maps are a map of Germany from 1562 (see MCN, 5: 219–20); a map of the Seventeen Provinces from 1566 (see Nalis, *Van Doetecum Family*, pt. 2, 233–34, and the full-size facsimile in MCN, 1: 102–9 and facsimiles 1.1–1.5); a world map of 1571 (see Nalis, *Van Doetecum Family*, pt. 3, 35 and 52, and MCN, vol. 2, facsimile 2); a map of Italy from 1568 (see MCN, 5: 334); and a map of Friesland [from 1568].



FIG. 44.2. *TOTIVS DVCATVS BRABANTIAE . . .* BY GERARDUS DE JODE, 1565.

Size of the original: 56 × 62.5 cm. Photograph courtesy of the BNF (GE AF Pf 181 [2507 a–b]).

was compiled from the sixteen maps devoted to France in Gerardus Mercator's *Atlas* of 1585,³¹ and a wall map of Africa from 1596 in eleven sheets, which was one of a set of maps of the continents and was based on Gastaldi's 1564 map of Africa.³² Cornelis de Jode was also the author of *De quadrante geometrico*, published in German in 1593 and in Latin in 1594.

Filips Galle, who worked from his shop in Antwerp, De Witte Lelie (The White Lily), established around 1560, was one of the great masters of the Antwerp graphic tradition.³³ Together with Gerard de Jode and Hieronymus Cock, he dominated the making and selling of prints in Antwerp. Galle received his training in the art of engrav-

ing in Cock's Antwerp atelier where he came into contact with Ortelius and others. In 1560, Galle, together with

31. See Mireille Pastoureaux, "De kaarten van Frankrijk," in *Gerardus Mercator Rupelmundanus*, 316–33, esp. 328–29, and Meurer, *Fontes cartographici Orteliani*, 176.

32. Nuremberg, Staatsarchiv (Nürnberger Karten und Pläne no. 1260). See Schilder, "Cartographical Relationships," 8, and MCN, 5:40–47.

33. MCN, 2:111–22; F. W. H. Hollstein, *Dutch and Flemish Etchings, Engravings and Woodcuts, ca. 1450–1700* (Amsterdam: Menno Hertzberger, 1949–), 7:74–83; Anne Rouzet, *Dictionnaire des imprimeurs, libraires et éditeurs des XV^e et XVI^e siècles dans les limites géographiques de la Belgique actuelle* (Nieuwkoop: B. de Graaf, 1975), 67–68; and Denucé, *Oud-Nederlandsche kaartmakers*, 1:221–60.

Hendrik Goltzius, Gerardus Mercator, Johannes Sadeler, and Frans Hogenberg, traveled through France, which no doubt laid the foundation for their lifelong friendship. It was Galle who engraved the famous portrait of Ortelius that first appeared in the *Theatrum orbis terrarum* of 1579.

Galle was enrolled in the Saint Lucas Guild in 1570. The oldest known cartographic work from his publishing house is a town view of his birthplace, Haarlem, dated 1573 and designed by the painter Maarten van Heemskerck.³⁴ Eight years later, Galle published a bird's-eye (oblique) view of Antwerp.³⁵ Galle and Plantijn maintained intense business contacts. Although Galle purchased only a few maps from Plantijn's shop, he delivered a large amount of cartographic material to the Antwerp printer. Galle thus had a monopoly in Antwerp on the sale of the town atlas by Braun and Hogenberg, for Plantijn was a primary buyer (for resale) of this monumental work.³⁶ Beginning in 1583, Galle also supplied Plantijn's business with Gerardus Mercator's wall maps of the world and Europe.³⁷ The friendly relationship Galle maintained with Ortelius is clear from, among other things, the miniature edition of the *Theatrum orbis terrarum* that Galle brought onto the market, initially in cooperation with Pieter Heyns, for the general public. Toward the end of 1578, Galle published a Latin text, presumably intended as commentary on and explanation of a wall map of the Seventeen Provinces, but the text has been lost. However, Dutch and French translations, published in 1579, have been preserved, and a folio edition of what is probably Galle's map came to light recently.³⁸ Plantijn had the maps that he purchased from Galle colored by specialists, including Mynken Liefinkx, and sometimes Plantijn bought colored copies direct from these illuminators.³⁹

Before the publication of Ortelius's epoch-making atlas in 1570, several of his single-sheet maps appeared on the market. Born into an old German family, Ortelius had to provide for the welfare of his mother and two sisters after his father's early death around 1537.⁴⁰ To this end, he took up the profession of *afsetter van carten* (illuminator of maps). Ortelius was particularly interested in the study of geography and classical history.⁴¹ We can assume that his trip through France in the company of Mercator and others in 1560 was the basis for his own creative work in map production. As a result of his assiduous collection of maps, Ortelius can be regarded as one of the first cartobibliographers. He maintained ties with scholars all over Europe, and his extensive correspondence, which is partly preserved, and his *Album amicorum* provide strong evidence of these scholarly networks.⁴²

Ortelius's first independent cartographic work was a wall map of the world from 1564 in eight sheets, which was entrusted to Gerard de Jode for publication.⁴³ A year

later, a map of Egypt in two sheets appeared,⁴⁴ followed by a large wall map of Asia in 1567, in eight sheets, for

34. MCN, 2:113. Copies can be found, among other places, in Antwerp, Prentenkabinet (IV G/83); in the BNF (Rés. Ge DD 625 [58]); and in Collection K. Stopp.

35. MCN, 2:113–14. Copies of this rare image can be found, among other places, in Antwerp, Prentenkabinet (IV G/130), and in private collections.

36. Galle is mentioned as co-publisher on the last page of each of the first three sections of the *Civitates orbis terrarum* (which appeared in 1572, 1575, and 1593, respectively).

37. MCN, 2:116 and 2:119.

38. Peter van der Krogt, "De foliokaart van de Nederlanden door Filips Galle uit 1579," *Caert-Thresoor* 14 (1995): 63–67, and H. A. M. van der Heijden, *Oude kaarten der Nederlanden, 1548–1794: Historische beschouwing, kaartbeschrijving, afbeelding, commentaar/Old Maps of the Netherlands, 1548–1794: An Annotated and Illustrated Cartobibliography*, 2 vols. (Alphen aan den Rijn: Canaletto/Repro-Holland; Leuven: Universitaire Pers, 1998), 1:181–83. The map is bound in a composite atlas located in London, Westminster Abbey Library (N.7.11).

39. MCN, 2:121.

40. For a good biography of Ortelius, see, among others, Voet, "Abraham Ortelius and His World"; M. P. R. van den Broecke, "Introduction to the Life and Works of Abraham Ortelius (1527–1598)," in *Abraham Ortelius, 29–54*; Meurer, *Fontes cartographici Orteliani, 17–24*; Karrow, *Mapmakers of the Sixteenth Century*, 1–31; and MCN, 2:3–10.

41. On Ortelius's accomplishments with respect to historical maps and atlases, see Peter H. Meurer, "Ortelius as the Father of Historical Cartography," in *Abraham Ortelius*, 133–59. Ortelius's collection and study of ancient place-names are central to Peter H. Meurer, "Synonymia-Thesaurus-Nomenclator: Ortelius' Dictionaries of Ancient Geographical Names," in *Abraham Ortelius*, 331–46.

42. Ortelius's correspondence went to his nephew Jacobus Colius Ortelianus (Jacob Cool) after his death. The collection then went to the archives of the Church of Austin Friars, London; see David Cleaves, "Abraham Ortelius: Reading an Atlas through Letters," *Library Chronicle of the University of Texas at Austin* 23, no. 4 (1993): 131–43. The collection was later published; see Abraham Ortelius, *Abrahami Ortelii (geographi antverpiensis) et virorum eruditorum ad eundem et ad Jacobum Colium Ortelianum . . . Epistolae . . . (1524–1628)*, ed. Jan Hendrik Hessels, *Ecclesiae Londino-Batavae Archivum*, vol. 1 (1887; reprinted Osnabrück: Otto Zeller, 1969), and Joost Depuydt, "De brede kring van vrienden en correspondenten rond Abraham Ortelius," in *Abraham Ortelius (1527–1598): Cartograf en humanist*, by Robert W. Karrow et al. (Turnhout: Brepols, 1998), 117–40. The original letters were sold at public auction in 1955. Today, the letters are spread throughout the world in various libraries. The Koninklijke Bibliotheek in The Hague is in possession of the largest collection: 164 of the total of 376 letters. Ortelius's *Album amicorum* is preserved at Pembroke College, Cambridge. A facsimile was published: Abraham Ortelius, *Album Amicorum*, ed. Jean Puraye in collaboration with Marie Delcourt (Amsterdam: A. L. van Gendt, 1969).

43. Two copies are known: BL (Maps C.2.a.6), and Basel, Öffentliche Bibliothek der Universität (Ziegler-collection). See MCN, 2:3–58 and facsimiles 1.1–1.8.

44. Two copies are known: Basel, Öffentliche Bibliothek der Universität (Bernoulli 115), and Wolfenbüttel, Herzog August Bibliothek (K,3,3). See MCN, 2:8–9, and Meurer, "Ortelius as the Father of Historical Cartography," 137–40, in which the map of 1567 is dated.

which Gastaldi's work served as model.⁴⁵ Can it be inferred from the absence of De Jode's imprint on these two later maps that his plans for a rival atlas had become known to Ortelius and had caused an estrangement between these two cartographers? Although it is known that De Jode did not print Ortelius's later single-sheet maps, it is unknown who did. Ortelius is also known as author of the *Romani imperii imago*,⁴⁶ a map titled *Utopia*,⁴⁷ and a wall map of Spain published in 1571 in six sheets, for which he used information from the botanist Carolus Clusius.⁴⁸ These maps alone would have secured Ortelius's renown as a geographer, but he made his greatest and best-remembered contribution with the publication of his *Theatrum orbis terrarum* in 1570.

Another important Antwerp publisher of maps was Bernard van den Putte, a very capable woodcut engraver who entered the Saint Lucas Guild as a figure engraver (*figuersnyder*) in 1549.⁴⁹ Among other things, he made a woodcut copy of Mercator's world map of 1569.⁵⁰ Unfortunately, only a small number of his woodcut maps have survived (see appendix 44.3).

We know from old map inventories that the Antwerp publisher Arnold Nicolai was also very active in map production. However, only a few examples of his work have survived; for example, the famous *Caerte van Oostlant* by Cornelis Anthonisz., originally published in Amsterdam, is known by its Antwerp edition published by Nicolai in nine sheets. In 1558, Nicolai also reprinted Jacob van Deventer's woodcut map of Brabant in six sheets. However, the only known example of this map was destroyed in Breslau (now Wrocław) during World War II.⁵¹

That the publication of maps of the provinces in several sheets was popular in this period is proven by the republication in 1560 of Van Deventer's map of Zeeland by another Antwerp printer, Willem Sylvius.⁵² Sylvius, however, is best known for the publication in 1567 of the first important geographical description of the Low Countries—Lodovico Guicciardini's *Descrittione di tutti i Paesi Bassi*, which contained a map of the Netherlands by Cornelis de Hooghe, four provincial maps (of Holland, Utrecht, Flanders, and Hainault) in woodcut, and twelve views and plans of various towns.⁵³ Later published by Plantijn, Cornelis Claesz., Willem Jansz. Blaeu, and others, it was augmented with many new maps and illustrations and remained the standard work for a long time.

Joan Baptista Vrients was primarily a book merchant and printseller in Antwerp.⁵⁴ However, he also made a name for himself as a publisher of maps. The oldest known cartographic work from his publishing house is a historical topographical print depicting the siege of Antwerp in 1585.⁵⁵ There must have been a close working relationship between Vrients and the Amsterdam publisher Cornelis Claesz., who, beginning in 1590, held a dominant position in the northern Low Countries in cartography of voyages

of discovery and the art of navigation. In partnership with Vrients, Claesz. secured for himself a good market in the Catholic southern Low Countries as well. Among other things, this cooperation resulted in the sale of the renowned wall map of the world by Petrus Plancius, published by Claesz. in 1592 in nineteen sheets, and the wall map of the Seventeen Provinces in twelve sheets published by Vrients in 1602 and 1605. The first standard Dutch work on the Portuguese colonial empire, Jan Huygen van

45. A unique copy is in Basel, Öffentliche Bibliothek der Universität (Ziegler-collection, 98–99). See MCN, 2:59–84 and facsimiles 3.1–3.8.

46. MCN, 2:10, mentions six copies of this map. See also Meurer, "Ortelius as the Father of Historical Cartography," 140–42.

47. On this map, see M. P. R. van den Broecke, "De Utopia kaart van Ortelius," *Caert-Thresoor* 23 (2004): 89–93 and facsimile, and Cécile Kruythoof, "A Recent Discovery: *Utopia* by Abraham Ortelius," *Map Collector* 16 (1981): 10–14. The only known copy of the map is in a private collection.

48. A copy is in Basel, Öffentliche Bibliothek der Universität (Ziegler-collection). See MCN, 2:85–110 and facsimiles 4.1–4.6, and Nalis, *Van Doetecum Family*, pt. 2, 82–83.

49. On Van den Putte, see C. Depauw, "Enkele gegevens betreffende Bernaert vande Putte *figuersnyder*/Quelques informations sur Bernaert vande Putte, *figuersnyder* (tailleur de figures)," in *Gerard Mercator en de geografie in de Zuidelijke Nederlanden (16^{de} eeuw)/Gerard Mercator et la géographie dans les Pays-Bas méridionaux (16^e siècle)*, exhibition catalog (Antwerp: Stad Antwerpen, 1994), 65–76.

50. A single sheet has been preserved in an atlas *factice* in London, Royal Geographical Society.

51. The only known copy of a third edition of the *Caerte van Oostlant* has been preserved in Wolfenbüttel; see figure 45.10. A facsimile is in Arend W. Lang, *Historisches Seekartenwerk der Deutschen Bucht*, vol. 1 (Neumünster: Karl Wachholtz, 1969), no. 1. Facsimiles of the lost copy of the Brabant map are in Bert van 't Hoff, *De kaarten van de Nederlandsche provinciën in de zestiende eeuw door Jacob van Deventer* (The Hague: Martinus Nijhoff, 1941), pls. 17 and 18, and C. Koeman, *Gewestkaarten van de Nederlanden door Jacob van Deventer, 1536–1545: Met een picturale weergave van alle kerken en kloosters* (Alphen aan den Rijn: Stichting tot bevordering van de uitgave van de stadsplattegronden van Jacob van Deventer–Canaletto, 1994), facsimile 5. A second copy of the Brabant map, a slightly different version, is in the Royal Library of Belgium, Brussels; see the article by Matthieu Franssen, *Caert-Thresoor* (forthcoming).

52. Copperplate engraving in four sheets; a unique copy is preserved in Florence, Biblioteca Nazionale Centrale (Raccolte Lafreriane, I, 77). See Fabia Borroni Salvadori, *Carte, piante e stampe storiche delle raccolte lafreriane della Biblioteca Nazionale di Firenze* (Rome: Istituto Poligrafico e Zecca dello Stato, Libreria dello Stato, 1980), 29.

53. H. P. Deys et al., *Guicciardini Illustratus: De kaarten en prenten in Lodovico Guicciardini's Beschrijving van de Nederlanden* ('t Goy-Houten: HES & De Graaf, 2001), 28–31 (1–3 Sylvius); H. de la Fontaine Verwey, "The History of Guicciardini's Description of the Low Countries," *Quaerendo* 12 (1982): 22–51; and idem, "De geschiedenis van Guicciardini's Beschrijving der Nederlanden," in *Drukkers, liefhebbers en piraten in de zeventiende eeuw*, by H. de la Fontaine Verwey (Amsterdam: N. Israel, 1976), 9–31.

54. MCN, 2:122–45; Denucé, *Oud-Nederlandsche kaartmakers*, 2:265–78; and Rouzet, *Dictionnaire*, 241.

55. MCN, 2:123.

Linschoten's *Itinerario*, was likewise published by Claesz., although Vrients can be considered a co-publisher.

In addition to being a copublisher and copyist, Vrients was active as an engraver and independent publisher of cartographic works. Particularly worthy of note is a six-sheet wall map of Catalonia,⁵⁶ which Vrients later reduced and included in his Spanish edition of Ortelius's *Theatrum orbis terrarum* of 1602.⁵⁷ Vrients is also frequently mentioned in contemporary sources as a supplier of maps, while he, in turn, regularly acquired from Plan-tijn cartographic material by various authors (De Jode, Teixeira, Gastaldi, and Hondius).

THE AMSTERDAM MAP TRADE

The rise and new directions in cartography, especially commercial cartography, in Amsterdam at the turn of the seventeenth century can be attributed to four factors: travel for commerce and discovery, the war against Spain, geographic changes within the region, and the influence of immigrants from the southern Low Countries.⁵⁸

From the end of the sixteenth century, Dutch shipmasters, particularly from the northern Low Countries, became cargo carriers for the rest of Europe. In addition, their voyages to the East Indies—a rich source of spices and other exotic products—expanded the sphere of influence of Dutch trade. As a result of their vain attempts to find a northeastern passage to the Indies (1594–97), Dutchmen also found themselves in northern European waterways and the polar sea. These voyages of discovery awoke a lively interest in the world outside Europe on the home front. A large potential market was thus created for maps, globes, atlases, and travel books.

Another important factor in the rapid development of Amsterdam cartography was the war against Spain in the northern Low Countries. Military news maps kept the public up to date on war activities.⁵⁹ In particular, siege and battle plans were a favored source of military news and sold well.⁶⁰ In the eighteenth and nineteenth centuries, collecting prints and assembling a historical atlas was a widely pursued pastime among well-to-do citizens.⁶¹ News maps played an important role in disseminating information throughout Europe. The combination of business sense and artistic sensibility that existed in Amsterdam guaranteed a high-quality product, while at the same time sales were assured by the print, map, and book industry's outstanding distribution system. Among the interested, literate civilians living in the dangerous war conditions of the United Provinces, prints, maps, and news bulletins were most welcome. As one would expect, inhabitants of Amsterdam were the best informed about the state of affairs, which often meant the state of war. In the United Provinces, printsellers found that The Hague and nearby Delft offered the liveliest market for their publica-

tions. In early seventeenth-century Amsterdam, Claes Jansz. Visscher was the most productive producer and merchant of this genre. In addition to the manuscript maps and plans of fortresses, copperplate prints, often in the shape of broad sheets with text, recorded military operations in the sixteenth, seventeenth, and eighteenth centuries. For example, Hans Liefcrinck, born in Antwerp, was one of the many Flemish engravers who immigrated to the Northern Provinces because of religious persecution. An important manuscript map by Liefcrinck represents the topography around Leiden during the siege of the town by the Spanish army in 1574. This drawing was the model for the engraving of the siege of Leiden depicted in Georg Braun and Frans Hogenberg's *Civitates orbis terrarum*.⁶² For the period of the Eighty Years War, we know of approximately four hundred engravings by Hogenberg.⁶³

One of the best-known artists of the other unhappy events of war in the Low Countries was Balthasar Florisz. van Berckenrode, who was also a land surveyor and known for his cartographic work. In addition to undertaking their warfare activities, surveyors were employed as war correspondents during army campaigns and sieges of Dutch fortified towns temporarily occupied by Spanish troops. Many theaters of war were depicted as ground

56. MCN, 2:125–29. A copy is in the BNF (Ge DD 5896).

57. M. P. R. van den Broecke, *Ortelius Atlas Maps: An Illustrated Guide* ('t Goy-Houten: HES, 1996), 74.

58. Günter Schilder, "Ghesneden ende ghedruckt inde Kalverstraet: De Amsterdamsche kaarten- en atlassenuitgeverij tot in de negentiende eeuw, een overzicht," in *Gesneden en gedrukt in de Kalverstraat: De kaarten- en atlassendrukkerij in Amsterdam tot in de 19^e eeuw*, ed. Paul van den Brink and Jan W. H. Werner (Utrecht: HES, 1989), 11–20.

59. Frederik Muller, *De Nederlandsche geschiedenis in platen*, 4 vols. (Amsterdam: F. Muller, 1863–82); reprinted as *Beredeneerde beschrijving van Nederlandsche historieplaten, zinneprenten en historische kaarten*, 4 vols. in 3 (Amsterdam: N. Israel, 1970).

60. C. Koeman, "Krijgsgeschiedkundige kaarten," *Armamentaria* 8 (1973): 27–42; reprinted in C. Koeman, *Miscellanea Cartographica: Contributions to the History of Cartography*, ed. Günter Schilder and Peter van der Krogt (Utrecht: HES, 1988), 221–42. This is demonstrated by the list of prints collected by Frederik Muller. This nineteenth-century antiquarian bookseller, who made a life-long study of the history of Dutch book and print production, arrived at the conclusion that "the study of history by collecting prints, maps, portraits, and their incorporation in a so-called *Historical Atlas* is an intellectual activity that originated in the Netherlands; or better, which had to originate in the Netherlands, due to the special circumstances"; see Muller, *De Nederlandsche geschiedenis*, 1:XIII. These circumstances were a vast literate middle class, a highly developed book trade and printing industry, and numerous excellent painters, draftsmen, and engravers.

61. This is reflected in the catalogs of book auctions, a topic that will be discussed in more detail in volume 4 of this *History*.

62. Manuscript map in Leiden, Universiteitsbibliotheek, 34 × 46 cm.

63. Karel Kinds, *Kroniek van de opstand in de Lage Landen, 1555–1609: Actuele oorlogsverslaggeving uit de zestiende eeuw met 228 gravures van Frans Hogenberg*, 2 vols. ([Wenum Wiesel]: Uitgeverij ALNU, 1999), and Muller, *De Nederlandsche geschiedenis*, 1:39–60.

plans with pictorial representations of battles.⁶⁴ During a campaign, the camp of the commander was measured and sketched every day, as is shown in Balthasar Florisz.'s field book.⁶⁵ Commemorative prints made after an event were another important product in the Dutch book and print trade. About 450 manuscript topographical maps and about 850 manuscript plans of fortified towns from the sixteenth, seventeenth, and eighteenth century are kept in the collections of the Nationaal Archief. In most cases, their survey was ordered by the Raad van State (States Council) and executed by one or more of the approximately eight hundred Dutch military engineers.⁶⁶ Many of the maps that resulted from the war are discussed in chapter 43 in this volume, especially pp. 1271–90.

A third stimulus for map production in Amsterdam was large-scale domestic geographical change. The expansion of towns, the building of numerous new fortifications, the expansion of the infrastructure, and the loss and reclamation of land dramatically changed the landscape of the northern Low Countries. Specifically, changes in Holland north of the IJ—due to the damming of portions of the sea and to land reclamation—were recorded cartographically. These developments led to the establishment of *waterschap* cartography, a phenomenon specific to the cartography of the Low Countries (see chapter 43, pp. 1263–68). The results of these efforts were made known to the public by the commercial cartography in Amsterdam.

Cartographic production in the northern Low Countries was further stimulated by the Spanish conquests of economic centers in the Southern Provinces. Ghent and Bruges fell into Spanish hands in 1584, followed by Brussels and Antwerp in 1585. An exodus of southern Protestants was the result, and well-educated engravers, publishers, and printers—such as Petrus Bertius and Pieter and Abraham Goos—chose Amsterdam as a new center for the pursuit of their trade.⁶⁷ This migration led to a golden age of commercial cartography in the northern Low Countries in which Amsterdam played a leading role during the seventeenth century.

From the beginning of the seventeenth century, there was an increase in the number of individuals and organizations making use of cartographic material. In addition to academics and seafarers, administrators, businessmen, and citizens interested in geography began to see the value of maps as sources of information. In order to meet the growing demand for maps, printing businesses developed in Amsterdam that specialized in maps and prints. As a result of the successful collaboration of capable engravers, such as the Van Langren family, the Van Doetecum family, Pieter van den Keere (Petrus Kaerius), Josua van den Ende, Hessel Gerritsz., Claes Jansz. Visscher, and Abraham Goos, with renowned printers, such as Cornelis Claesz., Jodocus Hondius, and Willem Jansz. Blaeu, work was produced that contributed to Amsterdam's worldwide

reputation in map production and trade. Amsterdam's cartographic output was characterized by a surprising richness and variety: single maps in folio format, large atlases, voluminous folios of travel writing, globes of widely varying dimensions, and multisheet composite wall maps.

Beginnings in the Sixteenth Century

Apart from a little local cartography in the Northern Provinces, there was no cartographic tradition until about 1580. Sixteenth-century map production consisted almost exclusively of manuscript maps produced by surveyors for judicial purposes and to represent property in map books. These were large-scale maps depicting relatively small areas. The military mapping of larger land areas, such as that of Jacob van Deventer and Christiaan Sgrooten, was carried out from the southern Low Countries at the behest of the Spanish authorities. With the exception of a few regional maps and town plans, there were hardly any printed maps intended for sale.⁶⁸

Only a very few of the printed maps published in the Northern Provinces in the first decades of the sixteenth century have survived. The oldest known map printed in Holland is the Dutch world map by the learned Gouda humanist Cornelis Aurelius published in 1514.⁶⁹ Four versions are known, representing four different editions. The oldest one, a woodcut of 1514, was found in a copy of the *Chromycke van Hollandt Zeelant ende Vriesland*, printed by Jan Seversz. in Leiden in 1517. In the 1960s, map fragments from a sixteenth-century book binding, showing large parts of the present-day provinces of Friesland, Drente, Overijssel, and Gelderland, were found in the Universiteitsbibliotheek Leiden, dating from approximately 1524 (see fig. 43.4).

Two other examples of Dutch map publishing in the Northern Provinces date from the early 1540s. Both are by Cornelis Anthonisz., who contributed some important

64. For example, famous victories were the taking of the town of Breda in 1625, drawn by the engraver Jacques Callot, and the siege of 's-Hertogenbosch in 1629, represented in various editions, such as that by Balthasar Florisz. van Berckenrode. Several of these drawings were engraved and published by Claes Jansz. Visscher and sold as wall maps or incorporated into books.

65. Y. Marijke Donkersloot–De Vrij, “De veldtocht van Frederik Hendrik in 1639,” *Spieghel Historiaal* 6 (1971): 496–502.

66. These are listed in F. W. J. Scholten, *Militaire topografische kaarten en stadsplattegronden van Nederland, 1579–1795* (Alphen aan den Rijn: Canaletto, 1989), 168–95.

67. For more on this immigration, see J. G. C. A. Briels, *Zuid-Nederlandse immigratie, 1572–1630* (Haarlem: Fibula-Van Dishoeck, 1978).

68. For a list of maps printed in the Northern Provinces before 1584, see GN, 86.

69. Shirley, *Mapping of the World*, 42–43 (no. 37), and C. P. Burger, “De oudste Hollandsche wereldkaart, een werk van Cornelius Aurelius,” *Het Boek* 5 (1916): 33–66.

works to the field of cartography and also produced a great number of noncartographic woodcuts, paintings, drawings, and engravings.⁷⁰ His famous town view of Amsterdam in woodcut, dated 1544, constituted a milestone in Dutch cartographic development, and in 1543 Anthonisz. published his well-known *Caerte van Oostlant*, for which an imperial privilege was granted. The publication of Anthonisz.'s works was followed by a period of nearly thirty years without significant cartographic production in the Northern Provinces.

A new epoch was initiated with a wall map of Holland, Utrecht, and the surrounding regions in six sheets published in The Hague by Nicolaas Liefincx in 1569. Unfortunately, the only known example was destroyed in the former city library at Breslau (Wrocław) during World War II.⁷¹ The author of the map is unknown, but we can conclude, with the aid of a preserved photograph of this map, that the geographical content improved on both Jacob van Deventer's and Christian Sgrooten's maps. It was engraved by brothers Joannes and Lucas van Doetecum, who, after a successful career in Antwerp at the publishing houses of Hieronymus Cock and Gerard de Jode, were active in the Northern Provinces for two decades. Around 1560, both Joannes and Lucas appear to have moved to Antwerp, despite the fact that, except for their work, there is no documented proof of their stay. At the end of the 1570s, the brothers returned to Deventer, where a short time later Lucas seems to have passed away. The Reformed Joannes van Doetecum was forced to flee when Deventer fell to the Spanish in 1587. He established himself in Haarlem, where he was aided in his printing and publishing business by his son Baptista. Beginning in the 1590s, their engraving capacity increased with the addition of Baptista's brother Joannes van Doetecum Jr. The Van Doetecums did a lot of work for Cornelis Claesz., who essentially held a monopoly on the publication of works in the area of cartography, navigation, and voyages of discovery at the end of the sixteenth century. Joannes van Doetecum returned to Deventer in 1600, while his sons remained in Haarlem. Baptista is believed to have settled—in 1606, after having worked several years in Amsterdam as well—in the city on the IJssel, where he died in 1611. Records of Joannes van Doetecum Jr. can be found in the Rotterdam archives beginning in 1603. Inventories of his property from 1608 and 1626 yield wonderful insight into the household and shop of the engraver.⁷² Joannes van Doetecum Jr. died in 1630, marking an end to a seventy-year tradition in engraving. The Van Doetecums had a decisive influence on Dutch cartography from 1560 to 1630, longer than any other engraving or publishing family.⁷³

The engraving and etching done by the Van Doetecum family became famous, and their style and technique were highly esteemed by their contemporaries (fig. 44.3). According to the German publisher and geographer

Matthias Quad “von Kinckelbach,” “About the year 1570, two brothers, Joannes and Lucas van Deutecum, invented a completely new and ingenious manner of etching, whereby they could, and still can, etch in copper pictures and maps with all the writing and lettering in them so neatly and smoothly, and with such gentle graduations, that it was long considered by many connoisseurs to be no etching, but pure engraving. The art remained a secret with the two of them until Lucas died; his brother Joannes after some years revealed it to his two sons Baptista and Joannes, who practice it now in Haarlem and produce many excellent plates with little work.”⁷⁴

The single-sheet maps produced during the stay of the Van Doetecums in Deventer and Haarlem are now very rare. The engraver of most of these was Baptista van Doetecum. His father, Joannes, is best known as the publisher of his son's works.⁷⁵ A large map of the Seventeen Provinces from 1594 in nine sheets (which has survived only in three sheets) also came from Joannes van Doetecum's press in Haarlem.⁷⁶ The copperplates of this wall map were republished by Claes Jansz. Visscher in 1636, and it is this republished version that is depicted in Jan

70. On Cornelis Anthonisz., see F. J. Dubiez, *Cornelis Anthoniszoon van Amsterdam: Zijn leven en werken, ca. 1507–1553* (Amsterdam: H. D. Pfann, 1969); Karrow, *Mapmakers of the Sixteenth Century*, 42–48; and Arend W. Lang, *Die “Caerte van Oostlant” des Cornelis Anthonisz., 1543: Die älteste gedruckte Seekarte Nordeuropas und ihre Segelanweisung* (Hamburg: Ernst Kabel, 1986).

71. Nalis, *Van Doetecum Family*, pt. 2, 272–73; MCN, 1:5–7; Walther Ruge, “Aelteres kartographisches Material in deutschen Bibliotheken,” *Nachrichten von der Königlichen Gesellschaft der Wissenschaften zu Göttingen, philologisch-historische Klasse*, 1904, 1–69; 1906, 1–39; 1911, 35–166; and 1916, Beiheft, 1–128, esp. 50, no. 73 (reprinted in *Acta Cartographica* 17 (1973): 105–472, esp. 394); F. C. Wieder, “Merkwaardigheden der oude cartographie van Noord-Holland,” *Tijdschrift van het Koninklijk Nederlandsch Aardrijkskundig Genootschap* 35 (1918): 479–523 and 678–706, esp. 496–97; and C. Koeman, *Geschiedenis van de kartografie van Nederland: Zes eeuwen land- en zeekaarten en stadsplattegronden* (Alphen aan den Rijn: Canaletto, 1983), 107.

72. For an annotated transcription of the 1608 report of the inventory and stock of the art printshop, see MCN, 1:32–35. The copperplates and maps in the 1626 inventory are mentioned on p. 37.

73. For an overview of the life and work of the Van Doetecum family, see Nalis, *Van Doetecum Family*, and MCN, 1:3–37.

74. Matthias Quad, *Teutscher Nation Herligkeit: Ein aussführliche Beschreibung des gegenwertigen, alten, und ubralten Standts Germania (Cölln am Rhein: Verlegung Wilhelm Lutzenkirchens, 1609)*, 431. See also Peter H. Meurer, *Atlantes Colonisenses: Die Kölner Schule der Atlaskartographie, 1570–1610* (Bad Neustadt a.d. Saale: Pfaehler, 1988), 197–235.

75. Nalis, *Van Doetecum Family*, pt. 4, 10–11 (Gelderland, 1584); pt. 4, 16–17 (Holland, 1585); pt. 4, 32–33 (Seventeen Provinces, 1588); pt. 4, 40–42 (Zeeland, 1589); and pt. 4, 46–47 (Flanders, ca. 1590), and MCN, 1:8–13.

76. One sheet is in Amsterdam, Universiteitsbibliotheek; two sheets in a private collection. See Nalis, *Van Doetecum Family*, pt. 4, 128–33, and MCN, 1:144–46 and facsimiles 4.1–4.3.

Vermeer's famous *Art of Painting*.⁷⁷ Joannes, working for the Plantijn house in Leiden, also made important contributions to Dutch maritime mapping.⁷⁸

In addition to the Van Doetecum family, from 1580 the Van Langrens were a well-known family of engravers.⁷⁹ They were especially famous as globemakers but were also active as map engravers. Arnold Floris and Hendrik Floris van Langren, in particular, concentrated on map engraving, and their best-known works are the charts included in Van Linschoten's *Itinerario*; their other cartographic material is extremely rare. Results of the joint effort of the brothers include the small world map in two hemispheres from 1594 published by Vrients, and another rare map that delineates the provinces of Flanders and Zeeland. Hendrik Floris van Langren is also known as the engraver of a map of Holland (1594), undated maps of Germany, a map of the Seventeen Provinces in the form of a lion (Leo Belgicus), and a map of Asia, which was a reduced imitation of Plancius's large map of Asia. After 1598, he also engraved a large wall map of the world bearing the portrait of his patron Lenert Rans and printed in two thousand copies.⁸⁰ After Hendrik died, the copperplates still in existence were sold to the public by his heirs in 1650.

The business dealings of the Van Doetecums in Deventer and Haarlem and of the Van Langrens in Amsterdam can, with some reservations, be considered the first commercial cartographic enterprises in the northern Low Countries. However, it was not long before they had to recognize the superiority of the engravers and publishers from Flanders, who settled in Amsterdam in the final decade of the sixteenth century.

Flemish Map Engravers and Publishers in Amsterdam

The arrival of thousands of Protestant emigrants from the southern Low Countries signified an enormous economic and cultural boost for the Northern Provinces. One of the first who occupied himself with maps was Cornelis Claesz., who would become the most important cartographic publisher in the Northern Provinces at the end of the sixteenth century and the beginning of the seventeenth.⁸¹ Several well-known engravers worked for him, including members of the Van Doetecum and Van Langren families. He worked as the publisher of the works drawn by Plancius, a Calvinist minister who was the spiritual focal point of the Dutch expansion to all corners of the earth. The great importance of Claesz. for geography and cartography is also expressed in his distinguished publisher's catalog, *Const ende caert-register* (1609),⁸² which provides intriguing information about a large portion of the geographic and cartographic material available in Amsterdam at the time. Claesz. worked not only as a publisher but also as a co-producer with others. The *Const ende caert-register* mentions maps and atlases that he produced

in cooperation with, among others, Jodocus Hondius, Pieter van den Keere, Lucas Jansz. Waghenauer, Johannes Janssonius Sr., and Barent Langenes. In addition, his ties to the southern Low Countries were still in existence, as evidenced by the works he produced in cooperation with the Antwerp publisher Joan Baptista Vrients.

On 17 April 1592, the States General granted Claesz. the right to publish his famous wall map of the world in nineteen sheets on a cylindrical projection for a period of twelve years. The content of this map was derived from Mercator's world map of 1569 supplemented with important additions, including the results of Spanish and Portuguese voyages of discovery that Plancius had managed to obtain. Claesz. and Vrients cooperated to sell it in the southern Netherlands. There is only one known copy (with Vrients's address).⁸³ The map was engraved by Joannes van Doetecum Sr. in partnership with his son Baptista, and the Van Doetecums were also responsible for financing a portion of the map. They were in possession of a quarter of the copperplates, without which Claesz. would not have been able to published it.

77. In Vienna, Kunsthistorisches Museum. See James A. Welu, "The Map in Vermeer's *Art of Painting*," *Imago Mundi* 30 (1978): 9–30, and MCN, 1:146–65 and facsimiles 5.1–5.14. Simultaneous with the appearance of the large wall map of 1594, a reduction of this work appeared in two sheets known only through a later edition from 1616 by François van den Hoeye; see MCN, 1:162–65 and facsimiles 6.1–6.4.

78. See chapter 45 in this volume. The Plantijn shop was later run by Plantijn's son-in-law François van Raphelengien.

79. For a biographical sketch of the Van Langren family, see GN, 87–91; a list of the maps engraved by Arnold and Hendrik is on p. 129.

80. MCN, 3:28–31. A copy was in the former Stadtbibliothek, Breslau (Rolle 31), but is missing since 1945. See F. C. Wieder, "Nederlandsche kaartenmusea in Duitschland," *Tijdschrift van het Koninklijk Nederlandsch Aardrijkskundig Genootschap* 36 (1919): 1–35, esp. 23–24. A partial facsimile is in F. C. Wieder, ed., *Monumenta Cartographica: Reproductions of Unique and Rare Maps, Plans and Views in the Actual Size of the Originals*, 5 vols. (The Hague: Martinus Nijhoff, 1925–33), 2:41–42, 55, and pls. 39, 40 and 40a, and Shirley, *Mapping of the World*, 234–36 (no. 218).

81. On Cornelis Claesz., see E. W. Moes and C. P. Burger, *De Amsterdamsche boekdrukkers en uitgevers in de zestiende eeuw*, 4 vols. (Amsterdam, 1900–1915; reprinted Utrecht: HES, 1988), 2:27–209 and 4:394–445; C. P. Burger, "De Amsterdamsche uitgever Cornelis Claesz (1578–1609)," *De Gulden Passer* 9 (1931): 59–68; Isabella Henrietta van Eeghen, *De Amsterdamse boekhandel, 1680–1725*, 5 vols. (Amsterdam: Scheltema & Holkema, 1960–78), vol. 1; B. van Selm, *Een menighe treffelijcke Boecken: Nederlandse boekhandels-catalogi in het begin van de zeventiende eeuw* (Utrecht: HES, 1987), 174–319; and MCN, 5:61–75 and esp. vol. 7.

82. Copy in Wolfenbüttel, Herzog August Bibliothek (Bc Sam. Bd. 10 [2]). See MCN, 7:23 and ill. 1.2g; Van Selm, *Een menighe treffelijcke Boecken*, 217–21; and the treatment of Claesz. and his catalog in chapter 45 in this volume.

83. Valencia, Collegio del Corpus Cristi. See Nalis, *Van Doetecum Family*, pt. 4, 93–107; MCN, 1:14–17 and 3:22–28; and Shirley, *Mapping of the World*, 199–202 (no. 183). A full-size reproduction is in Wieder, *Monumenta Cartographica*, 2:28–36 and pls. 26–38.



FIG. 44.4. MAP OF SOUTHERN SOUTH AMERICA, PUBLISHED BY CORNELIS CLAESZ., CA. 1592.

Size of the original: 38.5 × 55 cm. Photograph courtesy of the Universiteitsbibliotheek Amsterdam (O.K. 125).

Claesz. published a series of smaller charts also based on Portuguese material and drawn by Plancius, although Plancius devoted more attention to the inland regions. Taken alongside the great map of the world, these detailed charts provide a virtually complete summary of the cartography of the known world and form the oldest series of printed Dutch marine charts showing seas and coastlines outside Europe (fig. 44.4). All of these charts were engraved by members of the Van Doetecum family.⁸⁴

The *Itinerario voyage ofte schipvaert* (1596) of Jan Huygen van Linschoten was the source of important information concerning the geography of the coasts of Asia and Africa at the end of the sixteenth century. Claesz. spared no expense in this publication and included a large number of noncartographic engravings by the Van Doetecums, which also appeared separately in 1604 with their own title page.⁸⁵ There were also six maps: one world map of 1594 by Plancius, engraved by Joannes van Doetecum Jr.,⁸⁶ and five engraved by Arnold Floris van Langren and his brother Hendrik Floris van Langren. Together these

maps provided a complete picture of the route from the northwest coast of Africa to China and Japan.

In the following years, Claesz. published numerous journals covering a variety of major Dutch voyages of discovery, in addition to a number of special route maps similar to the general maps showing the routes taken by Cornelis de Houtman (1595–97), Jacob Cornelisz. van Neck (1598–1600), Willem Barents (1596), and Olivier van Noort (in four sheets, republished by Visscher in 1650).⁸⁷ In 1602, Claesz.'s publication of a map of western Africa

84. Nalis, *Van Doetecum Family*, pt. 4, 110–23, and MCN, 7:110–32 and facsimiles 8–14.

85. Nalis, *Van Doetecum Family*, pt. 4, 144–77. The title of the 1604 edition is *Icones, habitus gestusque Indorum ac Lvsitanorum per Indiam viventium*. See E. van den Boogaart, *Het verheven en verdorven Azië: Woord en beeld in het Itinerario en de Icones van Jan Huygen van Linschoten* (Amsterdam: Het Spinhuis, 2000).

86. Nalis, *Van Doetecum Family*, pt. 4, 134–35, and MCN, 7:204–28 and facsimiles 18–24.

87. All reproduced full-size in MCN, vol. 7.

coincided with his publication of the earliest and most detailed description of the Gulf of Guinea, written by Pieter de Marees.

Two important maps of the northern regions also deserve mention. Claesz. had published Cornelis Doedsz.'s *Pascaerte inhoudende dat ghebeele oostersche en noortsche vaerwater* in 1589.⁸⁸ This work was of great importance for navigation in the Baltic and the White Seas. The chart by Mouris Willemsz., published by Claesz. before 1608, depicted the Russian coastline in even greater detail. Claesz., whose international reputation was based on the publication of books on travel, maps, atlases, and books on the art of navigation, was the first publisher in the north to print Lodovico Guicciardini's work (1609).⁸⁹ He paid particular attention to the provision of new maps of the provinces, assisted by engravers Joannes van Doetecum Jr., Jan Pietersz. Saenredam, and Pieter van den Keere. He also issued the maps of the various provinces from the 1609 Guicciardini edition separately, for the maps were bordered on three sides by a descriptive text in movable type.

Petrus Plancius fled to the north in 1585 and was accepted as a pastor in Amsterdam that same year.⁹⁰ In addition to engaging in his theological activities, Plancius found himself more and more occupied with astronomy and geography. He was thus able to contribute new constellations to the celestial globe of Jacob Floris van Langren in 1589. He also made five maps for the Dutch Bible of Laurens Jacobsz. in 1590,⁹¹ and, in addition, made a name for himself with his 1592 wall map of the world.

Plancius subsequently concentrated primarily on maritime maps, providing Dutch ships with the nautical charts and instruments necessary for travel to the East Indies. These charts were based on Portuguese sources. Shortly after the establishment of the Dutch United East India Company in 1602, Plancius was appointed cartographer of the company. He resigned six years later in order to concentrate on theology. After about 1605, Plancius's name rarely resurfaced in the cartographic domain, except for his publication of a large world map in two hemispheres in 1607.

As in the case of so many other famous cartographers, engravers, and publishers who had a decisive influence on the development of cartography in Amsterdam, at the end of the sixteenth century Jodocus Hondius and his future brother-in-law Pieter van den Keere also emigrated from the southern part of the Low Countries.⁹² They belonged to the group of emigrants, mainly from Ghent, who first settled in London. For talented and industrious individuals like Hondius and Van den Keere, there were many opportunities to develop skills in London, where the study of geography, the art of navigation, mathematics, astronomy, and cartography was flourishing. Hondius, in particular, made valuable contacts with the most prominent English scholars and explorers, such as Thomas Blunde-

ville, Thomas Cavendish, John Davis, Francis Drake, Richard Hakluyt, John Speed, and Edward Wright.

Three charts engraved for *The Mariners Mirror* of 1588, the English imitation of Waghenauer's *Spieghel der zeevaerdt*, date from the London stay of Hondius and Van den Keere, and also a map of America of 1589, which is known only from a later edition published by Jean IV Leclerc in 1602. An important starting point for the development of characteristic Dutch decorative borders is found in the small maps of England, France, and the Low Countries that Hondius published in 1590 and 1591 and in a set of five small circular maps (1589–90) of the world, Europe, France, England, and the Seventeen Provinces (Leo Belgicus) (fig. 44.5).⁹³ In 1592, a map of England and Ireland drawn in his own hand was published in two sheets.⁹⁴ The height of Hondius's London activity was the engraving, by 1592 or early 1593, of a pair of English globes drawn by Emery Molyneux on which the results of English expeditions and discoveries were recorded.⁹⁵

In 1593, Jodocus Hondius moved with his family from London to Amsterdam. There, he came into contact with other emigrants from the Southern Provinces who played decisive roles in the fields of geography and cartography, such as Petrus Plancius and Petrus Bertius. Hondius established his business in the Kalverstraat, near the town hall, and eagerly set to work. He possessed an ideal com-

88. The only known copy is in the BL; it forms part of Waghenauer's *Den nieuwen Spieghel der Zeevaert* . . . (Maps C.8.b.6). The chart was published a second time by Claes Jansz. Visscher in 1610. See MCN, 1:16; Günter Schilder, "De Noordhollandse cartografenschool," in *Lucas Jansz. Waghenauer van Enckhuysen: De maritieme cartografie in de Nederlanden in de zestiende en het begin van de zeventiende eeuw* (Enkhuizen: Vereniging "Vrienden van het Zuiderzeemuseum," 1984), 47–72, esp. 50–52; and MCN, 7:100–101 and facsimile 6.

89. Deys et al., *Guicciardini Illustratus*, 50–53 (9 Claesz).

90. Johannes Keuning, *Petrus Plancius, theoloog en geograaf, 1552–1622* (Amsterdam: Van Kampen, 1946).

91. On the Van Langren globe, see GN, 421–22 (LAN I). On the maps for the Dutch Bible, see Nalis, *Van Doetecum Family*, pt. 4, 50–55, and Wilco C. Poortman and Joost Augusteijn, *Kaarten in Bijbels (16^e–18^e eeuw)* (Zoetermeer: Boekencentrum, 1995), 100–110.

92. On Hondius, see Günter Schilder, *The World Map of 1669 by Jodocus Hondius the Elder & Nicolaas Visscher* (Amsterdam: Nico Israel, 1978), 5–9. On Van den Keere, see Günter Schilder and James A. Welu, *The World Map of 1611 by Pieter van den Keere* (Amsterdam: Nico Israel, 1980), and Günter Schilder, *Pieter van den Keere, Nova et accurata geographica descriptio inferioris Germaniae* (Amsterdam, 1607) (Alphen aan den Rijn: Canaletto, 1993).

93. Günter Schilder, "Jodocus Hondius, Creator of the Decorative Map Border," *Map Collector* 32 (1985): 40–43, and idem, "An Unrecorded Set of Thematic Maps by Hondius," *Map Collector* 59 (1992): 44–47. A list of Hondius's work before 1600 can be found in GN, 139, to which must be added the set of five small circular maps.

94. Rodney W. Shirley, *Early Printed Maps of the British Isles, 1477–1650*, rev. ed. (East Grinstead: Antique Atlas, 1991), xv (no. 164) and pl. 36.

95. Figure 57.11 and GN, 107–12 and 460–63 (HON M-I/II). On Hondius's work in London, see also p. 1705 and figure 57.10.



FIG. 44.5. CIRCULAR LEO BELGICVS MAP OF THE SEVENTEEN PROVINCES ENGRAVED BY JODOCUS HONDIUS IN LONDON, LATE 1590S. Diameter of the map: 8.3 cm. Photograph courtesy of the Biblioteca Nacional, Madrid (Estampas y Bellas Artes, E R 2240).

bination of personal qualities: a scientific curiosity; abilities in mathematics, geography, and astronomy; artistic skills; and business acumen. Hondius's cartographic legacy is characterized by its significant diversity: many and various wall maps, atlases, and globes left his workshop.

Hondius's first cartographic publications in Amsterdam included a small map and a wall map in four sheets, both of the Seventeen Provinces (1593), and the famous Drake "Broadside" map of the world in two hemispheres, which depicted the routes sailed by Sir Francis Drake (1577–80) and Thomas Cavendish (1586–88) on their voyages around the world.⁹⁶ Together with his brother-in-law Van den Keere, Hondius engraved a large wall map of Europe in fifteen sheets, which went on the market in 1595.⁹⁷

Hondius, in close cooperation with the publisher Cornelis Claesz. and with the assistance of Van den Keere, published important works such as Willem Barents's *Nieuwe beschryvinghe ende caertboeck vande Midlantsche Zee* of 1595, which was the earliest printed sea atlas of the Mediterranean, and the *Caert-thresoor*, a small world atlas with approximately 160 maps. He also produced a large number of individual maps at his own expense, such as his large maps of the world (1595/96) and the four continents (1598) on the Mercator projection.⁹⁸ He borrowed the mathematical basis for the construction

of these maps from the not yet published manuscript of Edward Wright.⁹⁹ A world map of folio size on the same projection is known in the literature as the Christian Knight map.¹⁰⁰ Other maps composed of several sheets were published in the same period. In 1599, Hondius engraved a map of the province of Utrecht in two sheets for his friend Cornelis Anthonisz. Hornhiovius. This map has survived only in a later edition published by Clement de Jonghe. A map of France in four sheets appeared in 1600 and was republished in 1650 by Claes Jansz. Visscher with the addition of decorative borders printed on two sheets.¹⁰¹ The publication of the four-sheet map of the Seventeen Provinces in 1602 was a major event in Dutch cartography.¹⁰² Among the smaller maps of folio size were a map of the Guiana region from about 1599,¹⁰³ a small map of France from 1600, a series of the continents published by Leclerc in 1602, maps of Germany and Holland dated 1607,¹⁰⁴ and the *Leo Belgicus* map of 1611.¹⁰⁵

96. Van der Heijden, *Oude kaarten der Nederlanden*, 1:88–89 and 232–38. The wall map is known only from the second edition of 1630 by Henricus Hondius; see *MCN*, 1:48–49. On the Drake broadside, see figure 10.7 and Shirley, *Mapping of the World*, 208–9 (no. 188).

97. Description and facsimile in C. Koeman, *Jodocus Hondius' Wall-Map of Europe, 1595: An Introduction to the Nova totius Europae descriptio . . . (Amsterdam) 1595* (Amsterdam: N. Israel, 1967). In 1975, Schilder located another copy (without text) in Nürnberg, Staatsarchiv; see *MCN*, 5:55, n. 91.

98. The only known example of Hondius's wall map of the world in eight sheets is in Dresden, Sächsisches Hauptstaatsarchiv (XII/Fach VI/No. 21). There is an incomplete copy of the wall map of Europe, consisting of three of the four sheets, in Rotterdam, Maritiem Museum. The four-sheet wall map of Africa, also in the Maritiem Museum, is also missing one sheet. Only two top sheets of the four-sheet map of America have survived (in New York, New York Historical Society). No trace of the continental map of Asia has been found. See *MCN*, 5:52–61.

99. Edward Wright, *Certain Errors in Navigation . . .* (London: Valentine Sims, 1599). See *MCN*, 5:50–53. On Wright, see E. J. S. Parsons and W. F. Morris, "Edward Wright and His Work," *Imago Mundi* 3 (1939): 61–71.

100. Peter Barber, "The Christian Knight, the Most Christian King and the Rulers of Darkness," *Map Collector* 52 (1990): 8–13, and Shirley, *Mapping of the World*, 218–19 (no. 198).

101. James A. Welu, "The Sources and Development of Cartographic Ornamentation in the Netherlands," in *Art and Cartography: Six Historical Essays*, ed. David Woodward (Chicago: University of Chicago Press, 1987), 147–73, esp. 167–73.

102. Van der Heijden, *Oude kaarten der Nederlanden*, 1:277–80.

103. A facsimile is in *Links with the Past: The History of the Cartography of Suriname, 1500–1971*, ed. C. Koeman (Amsterdam: Theatrum Orbis Terrarum, 1973), pl. 1.

104. *MCN*, 6:179–82, 306–7, and pls. 27 and 60, and Peter H. Meurer, *Corpus der älteren Germania-Karten: Ein annotierter Katalog der gedruckten Gesamtkarten des deutschen Raumes von den Anfängen bis um 1650*, text and portfolio (Alphen aan den Rijn: Canaletto, 2001), 258–60, pl. 3-9¹⁻⁴ (Heinrich Zell/Gerard de Jode); 279–82, pl. 4-1¹⁻⁶ (Christophorus Pyramius); and 339–48, pls. 6-1, 6-2, and 6-3¹⁻⁹ (Christiaan Sgrooten).

105. See plate 19; Van der Heijden, *Oude kaarten der Nederlanden*, 1:322; H. A. M. van der Heijden, *Leo Belgicus: An Illustrated and An-*

Hondius's cooperation with Cornelis Claesz., who purchased the copperplates for Mercator's atlases in 1604, marked a turning point in his career, and the new editions of these atlases in 1605 and 1606 made an important contribution to Amsterdam's world reputation in cartography. In spite of his activity in Amsterdam, Hondius maintained ties with his old friends in England. It was through these contacts that he was engaged to engrave the copperplates for John Speed's *Theatre of the Empire of Great Britaine* (London, 1611).¹⁰⁶ Finally, Hondius's work included two larger wall maps of the world.

After Hondius's death in February 1612, the business was carried on by his widow, Colette van den Keere, and his sons Jodocus Jr. and Henricus. The Hondius brothers played a more important role in atlas production than in the publication of single-sheet maps. Of particular note among Jodocus's works was a new and remarkable map of the Baltic territory of Adriaen Veen of 1613, a number of now rare single sheets of different European countries published in 1617,¹⁰⁷ and a set of maps of the continents in folio published in 1618/19 and 1623.¹⁰⁸ He was also engaged in the publication of multisheet maps, such as a map of Europe in six sheets (after 1613), and in the republication of his father's large world map in two hemispheres (1618).¹⁰⁹

Jodocus Jr.'s brother Henricus was content with republishing a series of maps from old copperplates, among them his father's wall map of the world on the Mercator projection, which he printed in 1627 and 1634 together with Melchior II Tavernier;¹¹⁰ the set of Blaeu's maps of the continents in six sheets, which he printed in 1624 and 1626;¹¹¹ and Rumoldus Mercator's famous twelve-sheet map of Germany, originally published in 1590, which he reprinted in 1632.¹¹² The large maps of Brabant (1632), Holland (1629),¹¹³ and northern Europe (ca. 1635) appear to have been compositions published at his own expense.

Another well-known personality of the Hondius clan was Pieter van den Keere, who was taught the necessary artistic and technical skills by his brother-in-law Jodocus Hondius the Elder during their common stay in London. This period of training formed the basis of Van den Keere's successful career as an engraver and publisher in Amsterdam. His earliest cartographic work was a map of Ireland, which he engraved in England in 1591.¹¹⁴ Also during his stay in London, he supplied John Norden with five copperplates for his *Speculum Britanniae*. In 1593, Van den Keere moved from London to Amsterdam, where he collaborated with Hondius on several projects, including Willem Barents's *Caertboeck* and the world atlas *Caert-thresoor* (both published by Claesz.), the wall map of Europe of 1595 in fifteen sheets, the four-sheet map of the Low Countries of 1602, and the world map on the Mercator projection of 1603.

In addition to cooperating with Hondius, Van den Keere was involved with the publication of several well-known large maps—among them some of the greatest masterpieces of Dutch cartographic engraving.¹¹⁵ In the first two decades of the seventeenth century, Van den Keere also published a large number of single-sheet maps, which are now all very rare.¹¹⁶ In 1623, an inventory of all the copperplates in his possession was made for the purpose of selling them.¹¹⁷ Today, this list is of great importance to the history of cartography and provides insight into the productive activity of Van den Keere in particular.

Van den Keere was also closely involved with the production of large city panoramas.¹¹⁸ We find his name as

notated *Carto-Bibliography* (Alphen aan den Rijn: Canaletto, 1990); and Schilder, *World Map of 1669*, 7–9.

106. MCN, 4:319–27; R. A. Skelton, comp., *County Atlases of the British Isles, 1579–1850: A Bibliography* (London: Carta Press, 1970), 30–44; Arthur Mayger Hind, *Engraving in England in the Sixteenth & Seventeenth Centuries: A Descriptive Catalogue with Introductions*, 3 vols. (Cambridge: Cambridge University Press, 1952–64), 2:67–90; John Speed, *Wales: The Second Part of John Speed's Atlas*, "The Theatre of Great Britain," notes on Speed by John E. Rawnsley (Wakefield, Eng.: S. R. Publishers, 1970); idem, *The Theatre of the Empire of Great Britain, with the Prospect of the Most Famous Parts of the World* (1676), intro. Ashley Baynton-Williams (London: J. Potter in association with Drayton Manor, 1991); and idem, *A Prospect of the Most Famous Parts of the World, London 1627*, intro. R. A. Skelton (Amsterdam: Theatrum Orbis Terrarum, 1966).

107. They represented Germania, France, Great Britain and Ireland, and Italy. See MCN, 6:192–94, 345–47, 355–58, 376–78, and facsimiles 31, 72, 76, and 83.

108. MCN, 6:123–25, 139–40, 153–55, 168–69, and facsimiles 11 (Africa) and 16 (America).

109. MCN, 3:79–91. The only known copy of the map of Europe is in Amsterdam, Universiteitsbibliotheek (Mag. 1803 D 8).

110. Shirley, *Mapping of the World*, 342–43 (no. 319) and 363 (no. 339).

111. MCN, 5:75–89 and facsimiles 1.1–1.14, 2.1–2.14, 3.1–3.14, and 4.1–4.14.

112. MCN, 5:232–39.

113. Dirk Blonk and Joanna Blonk-van der Wijst, *Hollandia Comitatus: Een kartobibliografie van Holland* ('t Goy-Houten: HES & De Graaf, 2000), 233–37.

114. There are two known copies; one is preserved in Belfast, Linen Hall Library, the other is in the BL.

115. These include a world map on the Mercator projection from 1609 (MCN, 3:75–79, the only known copy of which, published in 1619, is located in the BNF [Ge C 4931]; see Shirley, *Mapping of the World*, 285–86 [no. 266]); a map of Germany in seven sheets from 1611 (MCN, 5:259–63); a four-sheet map of Spain from 1615; an eight-sheet map of Europe from 1604 (facsimile of the second edition of 1617: MCN, vol. 7, facsimiles 36.1–36.8); and a twelve-sheet world map in two hemispheres from 1611 (facsimile in Schilder and Welu, *World Map of 1611*).

116. For a list of single-sheet maps engraved or published by Pieter van den Keere until 1623, see Schilder and Welu, *World Map of 1611*, 26–30, and MCN, vol. 6, for several maps and facsimiles described.

117. For a part of Pieter van den Keere's property, drawn up on 16 June 1623, see Schilder and Welu, *World Map of 1611*, 31.

118. For an overview of the city panoramas produced in Amsterdam, see Bert van 't Hoff, "Grote stadspanorama's, gegraveerd in Amsterdam

engraver and publisher on panoramas of Utrecht (1603), Cologne (1613 and 1615), Amsterdam (1614 and 1618), Constantinople (1616), Paris (1617/18), Danzig (1618), and Hamburg (1619). He also collaborated on the first publications of Lodovico Guicciardini's famous *Descrittione di tutti i Paesi Bassi* in the Northern Provinces (Amsterdam and Arnhem).¹¹⁹ Pieter van den Keere's name was made particularly well known through the publication of his *Germania inferior* in 1617.¹²⁰ The maps in this atlas were not, however, based on new surveys, but copied from existing maps. In some cases, old and revised copperplates were used.¹²¹ Consequently, the value of these provincial maps lies not in the originality of their content, but in the extremely successful combination of an outstanding style of engraving with the presentation of town views and the costumed figures typical of each region. After 1620, the name of Van den Keere as engraver appears only on small-scale works, such as the atlas maps of Johannes Janssonius.

Competition from Other Amsterdam Engravers and Publishers

The Flemish contingent of mapmakers and traders in Amsterdam met with strong competition around 1600: Willem Jansz. Blaeu (Guilielmus Janssonius, Guilielmus Caesius).¹²² He was gifted in mathematics and astronomy, and after spending six months in the observatory of the distinguished Danish astronomer Tycho Brahe on the island of Hven, he returned to the northern Low Countries in May 1596. Three years later, he moved to Amsterdam because the expanding port offered good prospects to a chartmaker and nautical instrumentmaker. In 1605, he bought a house in Op het Water (now the Damrak) with the sign of the Vergulde Sonnewijser (gilt sundial) hanging outside. The area around Op het Water was especially crowded not only with seamen but with enterprising merchants. It became the focal point of both commercial and scientific activity, for booksellers and publishers had also established themselves there. This situation offered opportunities to people like Blaeu because it meant that both his customers and his supplies were always close at hand. He established himself as a commercial globemaker, instrumentmaker, and cartographer in about 1598–99, the years of his oldest dated pair of globes.¹²³ The mathematical and practical bent of his genius found fertile ground for further growth. The trade flourished, and Blaeu decided to extend his business by adding a printing shop.

The preparation and production of the pair of globes by Blaeu in 1598–99 signified the first serious competition for Jodocus Hondius, who had published a pair of globes of the same size in ca. 1597.¹²⁴ After 1604, Blaeu also involved himself in the market for separate maps and wall maps, territory that Hondius had called his own.¹²⁵ Nonetheless, both mapmakers also had specialties in

which they did not initially compete: for Blaeu, it was maritime cartography and the making of instruments for navigation; for Hondius, it was the production of atlases.

The competition between Jodocus Hondius and Willem Jansz. Blaeu, which was carried on after their deaths by their distinguished successors, spurred the production of globes, maps, and atlases to new and unparalleled heights. Each continually tried to outdo the other with a better or a larger work. Without this rivalry, Blaeu's large globes would likely never have been made, and no publisher would have incurred the extraordinary expense of producing a work such as his twelve-volume *Atlas maior*.

Willem Jansz. began to use the name "Blaeu" only when he was about fifty years old, about 1621. Before that, he was known simply as "Willem Jansz.," although he signed his name in Latin editions "Guilielmus Janssonius." This name, however, was quite similar to that of the map publisher Johannes Janssonius, the usual Latin translation of Jan Jansz. Customers no doubt repeatedly confused the two "Janssonii," certainly after Johannes Janssonius published an exact copy of Blaeu's pilot guide in 1620. Moreover, the two Amsterdam competitors lived next door to one another. In order to put an end to all the confusion, Willem Jansz. began to use the family name Blaeu (Caesius in Latin).

After his death in 1638, Willem Jansz. Blaeu was succeeded by his son Joan Blaeu. By about the middle of the seventeenth century, Joan had earned fame throughout Europe. French diplomat Claude Sarrau called him "Typographorum princeps" (the prince of printers).¹²⁶ Foreign visitors to Amsterdam went to see his printing offices, where over forty printers were employed. Unfortu-

sedert 1609," *Jaarboek van het Genootschap Amstelodamum* 47 (1955): 81–131, and Schilder and Welu, *World Map of 1611*, 6–7.

119. Deys et al., *Guicciardini Illustratus*, 60–71 (13–15 Jan Jansz.) and 82–84 (21 Laurents).

120. For a facsimile (Latin edition, 1617), see Pieter van den Keere, *Germania inferior: Amsterdam, 1617*, bibliographical note by C. Koeman (Amsterdam: Theatrum Orbis Terrarum, 1966).

121. Günter Schilder, "Pieter van den Keere, een goochelaar met koperplaten," *Kartografisch Tijdschrift* 6, no. 4 (1980): 18–29.

122. On the Blaeu family and its work, see MCN, vols. 3 and 4; KAN, vol. 2; GN, 125–214; H. de la Fontaine Verwey, "Dr. Joan Blaeu and His Sons," *Quaerendo* 11 (1981): 5–23; idem, *In en om de "Vergulde Sonnewijser"* (Amsterdam: N. Israel, 1979); Johannes Keuning, *Willem Jansz. Blaeu: A Biography and History of His Work as a Cartographer and Publisher*, rev. and ed. Y. Marijke Donkersloot–De Vrij (Amsterdam: Theatrum Orbis Terrarum, 1973); and C. Koeman, *Joan Blaeu and His Grand Atlas: Introduction to the Facsimile Edition of Le Grand Atlas, 1663* (Amsterdam: Theatrum Orbis Terrarum, 1970).

123. GN, 488–96 (BLA I).

124. GN, 464–72 (HON II). The pairs were 34 and 35.5 centimeters in diameter.

125. For a detailed catalog and partial reproduction of loose maps and topographical prints published by Willem Jansz. Blaeu, see MCN, vol. 4, facsimiles 1–23.

126. De la Fontaine Verwey, "Vergulde Sonnewijser," 170.

nately, the records of his business were destroyed by fire in 1672, but quite a number of Blaeu letters are preserved in libraries and archives in Florence. Further, Blaeu's participation in the municipality and in the printers' guild has been recorded in the archives, including the notary archives. In a notarial contract of 1663, Blaeu associated himself with some other citizens to engage in trade and cultivation "in the islands of Virginia," undertaking the supply of African slaves for the plantation.¹²⁷ As the chartmaker of the Dutch East India Company (1638–73), he was familiar with the directors of that powerful multinational organization, which may have influenced his activities at the stock exchange.¹²⁸ His social circuits (as a participant in city government, as elderman in the guild, and as navy and merchant fleet adviser), in addition to his correspondence with foreign scholars and artists, make him very representative of the mid-century business manager and patrician. In his commercial policy, he was not narrow-minded: although the magistrate of Amsterdam did not approve, Blaeu also printed Catholic works, and his descendants, Joan II, Pieter, and Willem, continued the printing and export of large editions of Catholic catechisms and prayer books.¹²⁹

When Blaeu was in his sixties, his life work in book printing required a culmination: the *Atlas maior*. This cartographic showpiece would eventually appear, beginning in 1662, in nine to twelve parts. As a result of the great dominance of the Blaeu and Hondius (later Janssonius) firms, there was little room for other participants in the market for maps, atlases, and globes.

One of the most versatile mapmakers of the first decades of cartographic activity in Amsterdam was Hessel Gerritsz., a geographer, engraver, cartographer, hydrographer, and publisher.¹³⁰ Although his accomplishments in navigation and hydrography are discussed elsewhere, he started his career as an engraver, and his earliest engravings date from 1606–8.¹³¹ In 1610, Gerritsz. engraved a small map titled *Hertochdommen Gulick, Cleve . . .*,¹³² and from the address it appears that he was starting his own printing shop, Op het Water. In 1612, he authored, printed, and published a remarkable booklet titled *Beschryvinghe vander Samoyeden landt*, which contained a description of Russia by Isaac Massa, illustrated with a map; the story by Pedro Fernández de Quirós about the supposed discovery of the Southland; and the famous Hudson treatise, with a map depicting Hudson's discoveries during his fourth voyage (1610) to Hudson's Bay.¹³³

In 1613, Gerritsz. published another small book, *Histoire du Pays nomme Spitsberghe*, in which he defended the Dutch claims against the English enterprises.¹³⁴ The appearance of Gerritsz.'s maps of Lithuania and Russia in 1613 was an important event in Dutch cartography in the early seventeenth century.¹³⁵ The latter map was repub-

lished the following year with some minor revisions, and that edition remained the "editio princeps" for many later maps of Russia.

Gerritsz.'s name can be connected with other maps of European countries. In 1612, he engraved a map of Spain in four sheets surrounded by a long printed description in Spanish.¹³⁶ In 1617, Jodocus Hondius published a map of Italy in four sheets that was engraved by Gerritsz. using the large map of Italy by Giovanni Antonio Magini of 1608 as a model (fig. 44.6).¹³⁷ Finally, Gerritsz. also played an important role in the production of the six-sheet map of northern Europe that was published after his death by Henricus Hondius in about 1635.

A specialist in the area of news cartography was the engraver and publisher Claes Jansz. Visscher.¹³⁸ Until about 1620, he was primarily active as a designer, engraver, and etcher of prints and did a lot of work for other publishers.¹³⁹ Visscher drew and engraved many town views and

127. Amsterdam, Gemeentearchief, Notary Jac. Hellerus, no. 2490, fol. 385.

128. 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), 119–27, and chapter 46 in this volume.

129. De la Fontaine Verwey, "Vergulde Sonnewyser," 175–78.

130. On Hessel Gerritsz., see Johannes Keuning, "Hessel Gerritsz.," *Imago Mundi* 6 (1949): 48–66, and *MCN*, 5:91–94.

131. These include the decorative margins on a 1606 folio map of Italy by Blaeu; a 1607 map of the Beemster before impoldering; the decorative margins on a 1607 folio map of France (*MCN*, 5:92 and vol. 4, facsimiles 8 [Italy], 11 [France], and 12 [Beemster]); and a 1608 wall map of the Seventeen Provinces made in cooperation with Van den Ende for Blaeu (known only from the second edition of 1622; see Van der Heijden, *Oude kaarten der Nederlanden*, 1:302–8, and *MCN*, vol. 1, facsimiles 2.1–2.22).

132. *KAN*, 2:514–15 (no. 2381:2A).

133. A facsimile is in Hessel Gerritsz., *Detectio freti Hudsoni; or, Hessel Gerritsz's Collection of Tracts by Himself, Massa and De Quir on the N. E. and W. Passage, Siberia and Australia*, trans. Fred. John Millard, essay by S. Muller (Amsterdam: Frederik Muller, 1878). See also Hessel Gerritsz., *Beschryvinghe van der Samoyeden landt, en Histoire du pays nommé Spitsberghe*, ed. S. P. l'Honoré Naber (The Hague: Martinus Nijhoff, 1924).

134. Hessel Gerritsz., *Beschryvinghe*, 77–103.

135. Leo Bagrow, *A History of Russian Cartography up to 1800*, ed. Henry W. Castner (Wolfe Island, Ont.: Walker, 1975), 51–62.

136. *MCN*, 5:91–92.

137. *MCN*, 5:348–49.

138. Maria Simon, *Claes Jansz. Visscher*, Inaugural-dissertation (Freiburg im Breisgau, Albert-Ludwig Universität, 1958); Hollstein, *Dutch and Flemish Etchings*, vols. 38 and 39 (*Claes Jansz. Visscher to Claes Jansz. Visscher II*, comp. Christiaan Schuckman, ed. D. de Hoop Scheffer); Isabella Henrietta van Eeghen, "De familie van de plaatsnijder Claes Jansz. Visscher," *Maandblad Amstelodamum* 77 (1990): 73–82; Ger Luijten et al., eds., *Dawn of the Golden Age: Northern Netherlandish Art, 1580–1620*, trans. Michael Hoyle et al. (Amsterdam: Rijksmuseum, 1993); and *MCN*, 5:97–101.

139. Christiaan Schuckman, "Kaarten, gezichten en historieprenten van Claes Jansz. Visscher en zijn zonen in de Hollstein-reeks," *Caert-Thresoor* 10 (1991): 61–65.

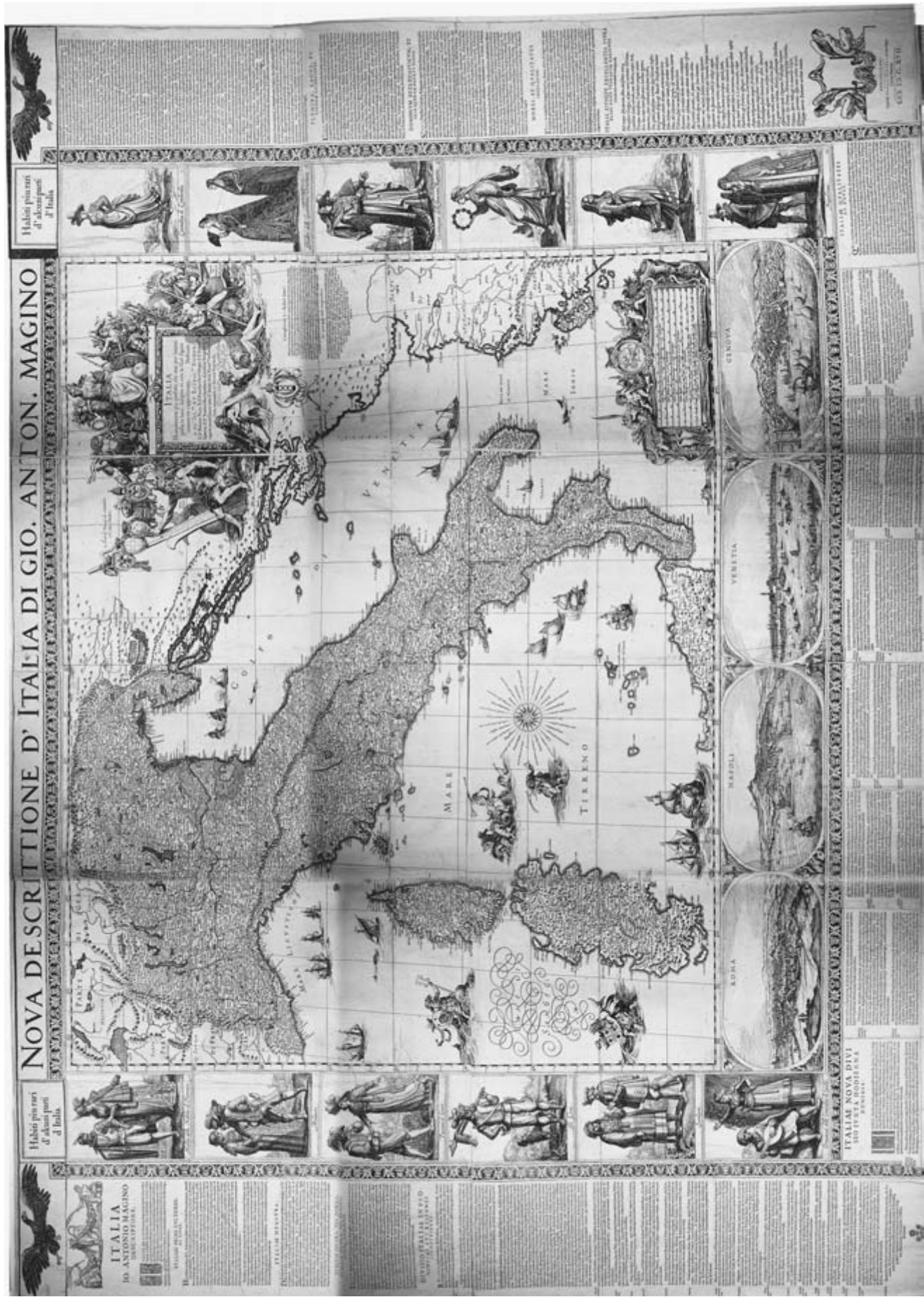


FIG. 44-6. NOVA DESCRIPTIO D' ITALIA DI GIO. ANTON. MAGINO, WALL MAP PUBLISHED BY HESSEL GERRITZ, 1617.

Size of the original: 119.5 × 167.5 cm. Photograph courtesy of the Niedersächsische Staats- und Universitätsbibliothek, Göttingen (Mapp, 3001).

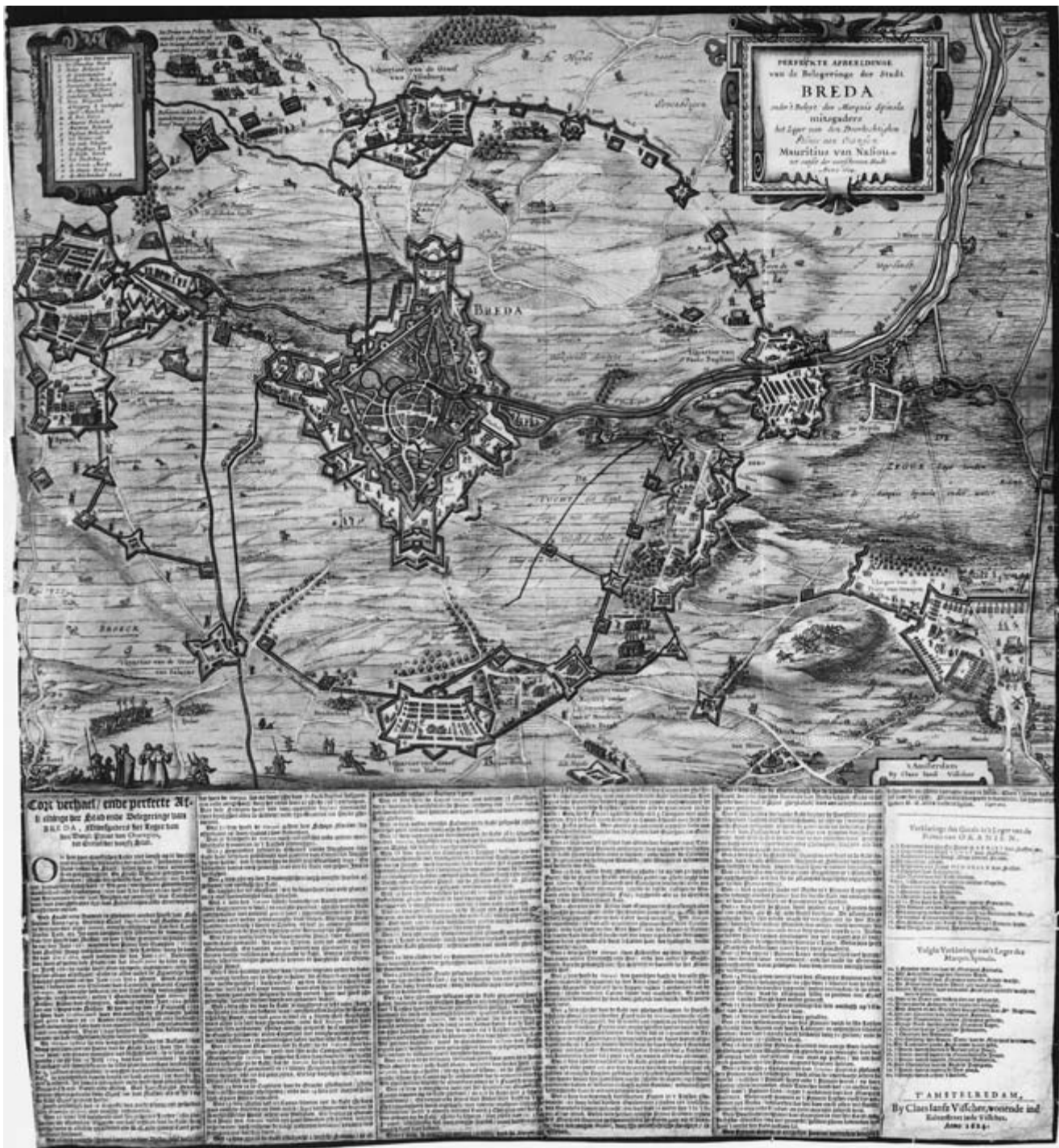


FIG. 44.7. NEWS MAP PUBLISHED BY CLAES JANSZ. VISSCHER. The map depicts positions of the Spanish army in the surroundings of Breda in 1624.

Size of the original: 40.5 × 53 cm (map alone), 59 × 53 cm (map with text). Photograph courtesy of the Universiteitsbibliotheek Leiden (009-07-015).

other prints that were used by Blaeu and Van den Keere, among others, to decorate their maps. After Visscher acquired the copperplates for Van den Keere's atlas *Germania inferior* in 1623, he began to present himself more and more as a map engraver and publisher, producing

many maps of sieges, battles, and war zones (fig. 44.7). A variety of these maps were later included in the atlas by Henricus Hondius and Johannes Janssonius. Visscher obtained the majority of his stock by means of the second-hand purchase of copperplates of maps, prints, and town

views. In reissuing them, he was sometimes satisfied adding his name as publisher; other times, he reworked the copperplates himself or had it done by other engravers in his shop.

ATLASES FROM THE LOW COUNTRIES (TO CA. 1680)

In the broadest sense of the word, an atlas is a collection of maps bound into one or more parts. The publication of an atlas, however, makes further demands: the maps must be printed, and there must be a certain relationship between the maps included. With some exceptions, the maps in an atlas are the same size and, insofar as possible, drawn in the same style. A complete atlas also contains geographical descriptions that support the maps or vice versa. These books of maps, which were available in a limited edition of identical copies, had three characteristics: they were a collection of printed maps in book form or bound into a book with a printed title page; there was uniformity with respect to map format, design, and presentation; and there was a standardized composition and use of atlas rubrics.¹⁴⁰ Many sixteenth- and seventeenth-century atlases were published in editions of various languages. The maps, engraved in copper, on which the text was usually in Latin, were not altered.

Although the printed editions of Ptolemy's *Geography*, some East Asian examples, and the Italian composite atlases can be considered the forerunners of the modern atlas, world atlases first caught on in the Low Countries. The first modern world atlas was published in Antwerp in 1570. It was followed, not long after, by the first town atlas (1572), pocket atlas (1577), regional atlas (1579), nautical atlas (1584), and historical atlas (1595). The atlas tradition in the Low Countries would reach its peak in 1662 with the publication of Joan Blaeu's multipart *Atlas maior*.

WORLD ATLASES

Two individuals in the Low Countries made definitive contributions to the development of the modern atlas as a successful commercial product: Abraham Ortelius and Gerardus Mercator. Ortelius was the first to publish a book that might be called a modern world atlas, the *Theatrum orbis terrarum* (Antwerp, 1570); Mercator was the first to give the title atlas to such a book, the *Atlas sive Cosmographicae meditationes de fabrica mundi et fabricati figura* (Duisburg, 1585–95). Gerard de Jode also deserves mention as publisher of the competing atlas, *Speculum orbis terrarum* (Antwerp, 1578). The first large world atlas in Amsterdam appeared in 1606, when Jodocus Hondius in collaboration with Cornelis Claesz. produced a new edition of Mercator's *Atlas*. Two new atlas publishers appeared on the scene around 1630: Willem Jansz. Blaeu and Johannes Janssonius. They began a new trend in atlas pro-

duction in Amsterdam that was characterized by competition and a significant increase in the number of maps.

The First Atlas: Ortelius's *Theatrum Orbis Terrarum*

Abraham Ortelius's *Theatrum orbis terrarum* of 1570 was conceived, compiled, and printed in Antwerp, where artists, engravers, and printers enjoyed the custom and patronage of a mercantile middle class with active humanistic interests.¹⁴¹ The *Theatrum* was compiled more according to principles laid down by its editor than according to the individual requirements of a customer. The best maps of the time were published in a simple format and in book form with descriptions.

There are various theories about the origin of the atlas, but there is no question that it represented a new phenomenon.¹⁴² Several precursors were in existence long before the publication of Ortelius's *Theatrum*. Ptolemy's *Geography*, with its twenty-eight ancient maps of uniform size, was essentially of antiquarian and historical interest. The addition of individual *tabulae modernae* gradually transformed it into a geographic source work. Nevertheless, it never entirely outgrew its Ptolemaic and antiquarian structure. Collections of Italian maps were also assembled into atlases by Italian publishers in Rome and Venice between 1560 and 1577.¹⁴³ The compositions of these mapsellers, working to orders from their customers, cannot be described as atlases in our sense of the word, for they were composed of maps of various sizes, unaccompanied by text. The gradual modification of Ptolemy's *Geography* to increasingly resemble an atlas and the development of the composite atlas in the third quarter of the sixteenth century indicate that there was a market and a demand for such publications.

Several other factors contributed to the appearance of the atlas. For example, there was Sebastian Münster's *Cosmography* (first printed in Basel in 1544, published in Latin, German, French, and Italian), with descriptions of the countries of the world and over fifty maps and seventy town plans. The inspiration of Gerardus Mercator, who was himself preparing an atlas and was in correspondence with Ortelius, must also have contributed. The need for up-to-date, adequate maps had also been expressed by the

140. Van der Krogt, "Commercial Cartography," 87; idem, "The *Theatrum Orbis Terrarum*: The First Atlas?" in *Abraham Ortelius*, 55–78, esp. 57; and KAN, 1:17–19.

141. C. Koeman, *The History of Abraham Ortelius and His *Theatrum Orbis Terrarum** (Lausanne: Sequoia, 1964). This monograph accompanies a facsimile, in color, of the Latin edition of 1570.

142. On the origin of the *Theatrum*, see Van der Krogt, "First Atlas?" 61–63.

143. See chapter 31 in this volume, especially appendix 31.2, and David Woodward, "Italian Composite Atlases of the Sixteenth Century," in *Images of the World: The Atlas through History*, ed. John Amadeus Wolter and Ronald E. Grim (New York: McGraw-Hill, 1997), 51–70.

merchants of Antwerp. Correspondence from Johannes Radermaker to Ortelius's nephew in 1603 and 1604 reveals that one of these merchants, Gilles (or Egidius) Hooftman, had shown interest in the idea of assembling a new style of map book. He not only wanted to calculate the distances that his ships would have to cover across the oceans, but he also wanted to follow war developments in Europe. Hooftman considered it illogical to roll out large maps for this purpose, at which his assistant Radermaker made the suggestion that as many small maps as possible might be bound into a handy book. The execution of this plan was entrusted to Radermaker, who had enjoyed a good relationship with Ortelius since 1555. Ortelius put together a volume of thirty-eight maps, most of which had been printed by Michele Tramezzino in Rome. According to Radermaker, the composition of this atlas to order inspired Ortelius to make his *Theatrum orbis terrarum*.¹⁴⁴ Walter Ghim gives a completely different explanation in his biography of Gerardus Mercator. Ghim claims that Mercator had plans to compile a modern atlas and had already set forth his ideas for it in the introduction to his *Chronologia* of 1569. Mercator postponed his plans, however, in favor of Ortelius, who enjoyed a more favorable financial situation.¹⁴⁵ In other words, he yielded to Ortelius not only the renown of being the first to carry out the new idea, but also the financial advantages. There is probably a kernel of truth in both versions of the story. Composing an atlas for Hooftman may well have suggested to Ortelius the idea, which he later worked out with Mercator. Moreover, Ortelius stated in his introduction that it was the inconvenience of consulting large rolled and folded maps that led to the publication of his atlas. Ortelius's originality lay not only in his integration of map and text into a single homologous unit but also in his systematic updating and enlarging of earlier maps in the form of supplements. Thus, the contents of the atlas increased from 53 maps in 1570 to 119 maps in 1598, the year of Ortelius's death (fig. 44.8).

Ortelius shared the voluminous task of redrawing (often reducing) and engraving the source maps with a number of collaborators, the most famous of whom was Frans Hogenberg.¹⁴⁶ The engraving of the fifty-three maps of the first edition must have required at least two years. In addition, the selection and preparation of the source maps must have begun several years earlier. Thus, it seems reasonable that Ortelius's *Theatrum orbis terrarum* was in preparation from 1564 to 1567. Thanks to Ortelius's capable judgment, the reshaped, often awkwardly sized prototypes were transformed into well-designed, elegant, and easily readable maps.¹⁴⁷

The *Theatrum* of 1570 was published by the Antwerp printer Egidius (Gielis) Coppens van Diest entirely at Ortelius's expense. Surprisingly, the atlas was not entrusted to the famous Plantijn publishing house from the start, but in 1579 Plantijn took over the printing and finally, in

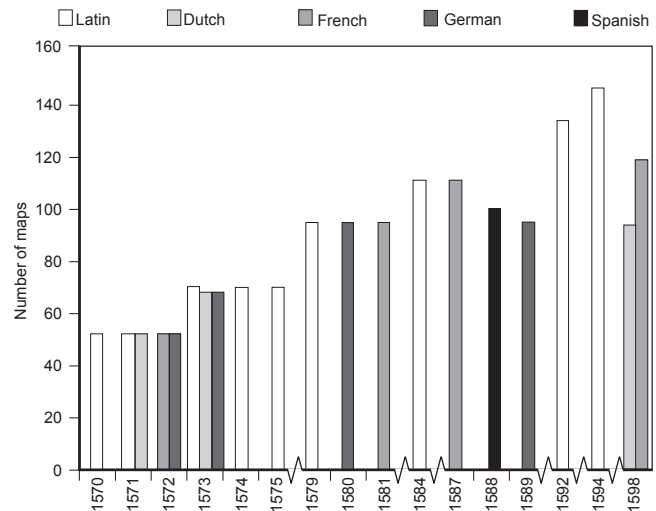


FIG. 44.8. EDITIONS OF ORTELIUS'S *THEATRUM ORBIS TERRARUM*, 1570–98.

1588, bought the copyrights and printed the subsequent editions at his own expense.¹⁴⁸ The maps in the *Theatrum*, skillfully engraved with elaborate borders and cartouches and with italic lettering, set a high standard (fig. 44.9).¹⁴⁹

One of the outstanding characteristics of the *Theatrum orbis terrarum* was the list it contained of the European cartographers (or geographers) active at or about Or-

144. The correspondence can be found in Ortelius, *Epistulae*, 772–79; see also Van der Krogt, “First Atlas?” 61–63, and idem, “Commercial Cartography,” 88. The Italian atlases to order are sometimes called IATO atlases.

145. For an English translation of Ghim's biography, see A. S. Osley, *Mercator: A Monograph on the Lettering of Maps, etc. in the 16th Century Netherlands with a Facsimile and Translation of His Treatise on the Italic Hand and a Translation of Ghim's Vita Mercatoris* (New York: Watson-Guptill, 1969), 183–94, esp. 188; for an annotated German translation, see Hans-Heinrich Geske, “Die Vita Mercatoris des Walter Ghim,” in *Gerhard Mercator, 1512–1594: Festschrift zum 450. Geburtstag*, Duisburger Forschungen 6 (Duisburg-Ruhrort: Verlag für Wirtschaft und Kultur W. Renckhoff, 1962), 244–76.

146. On Frans Hogenberg, see Kinds, *Kroniek van de opstand*; Frans Hogenberg and Abraham Hogenberg, *Geschiedsblättern*, ed. Fritz Hellwig (Nördlingen: Alfons Uhl, 1983); and pp. 1234–36 in this volume.

147. On variations in the different editions of Ortelius's atlas, including a comparison of copies of successive copperplates, see M. P. R. van den Broecke, “Variaties binnen edities van oude atlassen, geïllustreerd aan Ortelius' *Theatrum Orbis Terrarum*,” *Caert-Thresoor* 13 (1994): 103–9, and Arthur L. Kelly, “Maps of the British Isles, England and Wales, and Ireland: New Plates, States, Variants, and Derivatives,” in *Abraham Ortelius*, 221–38.

148. The working relationship between Plantijn and Ortelius is described in detail in D. Imhof, “The Production of Ortelius Atlases by Christopher Plantin,” in *Abraham Ortelius*, 79–92. See also D. Imhof, ed., *De wereld in kaart: Abraham Ortelius (1527–1598) en de eerste atlas*, exhibition catalog (Antwerp: Museum Plantin-Moretus, 1998).

149. For a more or less complete review of the various maps in the *Theatrum* (including illustrations), see Van den Broecke, *Ortelius Atlas Maps*. A more recent summary of all the copperplates is in M. P. R. van den Broecke, “The Plates of Ortelius' *Theatrum Orbis Terrarum*,” in *Abraham Ortelius*, 383–90.

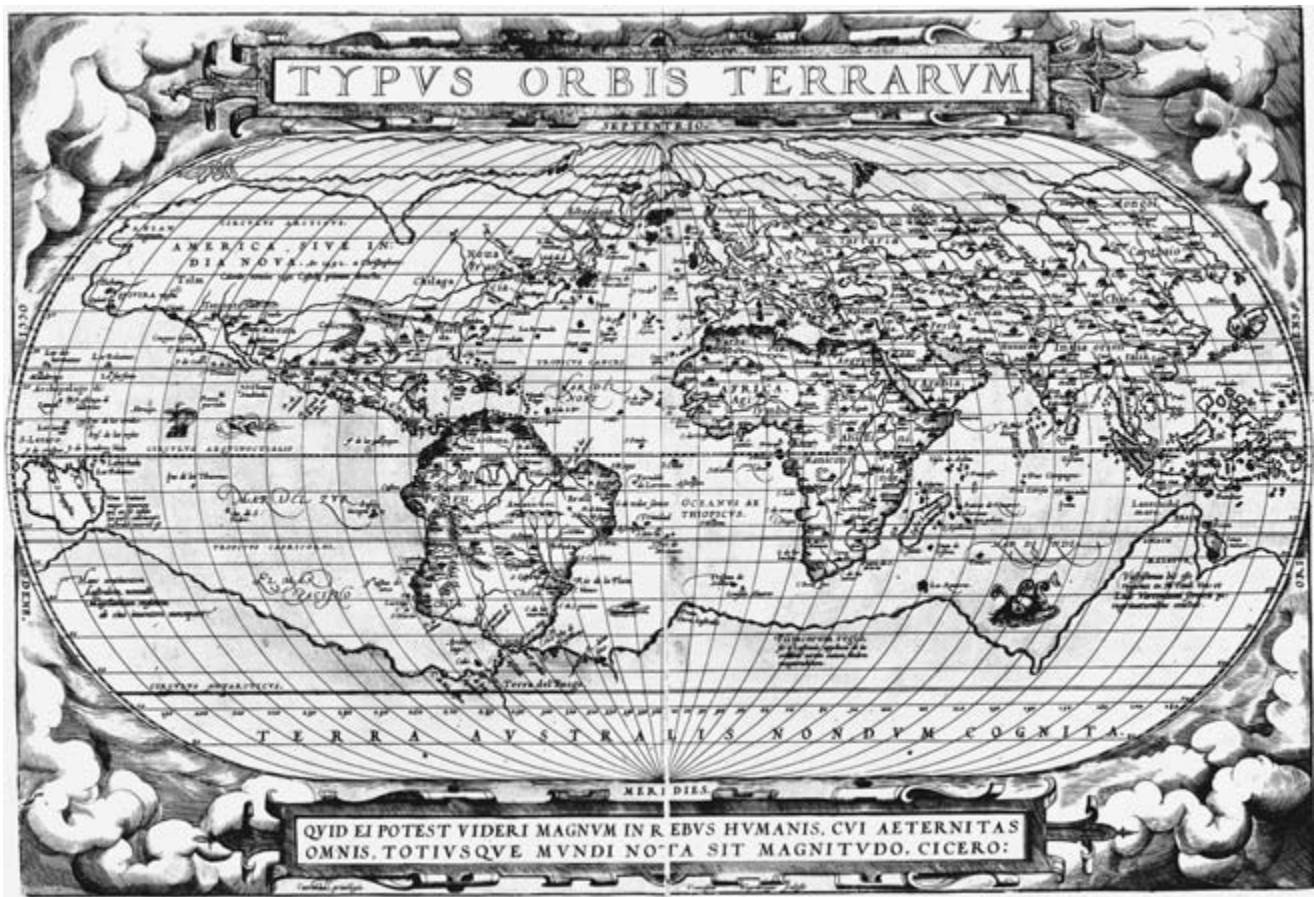


FIG. 44.9. WORLD MAP IN ORTELIUS'S *THEATRUM*, 1570. Titled *Typus orbis terrarum*; engraved by Frans Hogenberg.

Size of the original: 33.5 × 49.5 cm. Abraham Ortelius, *Theatrum orbis terrarum* (Antwerp, 1570). Photograph courtesy of the Universiteitsbibliotheek Amsterdam (31-01-07).

telius's time, the "Catalogus auctorum tabularum geographicarum."¹⁵⁰ It included not only the names of those who contributed to the compilation of the *Theatrum*, but also the names of other significant cartographers, making the "Catalogus auctorum" an invaluable source for the study of sixteenth-century cartography. The list in the first edition named eighty-seven cartographers, but by 1603 it included 183 names.

The *Theatrum orbis terrarum* was immediately favorably received, and four new editions were published in 1571 and 1572.¹⁵¹ The first editions were quickly followed by supplements (*Additamenta*) containing maps of countries omitted in the earlier editions. Later, new and expanded editions appeared. The *Additamenta* were published in 1573 (with 18 added maps, one replacing a previous map), 1579 (23 added maps), 1584 (24 added maps, some replacing older ones), 1590 (22 added maps), and 1594 (17 added maps).

The first editions of the *Theatrum orbis terrarum* were printed with a Latin text, the lingua franca of the educated European elite, but vernacular editions in Dutch (1571), German (1572), French (1572), Spanish (1588),

English (1606), and finally Italian (1608) were quick to follow. The international nature of map publication—readily crossing political boundaries—is clear.

In 1606, an English edition of the *Theatrum orbis terrarum*, *The Theatre of the Whole World: Set Forth by that Excellent Geographer Abraham Ortelius*, appeared in London, printed for John Norton and John Bill. A break in the printing of editions in Antwerp between

150. The "Catalogus auctorum" from the 1595 edition of the *Theatrum* is reproduced with an introduction in Peter H. Meurer, "The Catalogus Auctorum Tabularum Geographicarum," in *Abraham Ortelius*, 391–408. There is also a photographic reproduction of the edition of 1601, with an introduction, in Meurer, *Fontes cartographici Orteliani*, 63–67 (Meurer also includes a detailed summary of the sources that Ortelius used for his atlas). See also Karrow, *Mapmakers of the Sixteenth Century*, 28–31, and Leo Bagrow, "A. Ortelii catalogus cartographorum," *Petermanns Mitteilungen, Ergänzungsheft* 199 (1928): 1–137, with plates, and 210 (1930): 1–135; reprinted in *Acta Cartographica* 27 (1981): 65–357.

151. For a detailed summary of the various editions, see Peter van der Krogt, "The Editions of Ortelius' *Theatrum Orbis Terrarum* and *Epitome*," in *Abraham Ortelius*, 379–81; *KAN*, 3:33–244; and idem, "First Atlas?" 66–67.

1603 and 1608 has led many to conclude that all the plates were in London for printing during those years. Skelton, however, correctly concludes that the sheets of the English edition had the maps printed on one side in Antwerp before being dispatched to London.¹⁵² There the text was printed on the verso, with additional pages bearing text only, at the Eliot Court Press by Bradwood.

From 1608, new editions of the *Theatrum* appeared, again printed in Antwerp by, among others, Vrients and the Officina Plantiniana. The last four editions were in Italian (1612 and 1624) and Spanish (1612 and 1641).¹⁵³ By 1641, over forty editions of the *Theatrum orbis terrarum* had appeared, testifying to its great commercial success.

A Rival Atlas by De Jode

A world atlas that rivaled the *Theatrum orbis terrarum* was Gerard de Jode's *Speculum orbis terrarum* (1578) (fig. 44.10).¹⁵⁴ We have little evidence of the origins of this work, but it was less successful than Ortelius's atlas. De Jode must have come up with the idea of combining a number of maps with printed text on the back (verso) side into a single volume at about the same time that Ortelius did. Long before the publication of the atlas, De Jode's maps were available individually; beginning in 1567—more than ten years before the appearance of the atlas—large numbers were sold in Plantijn's shop. It is not certain whether De Jode originally intended to publish his maps in an atlas or whether he borrowed that idea from Ortelius.

The *Speculum orbis terrarum* was probably ready for publication as early as 1573, but it was not published until 1578.¹⁵⁵ Denucé has argued that Ortelius used the influence of his powerful friends to prevent the granting of the necessary royal privilege, causing this delay and thus protecting his *Theatrum*.¹⁵⁶ Whatever the reason, the publication of De Jode's atlas was postponed until the expiration of the privilege granted for Ortelius's, and the first copies of the *Speculum orbis terrarum* were sold by Plantijn and others only in early 1579.

Notwithstanding the lower price of only 6 guilders (compared to 12 guilders for the *Theatrum* in 1579), De Jode's fine atlas with sixty-five handsomely engraved maps (fig. 44.11) and an explanatory text never seriously competed with the *Theatrum orbis terrarum*. It is possible that the style of De Jode's maps did not appeal to the public, although Jodocus Hondius and later Dutch cartographers attested that De Jode's maps were at the same level as those of Mercator and Ortelius.¹⁵⁷ The *Speculum orbis terrarum* was compiled and produced by De Jode with the help of a number of collaborators, including the "engineer-geographer" Jan van Schille of Antwerp¹⁵⁸ and the German physician and scholar Daniel Cellarius, who played a major role in planning and preparation. From Cellarius we gather that De Jode "partly drew these maps himself,



FIG. 44.10. TITLE PAGE, *SPECULUM ORBIS TERRARUM*, GERARD DE JODE, 1578.

Size of the original: ca. 41 × 27.3 cm. Gerard de Jode, *Speculum orbis terrarum* (Antwerp, 1578). Photograph courtesy of the Osher Map Library and Smith Center for Cartographic Education at the University of Southern Maine, Portland.

engraved some of them with his own hand, and bore the not small expense," while the brothers Joannes and Lucas

152. A facsimile is Abraham Ortelius, *The Theatre of the Whole World, London 1606*, intro. R. A. Skelton (Amsterdam: Theatrum Orbis Terrarum, 1968).

153. D. Imhof, "Balthasar I Moretus en de uitgaven van Ortelius' *Theatrum* (1612–1641)," in *Abraham Ortelius (1527–1598)*, ed. Marco van Egmond (Amersfoort: NVK, 1999), 35–40. Also of interest is Joseph Q. Walker, "The Maps of Ortelius and Their Variants—Developing a Systematic Evidential Approach for Distinguishing New Map Plates from New States of Existing Map Plates," *Antiquarian Maps Research Monographs* 1 (2001): 1–16.

154. For a facsimile of the Latin edition of 1578, see Gerard de Jode, *Speculum orbis terrarum, Antwerpen 1578*, intro. R. A. Skelton (Amsterdam: Theatrum Orbis Terrarum, 1965); see also Nalis, *Van Doetecum Family*, pt. 3, 34–70.

155. MCN, 1:5.

156. Denucé, *Oud-Nederlandsche kaartmakers*, 2:70–71.

157. Denucé, *Oud-Nederlandsche kaartmakers*, 1:163.

158. Meurer, *Fontes cartographici Orteliani*, 230–32 and 340.

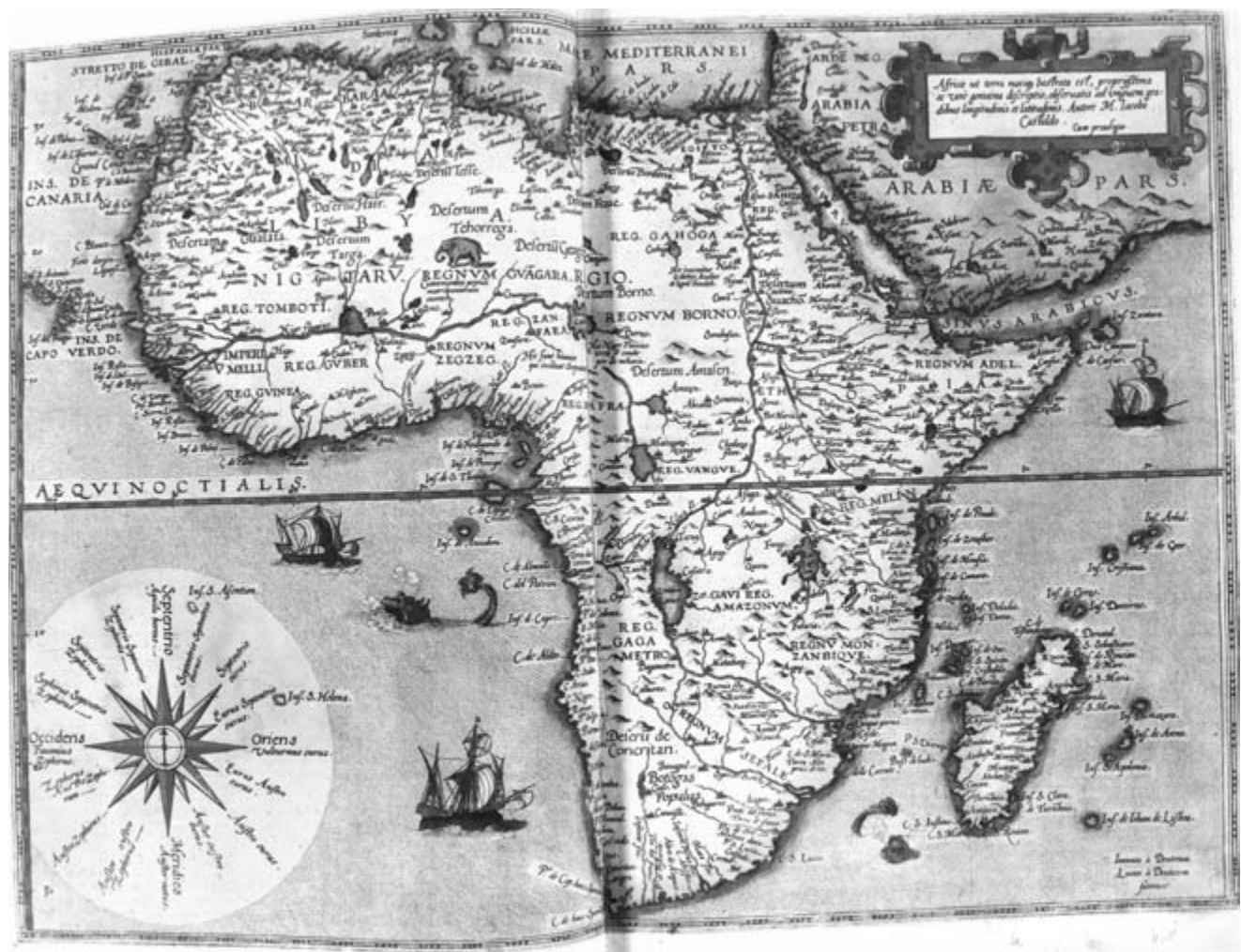


FIG. 44.11. MAP OF AFRICA IN DE JODE'S *SPECULUM ORBIS TERRARUM*.

Size of the original: ca. 33 × 41 cm. Gerard de Jode, *Specu-*

lum orbis terrarum (Antwerp, 1578), accompanying section III. Photograph courtesy of the Special Collections Library, University of Michigan, Ann Arbor.

van Doetecum “skillfully etched most of the maps so that they appear to be engraved with the burin.”¹⁵⁹ There is no doubt that De Jode was responsible both for the selection of the maps—which he drew from his large stock of Italian, German, and Flemish maps—and for their printing. After his death in 1591, the De Jode publishing house was continued by his widow, Paschina, and youngest son, Cornelis. In 1593, a new edition of the atlas, *Speculum orbis terrae*, was published by the Antwerp press of Arnold Coninx. In addition to newly engraved title pages, this edition contained a number of new maps that, together with the old maps, comprised 109 maps on eighty-three plates. Cornelis de Jode died in 1600 at the young age of thirty-two. The plates and stock of the *Speculum orbis terrarum*, together with the plates of some wall maps, were acquired by the Antwerp publisher Joan Baptista Vrients, who also purchased the plates of the *Theatrum orbis terrarum* at about this time.

With the acquisition of the copperplates of both competitors, Vrients obtained a monopoly over atlas publication in Antwerp. In promoting the two atlases, he gave priority to the *Theatrum orbis terrarum* because its well-established commercial popularity guaranteed a better return on his investment. Vrients brought out nine new editions of the *Theatrum orbis terrarum*, including the first English (1606) and Italian (1608 and 1612) versions. He had apparently bought the De Jode plates only to prevent any further publication of the *Speculum orbis terrarum*. After Vrients's death in 1612, according to an inventory list dated from 1704, the copperplates of the *Theatrum orbis terrarum* as well as of the *Speculum orbis terrarum* passed to the Moretus publishing house, where they were stored. The Moretuses finally published Spanish editions

159. “Daniel Cellarius Ferimontanus Lectori S,” in Gerard de Jode's *Speculum orbis terrarum* (Antwerp, 1578). See also MCN, 1:5.

of Ortelius's world atlas in 1612 and about 1641, and they also published the world map in two hemispheres by Cornelis de Jode, preserved in only one example, which incorporated the discovery of a passage around Cape Horn and into the Pacific by Jacob Le Maire in 1616.¹⁶⁰

Mercator's *Atlas*

In the 1560s, Gerardus Mercator planned a comprehensive cosmographic work on the creation and origin of the universe. This ambitious cosmography was to consist of five parts, according to the introduction of the first part to be published—the *Chronologia* (1569):

1. the creation of the world (text published after Mercator's death in the introduction of the *Atlas*, 1595);
2. a description of the universe (never appeared);
3. a description of the land masses and oceans in three parts: *Tabulae geographicae* (published, incomplete, in the *Atlas*); maps of Ptolemy (published in 1578); antique geography (never appeared);
4. a genealogy and political history (appeared only in the form of texts accompanying the maps in the *Atlas*); and
5. a chronology (published in 1569).¹⁶¹

Mercator was only partially successful in this plan, and he postponed publication in the hope that more information might become available. Eventually only about half of the cartographic portion of his cosmography was realized. The first twenty-eight maps appeared in his edition of Ptolemy's *Geography* of 1578.¹⁶² Mercator subsequently delivered the first three installments of his *Tabulae geographicae* in 1585 with fifty-one maps: sixteen of France, nine of the Low Countries, and twenty-six of Germany. Twenty-two maps of Italy and the Balkan Peninsula, the fourth installment, followed in 1589.¹⁶³

After Mercator's death in 1594, his son Rumoldus published as much as possible of the cosmography his father had left behind.¹⁶⁴ For that purpose, Rumoldus—who had returned to Duisburg in 1587 from London, where he had been the head of the English branch of the Cologne publishing house Birckmann—combined the four installments of the *Tabulae geographicae* already published with 34 finished but as yet unpublished maps (of Iceland, the British Isles, and the northern and eastern European countries). In order to bring the whole thing onto the market quickly, Rumoldus added his own world map of 1587 and a small map of Europe. He had his nephews Gerardus Mercator Jr. and Michael Mercator—sons of Arnoldus Mercator—engrave three continent maps based on his father's world map of 1569. All these maps, totaling 107, formed the second part of the *Atlas*. In addition, Gerardus Mercator had left yet another manuscript behind in which he had told the story of creation. Rumoldus added this text as part 1. The entire work was published



FIG. 44.12. TITLE PAGE FROM GERARDUS MERCATOR'S *ATLAS*, 1595.

Size of the original: 39 × 23.5 cm. Gerardus Mercator, *Atlas sive Cosmographicae meditationes de fabrica mundi et fabricati figura* (Duisburg, 1595). Photograph courtesy of the Universiteitsbibliotheek Amsterdam.

in 1595 titled *Atlas sive Cosmographicae meditationes de fabrica mundi et fabricati figura* (fig. 44.12).¹⁶⁵ In

160. Van der Krogt, "Editions of Ortelius' *Theatrum Orbis Terrarum*," 379; Imhof, "Balthasar I Moretus"; and MCN, 3:256–58.

161. KAN, 1:31–33, and Van der Krogt, "Commercial Cartography," 93.

162. KAN, 1:479–81 (no. 1:501).

163. KAN, 1:44–50 (nos. 1:001 and 1:002).

164. On the activities of the house of Mercator following the death of Gerardus Mercator, see Peter H. Meurer, "De zonen en kleinzonen van Mercator," in *Gerardus Mercator Rupelmundanus*, 370–85.

165. There is a facsimile of this edition of Mercator's atlas (Brussels: Culture et Civilisation, 1963). There is also a facsimile with a complete

order to save those who already owned the first four installments of the *Tabulae geographicae* unnecessary expense, Rumoldus allowed for the purchase of just the new additions (the foreword, the creation story, and the thirty-nine additional maps). The *Atlas* was introduced with a biography of Gerardus Mercator, written by the Duisburg magistrate Walter Ghim, and Rumoldus Mercator signed the preface. Rumoldus's nephew Johannes Mercator is mentioned as the author of two poems in the introduction, but he probably also engraved most of the maps that first appeared in 1595. Gerardus Mercator Jr. signed the maps of Africa and Asia; Michael Mercator is named as the engraver of the map of America.

The atlases of Ortelius and Mercator are a reflection of their backgrounds: Ortelius's atlas was primarily a commercial product, while Mercator had a more scholarly atlas in mind. Compared to Ortelius, Mercator worked more slowly, but more critically. His maps were—in addition to being finely engraved—the result of a careful study of the material, which was ultimately reworked into a new cartographic product.

Mercator's *Atlas* cannot be considered a finished work. For example, there are no maps of Spain or Portugal or regional maps from continents other than Europe. Rumoldus certainly planned to fill in these gaps, but he died prematurely in 1599.¹⁶⁶ His nephews Johannes and Gerardus Jr. took little initiative in cartographic publishing after 1595. Michael Mercator made a name for himself by announcing a new edition of the *Rudimenta cosmographica* by Johannes Honter, through his business contacts with Plantijn in 1598, and as a surveyor on the lower Rhine in 1598 and 1606, but ultimately his primary career became that of innkeeper and wine merchant.¹⁶⁷ The third generation of Mercators was clearly lacking in cartographic ability, and, as a result, the family firm rapidly declined. A final edition of the *Atlas* appeared in 1602 from the Duisburg press of Bernard Buys, but it was not a commercial success.¹⁶⁸ Gerardus Mercator Jr. liquidated the enterprise in 1604 and sold the copperplates.

Continuation of Mercator's *Atlas* by Hondius and Janssonius

The settlement that Gerardus Mercator Jr. received for the sale of the copperplates in 1604 mentioned a sum of 2000 daalders.¹⁶⁹ There was thus probably no auction, but a previously negotiated amount was to be paid by a single purchaser. This purchaser was likely not Jodocus Hondius, as was assumed for a long time, but rather Cornelis Claesz., who appears to have attempted to expand the stock of his publishing house around 1602 with an atlas in folio format.¹⁷⁰ Initially Claesz. worked with Joan Baptista Vrients, who obtained the publishing rights to Ortelius's *Theatrum orbis terrarum* in 1601. However, Claesz. realized that he should remain independent of

Vrients despite their cooperation, and this may be the reason he became involved in negotiations regarding Mercator's estate. Claesz. has to be considered the driving force behind the production of the first edition of the *Atlas* in the northern Low Countries. Hondius probably bought the copperplates only after Claesz.'s death in 1609.

A fair number of Mercator's copperplates were moved from Duisburg to Amsterdam in 1604.¹⁷¹ Among them were, no doubt, the 28 copperplates of the maps for the edition of the *Geography*¹⁷² and the 107 copperplates of the maps for the *Atlas*. In 1605, the *Geography* was published with both Latin and Greek texts jointly by Hondius and Claesz.¹⁷³ It was the first book with a Greek text to be printed in Amsterdam. Hondius had received a classical education at the University of Leiden, and at the age of 39 he had entered the university as a student of mathematics, most likely encouraged by the classical scholar Petrus Bertius,¹⁷⁴ his wife's half-brother, who also insisted on printing the Greek text side by side with the Latin. Humanistic interest in classical writers was well represented at the University of Leiden at the time, but not in the trading port of Amsterdam, where none of the printers even owned Greek type. Further, in 1605 Hondius did not possess either presses or workmen for typographic printing. From typographic evidence, Wijnman has demonstrated that Jan Theunisz., printer for the University of Leiden who moved to Amsterdam in 1604, printed the text of the

English translation on CD-ROM: Gerhardus Mercator, *Atlas sive cosmographicae meditationes de fabrica mundi et fabricati figura* (Oakland: Octavo, 2000). See also *KAN*, 1:50–55 (no. 1:011), and Peter H. Meurer, "De verkoop van de koperplaten van Mercator naar Amsterdam in 1604," *Caert-Thresoor* 17 (1998): 61–66, esp. 62.

166. In the 1595 edition of the *Atlas*, in the note to the reader following the title page for part 2, Rumoldus announced: "I will begin with a (second) section of the new geography, which will give a thorough description of Spain. After that I will direct myself to Africa, Asia, America, and—in the event it is discovered, as is hoped—the third continent, which will be named Magellanica of Terra Australis. In every respect—and with God's assistance—I will, with the greatest diligence and industry and to the best of my ability, bring all that was left unfinished (which is the largest portion of his total work) by my deceased father Gerardus Mercator, bless his memory, to a successful conclusion."

167. Meurer, "De verkoop van de koperplaten van Mercator," 62.

168. *KAN*, 1:56–58 (no. 1:012).

169. Heinrich Averdunk and J. Müller-Reinhard, "Gerhard Mercator und die Geographen unter seinen Nachkommen," *Petermanns Mitteilungen, Ergänzungsheft*, 182 (1914; reprinted Amsterdam: Theatrum Orbis Terrarum, 1969), 93.

170. Meurer, "De verkoop van de koperplaten van Mercator," 63–65. Based on the publication of the loose map of Westphalia, Meurer demonstrates that there was already contact between Mercator's heirs and Cornelis Claesz. around 1599.

171. For a summary of the copperplates sold, see Meurer, "De verkoop van de koperplaten van Mercator," 65.

172. *KAN*, 1:479–81 (no. 1:501).

173. *KAN*, 1:483–86 (no. 1:511).

174. On Bertius, see Leonardus Johannes Marinus Bosch, *Petrus Bertius, 1565–1629* (Meppel: Krips Repro, 1979).

Hondius atlases.¹⁷⁵ Theunisz. had not only Greek type fonts, but also Hebrew and Arabic, so from 1604 Amsterdam was well equipped to print works from the classical heritage.

In 1606, *Gerardi Mercatoris Atlas sive Cosmographicae meditationes* was published; it contained the 107 maps from the 1595 *Atlas* and 37 new maps by a variety of authors and engraved by Hondius.¹⁷⁶ Seven maps described the Iberian Peninsula, rectifying the omission from Mercator's original *Atlas*. Furthermore, regional maps of Africa (four) (fig. 44.13), Asia (eleven), and America (five) were included, so the *Atlas* could finally be considered a complete world atlas. Six new maps of European areas won a place in the atlas, and Hondius also added four new continent maps but did not remove the old ones. Petrus Montanus (Pieter van den Berg), brother-in-law of Jodocus Hondius and a teacher at the Latin school, wrote an introduction as well as the text, printed on the verso of Hondius's maps.

The *Geography* and *Gerardi Mercatoris Atlas* were published jointly by Hondius and Claesz.; both names appear on the engraved title page of the *Geography*, but copies of *Gerardi Mercatoris Atlas* have variant title pages, bearing either the imprint of Hondius or that of Claesz. separately, or both imprints jointly.¹⁷⁷ The second edition of the "Mercator-Hondius atlas" followed shortly after the first edition, in 1607/8. The title, which indicates that both enlarged descriptions and new geographical maps had been added ("*. . . ampliores descriptiones & novæ Tabulæ Geographicae acceperunt*"), is somewhat misleading, because there were only two new maps.¹⁷⁸

The first version of the *Atlas* in another modern language—French—came onto the market in 1609.¹⁷⁹ This was considered a third edition, and the *Editio quarta* appeared in 1611 with a total of 150 maps.¹⁸⁰ After the death of Jodocus Hondius in 1612, his widow and sons continued the publication of the *Atlas*. Jodocus Jr. produced four reprints of the *Editio quarta* between 1612 and 1619, each with the same 150 maps, and the last printing, to which six new maps had been added, followed in 1619.¹⁸¹

The publication of the *Atlas* was continued after 1620 by Henricus Hondius, the second son of Jodocus Sr. The numbering of the atlases was not interrupted: an *Editio quinta* appeared in 1623. Henricus must have realized, however, that consecutive numbering had been halted for a time following the fourth edition. His next edition, in French in 1628, was given the correct series number, ten, and a second printing of this *Editio decima* followed in 1630 with 164 maps.¹⁸²

During the twenty-five years following the publication of the first Mercator-Hondius atlas, the Hondius family profited from its monopoly in atlases. There was no competition once the Vrients firm stopped publishing new editions of Ortelius's *Theatrum* around 1612, and thus no



FIG. 44.13. *GVINEAE NOVA DESCRIPTIO*, ADDED TO MERCATOR'S *ATLAS* BY JODOCUS HONDIUS, 1606.

Size of the original: ca. 35 × 48.5 cm. Gerardus Mercator, *Atlas sive Cosmographicae meditationes de fabrica mundi et fabricati figura* (Amsterdam, Iuduci Hondij, 1606). Photograph courtesy of the BL (Maps C.3.c.6, fols. 321–22).

reason for the Hondius family to expand or improve their atlas. The ten successive editions of the Mercator-Hondius atlas were in only Latin or French and were barely differentiated. Under Hondius Sr., the number of maps increased by only six, while not one old map of Mercator's was replaced by a modern one until 1619. Henricus Hondius was the first to carry out a dramatic change: he put his own name on several Mercator maps in the 1628 edition. In 1630, when he was probably working with his brother-in-law Johannes Janssonius, Henricus added nine new maps. However, this expansion, to a total of 164 maps, cannot be considered separately from a new competition in the publication of atlases.

Blaeu as Competitor: The *Appendixes*

Willem Jansz. Blaeu did not enter the atlas publishing business until 1630. He had previously specialized in wall maps, globes, and pilot books, but now committed himself to competing with the Hondius-Janssonius publishing

175. H. F. Wijnman, "Jodocus Hondius en de drukker van de Amsterdamsche Ptolemaeus-uitgave van 1605," *Het Boek* 28 (1944–46): 1–49.

176. KAN, 1:62–68 (no. 1:101).

177. See R. A. Skelton's "Bibliographical Note" to the facsimile edition, *Atlas; or, A Geographick Description of the World*, Amsterdam 1636, by Gerardus Mercator, 2 vols. (Amsterdam: Theatrum Orbis Terrarum, 1968), 1:V–XXVII, and KAN, 1:61–121 (no. 1:1).

178. KAN, 1:68–74 (no. 1:102).

179. KAN, 1:98–103 (no. 1:111).

180. KAN, 1:74–79 (no. 1:103).

181. KAN, 1:80–85 (no. 1:104) and 109–15 (no. 1:113).

182. KAN, 1:85–91 (no. 1:105), 115–21 (no. 1:114), and 92–98 (no. 1:107).



FIG. 44.14. MAP OF EUROPE FROM *ATLANTIS APPENDIX*, WILLEM JANSZ. BLAEU, 1630. Size of the original: ca. 41 × 55 cm. Willem Jansz. Blaeu, *Atlantis appendix, siue pars altera, continens tab: Geographicas*

diversarum orbis regionum (Amsterdam: Guiljelmm Blaeuw, 1630). Photograph courtesy of the Governing Body of Christ Church, Oxford (Arch. Inf. B.1.10).

house for the atlas trade. The decline in sales of nautical atlases required Blaeu to tap new sources of income, and he saw the publication of a new world atlas to replace the outdated Mercator-Hondius atlas as potentially lucrative. He conceived a good plan, probably with his oldest son, Joan Blaeu, and, thanks to the acquisition of almost forty copperplates from the estate of Jodocus Hondius Jr., who died in 1629, Blaeu was able to execute this plan earlier than expected.

The relationship between Jodocus Jr. and his younger brother Henricus, who took over the production of the Mercator-Hondius atlas from him around 1620, was apparently not the best. In the 1620s, Jodocus Jr. had intended to publish an atlas that would compete with his brother's, and he had already produced almost forty maps in copper when he died prematurely.¹⁸³ Blaeu saw his chance, and he managed to acquire the copperplates be-

fore Henricus Hondius and Johannes Janssonius could do so. Blaeu published an atlas as early as 1630, with sixty maps, including thirty-seven Hondius maps, with a new masthead: *Atlantis appendix, sive pars altera* (Supplement to the Atlas, or part two) (fig. 44.14).¹⁸⁴ This atlas signified the beginning of a competition whose history is especially complicated (fig. 44.15); among other things, the titles of the various atlases are almost identical.¹⁸⁵

183. The map sheets were presumably assembled from Jodocus Hondius's stock to be displayed in the autumn of 1629 at the Frankfurt book fair as a continuation of the great Mercator atlas. For a copy with the title page of 1630, see London, Christie's (cat. 5062, no. 148); KAN, 1:125–27 (no. 1:201 [= 2:001]).

184. KAN, 2:31–34 (no. 2:011).

185. Van der Krogt, "Commercial Cartography," 98–104, and MCN, 4:22–25.

MERCATOR-HONDIUS-JANSSONIUS

BLAEU

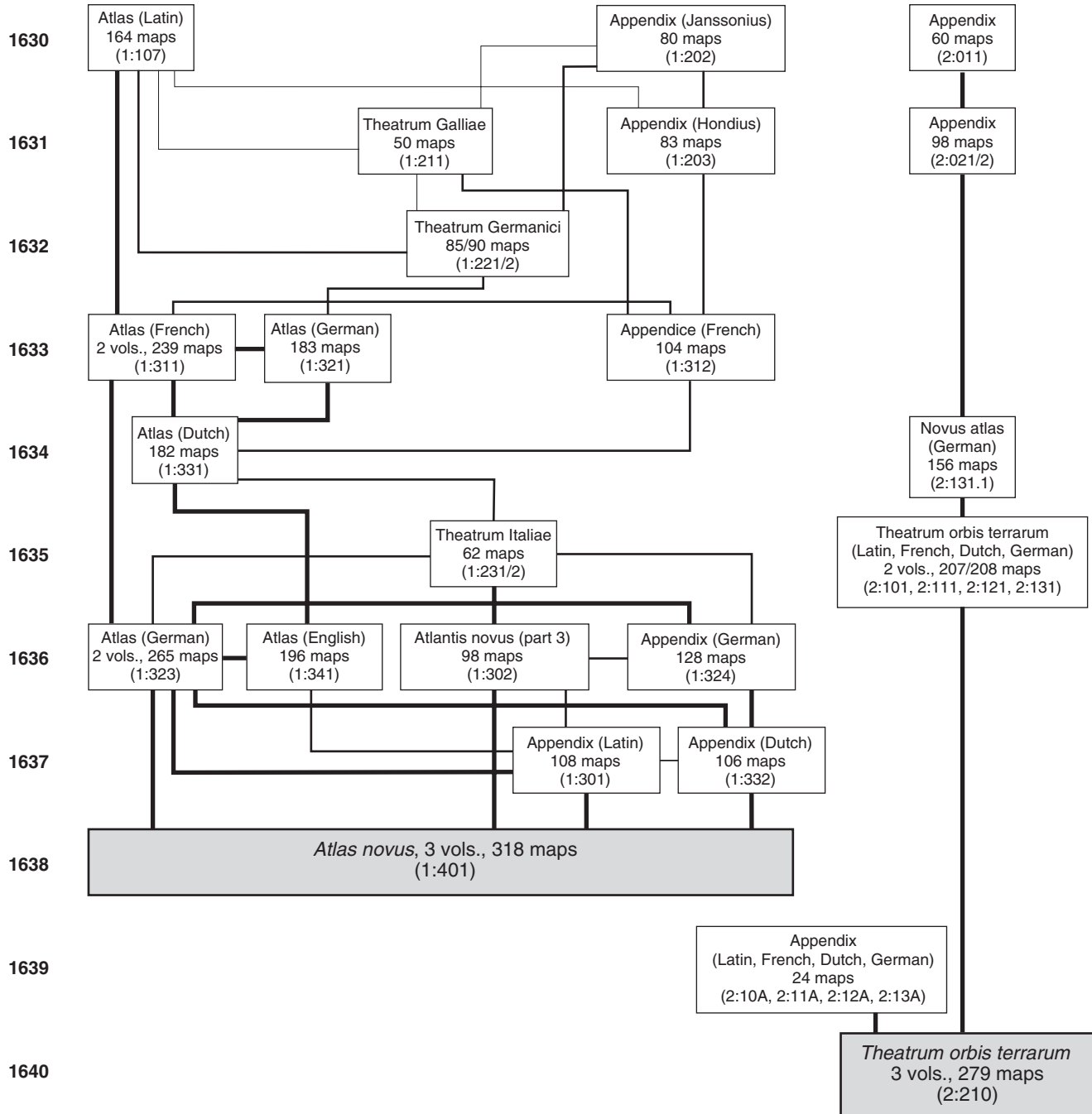


FIG. 44.15. OVERVIEW OF ATLAS PRODUCTION BETWEEN 1630 AND 1640. This figure shows a simplified scheme of atlas production between 1630 and 1640. To the left are atlases published by Hondius and Janssonius; to the right are those by Blaeu. Relationships between the different editions are indicated by a line: a thick line indicates that the editions have a large number of maps in common; thinner lines

indicate that fewer maps are the same. The volume and page number in parentheses refers to KAN. Based on Peter van der Krogt, "Commercial Cartography in the Netherlands, with Particular Reference to Atlas Production (16th–18th Centuries)," in *La cartografia dels Països Baixos* (Barcelona: Institut Cartogràfic de Catalunya, 1995), 71–140, esp. 100, and KAN, vols. 1 and 2.

Although it must have been a tremendous blow for Hondius and Janssonius when Blaeu entered into competition with them using Hondius's brother's copperplates, they did not sit idly by. They published their own versions of the *Appendix* to the Mercator-Hondius atlas in 1630 and 1631 by copying the maps that Blaeu had purchased.¹⁸⁶ In 1630, Janssonius and Henricus Hondius commissioned the engravers Evert Sijmons. Hamersveldt and Salomon Rogiers to cut thirty-six new plates within eighteen months. The maps were to "be accurate and fine . . . not less in quality than the maps given to the engraver" (i.e., the Hondius maps, sold to Blaeu).¹⁸⁷ In addition to the *Appendix*, Janssonius launched a completely new atlas in three parts: *Theatrum universae Galliae* (1631), *Theatrum imperii Germanici* (1632), and *Theatrum Italiae* (1635).¹⁸⁸

One year after publishing his first *Appendix*, Blaeu published an expanded supplement: *Appendix Theatri A. Ortelii et Atlantis G. Mercatoris* (1631), in two editions with almost one hundred maps.¹⁸⁹ The reference to Ortelius's *Theatrum orbis terrarum* was apparently intended to differentiate the atlas from the supplements by Hondius and Janssonius, who were, after all, the publishers of Mercator's *Atlas*.

In 1633, Henricus Hondius brought out two new atlases: a new edition of the Mercator-Hondius atlas, titled *Gerardi Mercatoris et I. Hondii Atlas ou Representation du monde universel*, and a German edition of the Mercator-Hondius atlas.¹⁹⁰ The new maps also appeared in an expanded French supplement titled *L'appendice de l'Atlas de Gerard Mercator et Iudocus Hondius*.¹⁹¹ A Dutch edition followed in 1634 bearing Janssonius's masthead and a greater number of maps, and an English-language edition appeared in 1636 under a masthead that combined those of Hondius and Janssonius.¹⁹²

Meanwhile, in 1634 Blaeu expanded his "supplement" into a genuinely new atlas, with 150 to 160 maps: the *Novus atlas*, of which only a German edition is known.¹⁹³ A supplement with forty-nine maps was added to this atlas in 1635.¹⁹⁴ With the more than 200 maps that Blaeu had in his possession at that time, he compiled a two-part atlas. Dutch, French, and Latin editions were also prepared that same year, respectively titled *Toonneel des Aerdriicx*, *Le Theatre du monde*, and *Theatrum orbis terrarum*.¹⁹⁵ With this two-part atlas in four languages Blaeu gained a significant advantage in the race for atlas hegemony. Naturally, Hondius and Janssonius responded. In order to compensate in some measure for the ground they had lost to Blaeu, around 1636 they produced, in addition to the first English-language edition of the Mercator-Hondius atlas, five other atlases: a new German edition of the *Atlas*, the *Theatrum Italiae*, a German *Appendix atlantis*, a second new German edition of the *Atlas* in two parts, and—finally—the *Atlantis novi pars tertia*.¹⁹⁶

The Latin editions slowly but surely fell out of use during this period. After initially publishing their supplements in Latin, Hondius, Janssonius, and Blaeu published their atlases mainly in German, French, and Dutch. The predecessors of the *Novus atlas* had all been written in German. The first German edition of the Mercator-Hondius atlas had appeared in 1633, followed in 1634 by the first Dutch edition and in 1636 by the first English edition. Atlases had become commonplace among the upper middle class.

The Climax: From the *Atlas novus* to the *Atlas maior*

Around 1638, both Blaeu and Hondius-Janssonius turned out multipart atlases, the *Novus atlas* and the *Atlas novus*, respectively.¹⁹⁷ Although Blaeu had published a two-part atlas with nearly two hundred maps in 1635, Hondius and Janssonius rivaled that with a three-part atlas with nearly three hundred maps in 1638. Willem Jansz. Blaeu died that same year and was succeeded by his son Joan Blaeu; meanwhile, Henricus Hondius removed himself from the map business, the responsibility for his enterprise falling entirely to Janssonius.

After 1638, both Joan Blaeu and Janssonius worked on expanding these atlases. By adding various parts and then nautical and historical sections, both had a six-part atlas before 1660.¹⁹⁸ But there was no question of a balanced

186. KAN, 1:127–32 (nos. 1:202 and 1:203).

187. M. M. Kleerkooper and Wilhelmus Petrus van Stockum, *De boekhandel te Amsterdam voornamelijk in de 17^e eeuw* (The Hague: Nijhoff, 1914–16), 1490–91, and MCN, 4:52.

188. C. Koeman, "The *Theatrum universae Galliae*, 1631: An Atlas of France by Joannes Janssonius," *Imago Mundi* 17 (1963): 62–72, and KAN, 1:135–37 (no. 1:221) and 141–43 (nos. 1:231 and 1:232).

189. KAN, 2:34–42 (nos. 2:021 and 2:022).

190. KAN, 1:149–51 (no. 1:311) and 165–74 (nos. 1:321 and 1:322).

191. KAN, 1:161–64 (no. 1:312).

192. KAN, 1:188–95 (no. 1:331) and 199–208 (no. 1:341); see note 177 for the facsimile of the English edition, *Atlas; or, A Geographick Description*.

193. KAN, 2:86–94 (no. 2:131).

194. KAN, 2:94–101 (no. 2:132).

195. KAN, 2:77–85 (no. 2:121), 53–60 (no. 2:111), and 44–51 (no. 2:101).

196. KAN, 1:138–41 (no. 1:222), 141–43 (nos. 1:231 and 1:232), 183–88 (no. 1:324), 174–83 (no. 1:323), and 149 (no. 1:302 [= 1:401.3]).

197. KAN, 2:44–51 (no. 2:10, Latin ed.), 2:53–60 (no. 2:11, French ed.), 2:77–84 (no. 2:12, Dutch ed.), and 2:86–101 (no. 2:13, German ed.).

198. Blaeu produced a third part in 1640 (KAN, 2:109–20 [no. 2:201, Latin ed.], 2:139–50 [no. 2:211, French ed.], 2:173–84 [no. 2:221, Dutch ed.], and 2:208–19 [no. 2:231, German ed.]), while a fourth part followed it in 1645 (KAN, 2:120–32 [no. 2:202, Latin ed.], 2:150–61 [no. 2:212, French ed.], 2:185–95 [no. 2:222, Dutch ed.], and 2:219–30 [no. 2:232, German ed.]). Janssonius reacted quickly, likewise with the publication of a fourth part in 1646, and, by adding a nautical atlas and a historical atlas, he created a fifth part in 1649 (KAN,

TABLE 44.1 Contents of the *Atlantes novi* by Blaeu and Janssonius

Part	By Blaeu		By Janssonius	
	Number of Maps	Content	Number of Maps	Content
1	120	1: Northern Europe and “Germania” 2: Netherlands	96	1: Northern and eastern Europe 2: “Germania”
2	92	1: France 2: Spain and non-European countries	102	1: France and Switzerland 2: Netherlands
3	62	Italy and Greece	104	1: Spain and Italy 2: Non-European countries
4	58	England and Wales	56	British Isles
5	55	Scotland and Ireland	32	Marine areas
6	17	China	61	Old World
Total maps	404		451	

Source: Based on KAN, vols. 1 and 2.

division of maps from around the world (see table 44.1). Blaeu had at least 113 maps (28 percent of his atlas) of the British Isles and 17 of China; moreover, he was opportunistic and knew that his customers were primarily interested in quantity.

At the same time that Janssonius added his historical atlas to the *Atlas novus* in 1658 as a sixth part, he also started work on the ambitious publication of an eleven-part work that appeared in Latin (*Atlas maior*) and German (*Novus atlas absolutissimus*).¹⁹⁹ The atlas was far from homogenous, had no specific text of its own, and was not produced as part of a series. Janssonius put his multivolume atlas together using existing sections of the *Atlas novus*, supplemented by other maps from his own supply or by maps from Nicolaas I Visscher. Initially these maps were bound together in ten volumes with 500 to 550 maps. After 1660, Janssonius added the *Harmonia macrocosmica*, the celestial atlas of Andreas Cellarius.²⁰⁰ Furthermore, customers could choose to extend the atlas with town atlases (500 maps in eight parts). Despite its shortcomings, Janssonius’s atlas was the only one to approach the concept Mercator had had in mind. The title of the Latin edition from 1675 tells a great deal about it: *Atlas major; sive, Cosmographia universalis adeoque orbis terrestris, maritimus, antiquus & coelestis*; it was a universal cosmography describing the terrestrial, maritime, historical, and celestial world.

Joan Blaeu also had plans for a large multivolume atlas. The completion of his six-part *Theatrum orbis terrarum* in 1655 was the beginning of a much bigger project: the complete description of earth, sea, and universe. The work was supposed to consist of a geography—subdivided into a chorography (description of lands), topography (description of places), and hydrography (descrip-

tion of the oceans)—and a uranography (description of the universe). Blaeu had already started with the topography: *Flandria illustrata* by Antonius Sanderus (Antoon Sanders) appeared between 1641 and 1646, *Rerum per octennium in Brasilia gestarum historia* by Caspar van Baerle appeared in 1647, and town atlases of the Low Countries appeared in 1649. Meanwhile, Blaeu had also collected a lot of material for a nautical atlas, but it was never reworked for publication.

As a result of Janssonius’s *Novus atlas absolutissimus*, Blaeu needed to set his project in motion. The publication of his *Atlas maior sive Cosmographia Blaviana* in 1662 provided Janssonius with some heavy competition. Blaeu’s multipart atlas was published between 1662 and

1:307–10 [no. 1:414.4I] and 241–46 [no. 1:404]). It was then Blaeu’s turn to publish a fifth part in 1654 (KAN, 2:132–35 [no. 2:203, Latin ed.], 2:161–66 [no. 2:213, French ed.], and 2:195–202 [no. 2:223, Dutch ed.]). He finally completed his six-part atlas in 1655 with the *Atlas Sinensis* by Martinus Martini (KAN, 2:298–302 [nos. 2:501–2:503, Latin eds.], 2:305–6 [no. 2:511, French ed.], 2:309–10 [no. 2:521, Dutch ed.], 2:311–13 [no. 2:531, German ed.], and 2:314–15 [no. 2:541, Spanish ed.]; a facsimile is Joan Blaeu, *Novus atlas Sinensis 1655: Faksimiles nach der Prachtausgabe der Herzog August Bibliothek Wolfenbüttel*, intro. Yorck Alexander Haase [Stuttgart: Müller und Schindler, 1974]), while Janssonius had six parts together in 1657 with his *Orbis antiquus* (KAN, 1:247–55 [no. 1:405]).

199. KAN, 1:255–70 (no. 1:406) and 395–404 (no. 1:428). For a facsimile of the second part of the ten-part German edition, see Johannes Janssonius, *Novus Atlas Absolutissimus, das ist, Generale Welt-Beschreibung mit allerley schönen und neuen Land-Carten gezieret* (Munich: Battenberg, 1977).

200. KAN, 1:513–16 (no. 1:801). On Cellarius and his celestial atlas, see R. H. van Gent, “De hemelatlant van Andreas Cellarius: Het meesterwerk van een vergeten Hollandse kosmograaf,” *Caert-Thresoor* 19 (2000): 9–25, and Andreas Cellarius, *The Finest Atlas of the Heavens*, intro. and texts R. H. van Gent (Hong Kong: Taschen, 2006).

TABLE 44.2 Blaeu's *Atlas maior*

Year	Edition	Number of Volumes	Number of Maps
1662–65	Latin	11	593
1663–67	French	12	596
1664–65	Dutch	9	600
1667	German	9	612
1659–72	Spanish	10	544

Source: Based on KAN, 2:316–458.

1672 in at least five languages, with a total of 544 to 612 maps (table 44.2).²⁰¹

Blaeu's *Atlas maior* certainly had no great scholarly value. The manner in which it was compiled makes critical analysis of its contents almost impossible. Rather, the success of the atlas was due to its superior typography; its beautiful, hand-colored maps; and especially its unparalleled reception. The *Atlas maior* quickly became a fiercely coveted status symbol among wealthy patricians (fig. 44.16). It cost 350 guilders in black and white; colored copies cost 450 guilders. About 1660, an assistant in the book trade earned about 2 guilders a week. Map colorists were paid an average of 3 stuivers a piece (1 guilder = 20 stuivers). The rent of a bookshop in Amsterdam's shopping center was anywhere from 400 to 700 guilders a year. During the period from 1660 to 1680, prices went up, but they declined after 1680.²⁰² Less than a hundred years after the publication of Ortelius's *Theatrum orbis terrarum*, atlases had already become so commonplace that the publication of a very expensive twelve-part work with six hundred maps could become a commercial success. Nonetheless, the *atlantes majores* heralded the end of large-scale atlas production and of the period of Dutch dominance of commercial cartography. The two rival publishers died in rapid succession, Johannes Janssonius in 1664 and Joan Blaeu in 1673. A large fire in Blaeu's workshop on 23 February 1672 had, in the meantime, destroyed much of his print work and a number of copperplates.

OTHER ATLASES

In the sixteenth and seventeenth centuries, commercial cartography in the Low Countries owed its fame primarily to the publication of world atlases in folio format. Somewhat less important were the other types of atlases that were current at that time. Pocket atlases met the cartographic needs of travelers or less affluent citizens. Town atlases were likewise popular with travel enthusiasts. Less comprehensive was the production of regional atlases, historical atlases, and celestial atlases. Nonetheless, they



FIG. 44.16. CARVED WOODEN CABINET DESIGNED FOR BLAEU'S *ATLAS MAIOR*.

Photograph courtesy of the Universiteitsbibliotheek Amsterdam (Kzl).

contributed to the varied supply of commercial atlases available to consumers.

Pocket Atlases

The great demand for Ortelius's *Theatrum orbis terrarum* made it very expensive. In 1570, the price of a copy varied from 6 to 16 guilders, depending on the quality of pa-

201. KAN, 2:322–56 (nos. 2:601–3, Latin ed.), 2:357–82 (nos. 2:611–12, French ed.), 2:384–406 (no. 2:621, Dutch ed.), 2:407–23 (no. 2:631, German ed.), and 2:428–58 (nos. 2:641–2:642, Spanish eds.). Blaeu actually started on the Spanish edition of the *Atlas maior* earlier than the Latin edition of 1662, although it was a long time before he was able to finish it. It is assumed that the fire in Blaeu's printshop in 1672 thwarted this plan. Nonetheless, there are indications that there was a complete Spanish edition of the *Atlas maior*, in fifteen parts, at the Spanish court in 1672. There are also two editions of the Spanish *Maior*: the *Nuevo atlas*, printed before the fire of 1672, and the *Atlas mayor*, put together after the fire from material that was still available. See Anton Berkhemer, "De Spaanse *Atlas mayor* van Blaeu: Nieuwe gegevens," *Caert-Thresoor* 16 (1997): 71–76, and H. de la Fontaine Verwey, "The 'Spanish Blaeu,'" *Quaerendo* 11 (1981): 83–94.

202. Koeman, *Blaeu and His Grand Atlas*, 47.



FIG. 44.17. MAP OF SALZBURG IN THE SPIEGHEL. Pieter Heyns, *Spieghel der werelt* (Antwerp: Christoffel Plantyn . . . voor Philips Galle, 1577), H2. Photograph courtesy of the

Rare Books Division, New York Public Library, Astor, Lenox and Tilden Foundations, New York (*KB 1577).

per and binding and on whether it was illuminated. How expensive it was is clear from the fact that in that period a printer's annual salary was 100 to 150 guilders. Thus, the *Theatrum* was purchased only by members of the upper middle class or scholars and was not within the reach of the common man.

With the publication of the *Epitome* (Extract),²⁰³ a reduced edition of the *Theatrum orbis terrarum*, Ortelius provided affordable atlases. The idea actually originated with the engraver Filips Galle, who reduced and generalized the seventy maps from the *Theatrum* to about eight by eleven centimeters. The text was written not in Latin but rather in the vernacular and—in order to make it simpler—in rhyme. Pieter Heyns, who translated the Latin text of the *Theatrum* into Dutch in 1571, wrote the rhyming text for the *Epitome*. Ortelius's name is not men-

tioned in the pocket atlas, but it is likely that he collaborated on the volume, for Galle and Heyns mention a “colloquy” in their introduction.

The pocket atlas first appeared in 1577; it was titled *Spieghel der werelt* (fig. 44.17).²⁰⁴ The 1588 edition

203. The reduced versions as a genre have been referred to as the *Epitomes*, although the word is not always part of the title; see MCN, 2:116–20. There is a facsimile of the 1589 Latin edition: Filips Galle, *Epitome Theatri Orteliani: Præcipuarum orbis regionum delineationes, minoribus tabulis expressas, breuioribusque declarationibus illustratas, continens*, intro. H. A. M. van der Heijden (Weesp: Robas Facsimile Fonds, 1996).

204. For a summary of the various editions of the *Epitome*, see Van der Krogt, “Editions of Ortelius’ *Theatrum Orbis Terrarum* and *Epitome*,” 381, and KAN, 3:268–372 (nos. 331:01–33A:32).

was the first to use the more convenient title *Epitome*.²⁰⁵ The atlas was a great success: a French edition was published in 1579 (*Le miroir du monde*) and a Latin one in 1585 (*Theatri orbis terrarum enchiridion*).²⁰⁶ Moreover, it had numerous reprintings and imitations as a result of its success.

Pieter Heyns had to move to the northern Low Countries in 1588, and, together with his son Zacharias Heyns, he reprinted the *Spiegel der werelt* in Amsterdam in 1596 and a new *Le miroir du monde* in 1598, using somewhat larger woodcut maps (ca. 13.5 × 17 cm).²⁰⁷ Johannes van Keerbergen published in Antwerp a competing edition for which Michel Coignet wrote a new text and Ambrosius and Ferdinand Arsenius engraved the 133 new maps.²⁰⁸ Four editions appeared in four different languages between 1601 and 1604.²⁰⁹

Around 1601, Joan Baptista Vrients acquired the publishing rights and plates for Galle's *Epitome* and, several years later, those for Van Keerbergen's version as well. Galle's plates and an English text were printed by Henricus Swingenius for the London bookseller John Norton in 1602; the new and improved version of the *Epitome* produced by Coignet and Van Keerbergen in 1601 was printed for the London bookseller James Shaw in 1603.²¹⁰ These two little books were the earliest world atlases with an English text. Apparently the copperplates of Van Keerbergen appealed to Vrients more than did those of Galle, for he made no further use of Galle's plates after 1602. Vrients brought the last edition onto the market in 1612.²¹¹

One of the earliest world atlases in the United Provinces (the first was Heyn's reprinting of the *Spiegel der werelt* in 1596) was published in Middelburg by Barent Langenes, who produced the pocket atlas *Caert-thresoor* in 1598 (fig. 44.18).²¹² Pieter van den Keere signed most of the 169 engraved maps, but Jodocus Hondius made a substantial contribution to the publication as well. The text, partially cast in rhyme, was likely written by Langenes.

In order to guarantee himself sufficient sales, Langenes worked with the Amsterdam publisher Cornelis Claesz., and the title page of the *Caert-thresoor* thus announced that copies "are on sale at Cornelis Claesz." It is sometimes suggested that Claesz. initiated the miniature atlas and had already published a first edition in 1597.²¹³ In that case, Langenes would have been no more than a co-publisher. However, no edition from 1597 has yet been discovered. It is more plausible that Cornelis Claesz. took over publication in 1599, for the name Langenes no longer appeared on the title page of that year's edition, and the same was probably true for the French translation, *Thresor de chartes*, of about 1600.²¹⁴ The Latin edition was provided with a completely new text, written by Petrus Bertius: *P. Bertii Tabularum geographicarum contrac-*

tarum libri quatuor.²¹⁵ In this last edition, Claesz. entered into a cooperative agreement with the Arnhem publisher Jan Jansz., father of the well-known Johannes Janssonius, and all references to Langenes had disappeared from the *Caert-thresoor* within two years of the first edition. But the public had little use for Bertius's Latin text, and in 1609 Claesz. produced a new Dutch-language edition, the text of which was a revised version by Jacobus Viverius of the 1598 original and supplemented by Bertius's scholarly geographical description. This edition was given a new title: *Hand-boeck of cort begriip der caerten*.²¹⁶

Naturally, the success of the popular Amsterdam pocket atlases around 1600 did not escape the notice of Jodocus Hondius. In 1607, Hondius had the maps of his *Gerardi Mercatoris atlas* reduced and republished as the *Atlas minor* with 152 maps.²¹⁷ The work was also sold by Cornelis Claesz. in Amsterdam and by Jan Jansz. in Arnhem. Both must have seen the *Atlas minor* as a welcome addition to the atlas market, as opposed to a competing publication. During the following two years, a French edition and a German edition were published, both with the title *Atlas minor*. Numerous preserved copies attest to the success of this pocket atlas.²¹⁸

After the death of Cornelis Claesz, the copperplates for Langenes's *Caert-thresoor* passed into the hands of his successor, Hendrick Laurensz., who published the editions of 1609 and 1612. Claes Jansz. Visscher acquired the plates later and used them to print a new edition in

205. KAN, 3:293–96 (no. 332:01).

206. KAN, 3:280–83 (no. 331:11) and 3:288–91 (no. 331:21).

207. KAN, 3:278–79 (no. 331:03) and 3:359–62 (no. 334:01).

There is a facsimile of this atlas: Zacharias Heyns, *Le miroir du monde*, intro. Jan W. H. Werner (Weesp: Robas BV, 1994).

208. Ad Meskens, *Familia universalis, Coignet: Een familie tussen wetenschap en kunst*, exhibition catalog (Antwerp: Koninklijk Museum voor Schone Kunsten, 1998).

209. KAN, 3:330–55 (no. 333).

210. KAN, 3:326–29 (no. 332:31) and 3:348–51 (no. 333:31).

211. KAN, 3:343–46 (no. 333:21).

212. KAN, 3:376–81 (no. 341:01). There is a facsimile of the 1598 edition: Barent Langenes, *Caert-Thresoor*, intro. Jan W. H. Werner (Weesp: Robas BV, [1998]).

213. C. P. Burger, "Het Caert-Thresoor," *Het Boek* 18 (1929): 289–304 and 321–44, and KAN, 3:374.

214. KAN, 3:396–401 (no. 341:11).

215. KAN, 3:409–14 (no. 341:51).

216. KAN, 3:389–95 (no. 341:03).

217. The atlas measured about 17 by 22 centimeters. See KAN, 3:466–71 (no. 351:01), and Adriaan Plak, "The Editions of the *Atlas Minor* until 1628," in *Theatrum Orbis Librorum: Liber Amicorum Presented to Nico Israel on the Occasion of His Seventieth Birthday*, ed. Ton Croiset van Uchelen, Koert van der Horst, and Günter Schilder (Utrecht: HES, 1989), 57–77.

218. The interest in pocket atlases is perhaps best illustrated by the publication of many editions in various languages; see Van der Krogt, "Commercial Cartography," 108–12.



FIG. 44.18. TITLE PAGE FROM LANGENES'S CAERT-THRESOOR. Size of the original: ca. 11 × 16 cm. Barent Langenes, *Caert-*

thresoor, inhoudende de tafelen des gantsche werelts landen (Middelburg, 1598). Photograph courtesy of the BL (Maps C.39.a.2).

1649.²¹⁹ Although Jodocus Hondius Jr. had little competition to fear after 1612, he also demonstrated little interest in pocket atlases: after publishing the Latin editions of 1620 and 1621, he sold the plates to the London publishers Michael Sparke and Samuel Cartwright, who published the *Historia mundi* or *Mercatoris atlas* in 1635.²²⁰

Only two more pocket atlases appeared in the second quarter of the seventeenth century; the first was by Johannes Janssonius and had a new, enlarged title and new maps. Janssonius must have regretted that he had not bought the copperplates for the *Atlas minor* from his brother-in-law. He had to have a completely new set of maps engraved by Pieter van den Keere and Abraham Goos. The 146 maps were ready in 1628, and Janssonius immediately brought Latin and French editions of his new *Atlas minor* onto the market.²²¹ The atlas was a complete success: after only two years, a new French edition was needed, and a Dutch translation appeared that same year; a German edition followed the very next year.

The second pocket atlas was produced by a newcomer to atlas production, Jan Evertsz. Cloppenburg, who en-

gaged Pieter van den Keere to engrave new maps for his world atlas. This atlas appeared in 1630 under the title *Gerardi Mercatoris Atlas . . . studio Iudoci Hondij*.²²² The Hondius imprint was clearly added to stimulate sales; no one knew the name Cloppenburg, and the publishers of the original—Hondius father and son—were dead. The engraved title page was also an imitation of that in the Mercator-Hondius atlas, and the text, with a Latin title, was in French. A Latin edition followed in 1632.

Town Atlases

During the sixteenth century, businessmen, students, and tourists made their way from one place to another in ever-increasing numbers, particularly to cities, which were the centers of business and social life. It is thus no surprise

219. KAN, 3:428–34 (no. 341:54).

220. KAN, 3:504–12 (no. 351:31).

221. KAN, 3:513–71 (no. 352).

222. KAN, 3:573–607 (no. 353).

that, two years after the appearance of the first modern world atlas, work began on a publication that attempted to describe and illustrate the world's towns in the same systematic way as the atlases had described larger areas.

This work, by Georg Braun and Frans Hogenberg, which eventually amounted to six parts, is generally known as the *Civitates orbis terrarum*. This title, however, refers only to the first part, which was published in 1572 by Filips Galle in Antwerp and Cologne. Although the *Civitates orbis terrarum* was printed in Cologne, its Flemish engraving style places it in the cartographic tradition of the southern Low Countries. Hogenberg, one of the engravers, also engraved the maps in Ortelius's *Theatrum orbis terrarum*, and the second engraver, Simon Novellanus, was educated in Mechelen before he took refuge in Cologne. The canon Georg Braun (or Bruin) was no doubt responsible for the compilation and the text of the town atlas.²²³

The preparations for the *Civitates orbis terrarum* must have overlapped with those for the *Theatrum orbis terrarum* by two or three years. Hogenberg was busy with both works at that time, and, given his close relationship to Ortelius, it is difficult to imagine that the idea for the atlas originated with Braun. Braun could have met Ortelius as well as Hogenberg during his visit to Antwerp in 1566–68, and it is possible that plans for the *Civitates orbis terrarum* ripened in their association during that time. Indeed, contemporary sources view the two atlases as complementary.

Only one part of the *Civitates orbis terrarum* was planned for publication, but good sales encouraged the compilers to publish a second part and subsequently to expand both parts. In the introduction to the second part, Braun asked readers whose towns were not represented to send an illustration so that they could be included. He received so much material that a third part was possible, followed by a fourth and a fifth part (1588). It was almost another thirty years until the sixth and last part appeared in 1617. Editions with German and French texts were published to supplement the edition with Latin texts.

The *Civitates orbis terrarum* comprises 363 plans, views, and profiles of towns in Europe, Africa, Asia, and America (Mexico City and Cuzco) (table 44.3).²²⁴ The work was not as systematically constructed as Ortelius's *Theatrum*. The inclusion of a town map was dependent on its availability and the desire to fill the work with plans of as many towns as possible. This is clear from the speed with which the randomly delivered town plans were taken up and from the arbitrary proliferation of plans of towns from various countries through the different parts of the atlas. The German and Dutch cities, specifically, are over-represented,²²⁵ and a disproportionately large number of designs are borrowed from two well-known topographi-

TABLE 44.3 Overview of the *Civitates orbis terrarum* by Braun and Hogenberg

Part	Title	Year	Number of Maps
1	<i>Civitates orbis terrarum</i>	1572	58 (59)
2	<i>De præcipiis, totius universi urbibus liber secundus</i>	[1575]	59
3	<i>Urbium præcipuarum totius mundi liber tertius</i>	1581	59
4	<i>Liber quartus urbium præcipuarum totius mundi</i>	[Ca. 1588]	59
5	<i>Urbium præcipuarum mundi theatrum quintum</i>	[1596]	69
6	<i>Theatri præcipuarum totius mundi urbium liber sextus</i>	1617	58
	Total		363

Source: KAN, vol. 4.

cal artists: Georg Hoefnagel (63 town views, 28 of which appear in part 5)²²⁶ and Jacob van Deventer (48 town plans in parts 3 and 4). Ortelius, Sebastian Münster, and Heinrich von Rantzau (1526–98), governor of Schleswig-Holstein, also provided original maps.²²⁷ The engraving of the *Civitates orbis terrarum* was continued after the death of Frans Hogenberg by his son Abraham Hogenberg. Abraham printed a large number of editions during the last quarter of the sixteenth century and the first half of the seventeenth. He also added the sixth part in 1617.

There was no competition for Braun and Hogenberg's town atlas until 1649, when Joan Blaeu produced his town atlas in folio format. Following Abraham Hogenberg's death in 1653, Johannes Janssonius acquired the

223. For a biographical summary of Georg Braun, see Meurer, *Atlantes Colonienses*, 84–87, and E. Wiepen, "Bartholomäus Bruyn der Ältere und Georg Braun," *Jahrbuch des Kölnischen Geschichtsverein* 3 (1916): 95–153.

224. Earlier town books of a regional character had been edited by Guillaume Guéroult with twenty plates (printed in Lyons, 1552 and 1553) and by Guilio Ballino in *De disegni delle piu illustri citta & fortresse del mondo* with fifty-one plates (printed in Venice by Bolognino Zaltieri, 1569). See Mireille Pastoureau, *Les atlas français XVI^e–XVII^e siècles: Répertoire bibliographique et étude* (Paris: Bibliothèque Nationale, Département des Cartes et Plans, 1984), 226.

225. Friedrich Bachmann, *Die alten Städtebilder: Ein Verzeichnis der graphischen Ortsansichten von Schedel bis Merian* (Leipzig: Karl W. Hiersemann, 1939; reprinted Stuttgart: A. Hiersemann, 1965).

226. On Hoefnagel, see Lucia Nuti, "The Mapped Views by Georg Hoefnagel: The Merchant's Eye, the Humanist's Eye," *Word & Image* 4 (1988): 545–70, and A. E. Popham, "Georg Hoefnagel and the Civitates Orbis Terrarum," *Maso Finiguerra* 1 (1936): 183–201.

227. See R. A. Skelton, "Introduction," in *Civitates orbis terrarum, 1572–1618*, by Georg Braun and Frans Hogenberg, 3 vols. (Amsterdam: Theatrum Orbis Terrarum, 1965), 1:VII–XLVI.

363 copperplates, and in 1657, the plates were reproduced in Janssonius's town atlas.

In 1641, part 1 of the *Flandria illustrata*, a large topographical work with town views, plats, maps, and topographical drawings of Flanders, appeared in Amsterdam.²²⁸ The texts for this multipart work were written by the canon and historian Antonius Sanderus. Although initial discussions took place between Sanderus and Henricus Hondius in 1632, the slow work of the surveyors and illustrators, the laborious editing, and Hondius's own critical sense caused a delay of almost ten years before this first part was finished. Even before its publication, however, Hondius had yielded the rights to Joan Blaeu. Given the fact that in Calvinist Holland the *Flandria illustrata* might be considered objectionable because of its Roman Catholic contents, Blaeu used a false imprint: "Coloniae Agrippinae, Corn. ab Egmond" (Cologne at Cornelis van Egmond). Blaeu published the second part, the *Flandria subalterna*, in 1644. Two additional parts were planned, the *Flandria gallicana* and a supplement. The *Flandria gallicana* was published in part in 1644/45 and reprinted in 1663, but Sanderus's death in 1664 kept the *Flandria illustrata* from being completed. Sanderus's principal work would have included almost six hundred maps and prints. The first two parts that did appear were eventually translated into Dutch by Christiaan van Lom and titled *Verheerlykt Vlaendre* (The Hague, 1732).

In 1648, the Treaty of Münster finally ended the Eighty Years War with Spain. The same year marked the culmination of the book and map production of Joan Blaeu. In his preface to the reader in his town atlas of the United Provinces, Blaeu exclaimed that "peace, believed to be in exile, was, against everyone's hope and expectation, happily restored and founded on solid pillars." In the Latin edition, the preface ends as follows: "From my presses, on the very day of the proclamation of the peace between the king of Spain and the United Provinces in all the districts of this country"; that day was 5 June 1648.²²⁹

Of all the Blaeu atlases, the town atlases of the Low Countries are held in the highest esteem in the Netherlands. This is due not only to their very fine production, but to the fact that their composition was tied to the struggle for independence from Spain. Bound up with the most dramatic and heroic period of the shaping of the Dutch state, they depict the proud and industrious cities of the Northern Provinces in their full splendor (plate 51). The political, economic, and cultural entity of the new republic of the Seven United Provinces was represented in the pictures of the towns and was integrated by the atlas. The first edition, in two volumes, had 220 town plans: 110 in volume 1, on the Republic of the Seven United Provinces, and 110 in volume 2, on the Spanish Netherlands.²³⁰

In the last decade of the war, several towns and fortresses in the north had been successfully besieged by

the army of the Republic. Some years before the conclusion of the hostilities, Blaeu had to decide whether to place these disputed towns in the first or the second volume of his atlas. The first edition of volume 1 (1649) reflected the situation of the last years of the war. In the second edition, produced after 1649, twenty-six plans were removed from the volume on the Spanish Netherlands and placed in that on the Republic, while five plans from the volume on the Republic were transferred to that on the Spanish Netherlands. As a result, the second edition of the work has an uneven number of plans in each volume: 134 in volume 1, but just 92 in volume 2. Blaeu also brought out a Dutch edition, *Toonneel der Steden*, about 1652.²³¹

The production of the town plans was a survey project that took several years, privately undertaken by Blaeu. Until then, little attention had been given to his approach. In his preface to the reader, Blaeu explained his method of collecting models for the engravings of the plans: seeking the collaboration of the magistrates of the towns by asking them to provide him with the town's most up-to-date plan. When a modern map of a town was not available, Blaeu asked the town's magistrate to revise an earlier plan (for example, the plan of Hoorn by Theodorus Velius from 1615).²³² Some letters (dated between 1640

228. See G. Cautlet, *De gegraveerde, onuitgegeven en verloren geraakte teekeningen voor Sanderus' "Flandria Illustrata"* (Amsterdam, 1908; republished Antwerp: Buschmann, 1980), and A. D. van Over-schelde, "Leven en werken van kanunnik Antoon Sanders die zich Sanderus noemde," *Vlaamse Toeristische Bibliotheek* 27 (1964): 1–16. There is a facsimile edition: Antonius Sanderus, *Flandria illustrata; sive, Descriptio comitatus istius per totum terrar[um] orbem celeberrimi, III tomis absoluta*, 2 vols. (Tiel: Veys, 1973).

229. Joan Blaeu, *Toonneel der steden van de vereenighde Nederlanden met hare beschrijvingen (Holland en West Vriesland/Utrecht)*, intro. Bert van 't Hoff (Amsterdam: Elsevier, 1966), 5; this book accompanies the facsimile edition of the forty-four town plans of Holland, West Friesland, and Utrecht.

230. Peter van der Krogt, "De vrede van Munster en de atlaskartografie," *Kartografisch Tijdschrift* 22, no. 4 (1996): 30–36, esp. 35; KAN, 1:295–331; and Peter van der Krogt, "Dutch Atlas Cartography and the Peace of Munster," in *La Paz de Münster/The Peace of Munster, 1648: Actas del Congreso de Commemoración organizado por la Katholieke Universiteit Nijmegen, Nijmegen-Cleve 28–30. VIII. 1996*, ed. Hugo de Schepper, Christian Tümpel, and J. J. V. M. de Vet (Barcelona: Idea Books, 2000), 113–26.

231. The Latin titles are, for volume 1, *Novum ac magnum theatrum urbium Belgicae liberae ac foederatae*, and for volume 2, *Novum ac magnum theatrum urbium Belgicae regiae*. The volumes of the Dutch edition are titled *Toonneel der steden van de Vereenighde Nederlanden* and *Toonneel der steden van 's Konings Nederlanden*, respectively; see Blaeu, *Toonneel der steden*. See also KAN, vol. 4 (forthcoming).

232. There is also an example in Hasselt, Stadsarchief. On 24 April 1649, Blaeu sent a proof copy of the town plan of Hasselt, with the text, for approval to the magistrate of the town with the request that he report any amendments. In the Resolution Book of Burgomasters of Gouda, dated 17 May 1649, we read that authorization was given to Joan Blaeu to survey the town at the expense of the municipality.

and 1648) regarding the supply of up-to-date material and describing the editorial procedure are preserved in municipal archives. A letter to Blaeu regarding preparations for a town plan of Schoonhoven from the town's secretary contains a description of the process of revising the town's ground plan and view:

Some weeks ago I sent you some copies of a plan of Schoonhoven, together with my request to you to send me three or four prints of the town, drawn in perspective along the river Lek. As I have not yet received this material, I was instructed by the Burgomasters to ask for it, in order that, when in our possession, we could correct the errors it contains. We want to do the same on the town plan, of which you have sent me three copies, wherein several details must be changed because they are not correct. The gentlemen burgomasters have spent about a hundred and fifty guilders to improve the drawing of the plan as well as of the view. We are now waiting for the second plan of Schoonhoven, seen in perspective along the river, to correct the errors and to add detail. As a recommendation, I am sending you a smoked salmon. Herewith, good friend I commend you, together with your wife and family in the Lord's protection.

At Schoonhoven, the 27th August 1648.

Your good friend Jan van Diepenheym.²³³

The publication of the town atlases of the Netherlands was only the beginning of a much greater project: the description of the towns of the world. Blaeu introduced this project in 1649 in the foreword to the town atlas of the Netherlands:

My plan is, dear reader, to build a theater on which I will show the images and descriptions of the towns of the world. I suppose that you will agree with me that it will be a heavy job, of more than general labour, endless costs, and during a man's lifetime hard to complete. However, I will begin with it and with indefatigable industry continue as far as possible, not only with this, but also with adorning and extending our Atlas (of which already four parts are published and the fifth is in print), until the end of my years, which I always will try to spend for the common wealth.²³⁴

He then explained that the first part of this project would be the two volumes devoted to the Netherlands—not only because it is his homeland and the area of which he had the best knowledge, but also because it was the theater of the most important historical events of his lifetime (here he referred to the Treaty of Westphalia, 1648). Immediately following the volumes on the Netherlands, the second part—also in two volumes—would focus on Italy, which Blaeu loved after spending a few years there in his youth. The third part would cover the towns of Spain, including those in the East and West Indies (three volumes). Blaeu identified France as the subject for the

fourth part (several volumes), followed by the English and Scottish towns, of which he said several were already finished (a mysterious remark because no town plans for England and Scotland by Blaeu are known). The British towns would be followed by the towns of the Nordic countries (Sweden, Denmark, and Norway) and the countries farther east, such as those of Poland, Muscovy, and Greece (one or more volumes). Germany would not be included because Matthäus Merian had already covered it, and, moreover, the omission would save time.²³⁵

For ten years, nothing more was heard about Blaeu's publication of descriptions of the towns of the world. In the late 1650s, however, his plans for the second part, the town atlas of Italy, took form, with the project growing much larger than the anticipated two volumes. Although he was engaged in the enormous task of preparing the Latin *Atlas maior* in 1662, Blaeu simultaneously took on the Italian town atlases project of almost the same size. In 1663 he found the capacity in his print shop to publish two and a half volumes of the town atlas of Italy, titled *Theatrum civitatum et admirandorum Italiae*.

In the foreword to the *Theatrum*, Blaeu acknowledged its expansion into a multivolume atlas. The *Theatrum* was to consist of two parts, each with five atlases. Part 1, *Civitates Italiae*, would have the towns of Italy, divided by region, and part 2, *Admiranda urbis Romæ*, would have different types of monuments. Although both the first and second parts would have five atlases, some of the atlases would be multivolume as well; the final work probably would have been twelve to fifteen volumes.

The *Theatrum civitatum et admirandorum Italiae* needed an enormous number of images and texts. Blaeu intended to call on the many people he had met during his travels to Italy in his youth. In addition, around 1660, when the plans for the Italian town atlas were set, Blaeu sent his twenty-three-year old son Pieter to Italy to renew his old contacts and to collect material. Among the

233. Schoonhoven, Streekarchief Krimpenerwaard.

234. The foreword is dated 1648 in the Latin edition; this translation is after the undated foreword in the Dutch edition; see Blaeu, *Toonneel der steden*.

235. The mention of Merian as a strong competitor is strange given that Blaeu does not mention Braun and Hogenberg's *Civitates orbis terrarum*, which was still being published, and, given that Merian's publication was completely different from the town atlases Blaeu published. We can assume that Joan Blaeu already knew that his Amsterdam competitor Johannes Janssonius was acquiring the copperplates of the Braun and Hogenberg atlas. It has been assumed that Janssonius bought these plates in 1653, after the death of Abraham Hogenberg. However, during research into the different editions of the Braun and Hogenberg atlas, I have found indications that it was published in Amsterdam as early as the 1640s. Blaeu's foreword is dated 1648, and the fact that he does not mention Braun and Hogenberg supports the hypothesis that Janssonius had the Braun and Hogenberg plates much earlier than previously thought.

TABLE 44.4 The Town Atlases of Italy by Blaeu

Title	Total Number of Plates (Number of Maps)
<i>Theatrum civitatum et admirandorum Italiae</i>	
<i>Civitates Status Ecclesiastici</i>	69 (60)
<i>Antiquitates et admiranda urbis Romæ</i>	44 (6)
<i>Theatrum civitatum . . . Neapolis et Siciliae Regnorum</i>	33 (32)
<i>Theatrum statuum regiae celsitudinis Sabaudiae ducis, Pedemontii . . .</i>	
. . . <i>Exhibens Pedemontium</i>	69 (55)
. . . <i>Illustrans Sabaudiam</i>	71 (60)

Source: KAN, vol. 4.

sources listed by Joan Blaeu in his foreword was his major contributor, Italian philosopher and lawyer Carlo Emanuele Vizzani. “I would like you to know,” Blaeu wrote, “that some learned men’s patronage has helped me very much, both with the gathering of precise drawings of the towns and with the descriptions thereof. Among them Carlo Emanuele Vizzani deserves the first place. He treated my son in Rome, while he was still among the living, with unusual consideration, and after his return to his country he bestowed this consideration on me as well by supplying several proofs when the occasion arose.” In addition to the sources mentioned in the foreword were others Blaeu mentioned in the texts on the verso of the maps and plates. For towns that had no other sources, Blaeu copied older works, such as the Braun and Hogenberg images, although Blaeu did not mention this origin.

During his lifetime, Blaeu published three atlases of the *Theatrum civitatum et admirandorum Italiae*: one with the towns of the ecclesiastical state; the first atlas of the *Admiranda urbis Romæ*; and a volume with the towns of Naples and Sicily, which was a preliminary edition with only thirty-three maps and plates (see table 44.4). In 1682, Joan Blaeu’s heirs added two more volumes with the towns of Piedmont and Savoy, with financial support from the grand duke of Savoy, Carlo Emanuel II.²³⁶ Blaeu’s heirs and later successor Pieter Mortier would publish more descriptions of the towns of Italy, but the planned multivolume town atlas of the whole world (except Germany) was never completely realized.

The Blaeu archives were presumably destroyed by the fire at the Blaeu printing house in 1672, but there were letters in Italian archives. The correspondence of Joan Blaeu and his son Pieter reveal that not Joan, but Pieter, conducted most of the foreign relations for the Blaeu firm. Pieter, who was fluent in Italian, French, and German,

was called the “‘roving agent’ of the business travelling tirelessly through Europe to sell and to buy books and to seek assistance in completing the plans [for the town atlases of Italy] launched by his father.”²³⁷

In 1661, Joan Blaeu solicited a grant from the grand duke of Tuscany, as we read in a letter written by Pieter to Antonio Magliabechi, the librarian of the Biblioteca Medicea Laurenziana, Florence. Blaeu referred to “the Duke of Savoy [who] sends my father all the towns and other objects of interest in his state and has also agreed to pay for everything my father will spend on the drawings.”²³⁸ A volume of town plans of Tuscany, however, was never produced because the grand duke of Tuscany was not as generous as the grand duke of Savoy.²³⁹ From what kind of business relations this extreme generosity sprang can only be suggested.²⁴⁰ It is remarkable that the grand duke of Savoy also paid a great sum of money to compensate Blaeu for his losses from the fire. Ultimately, the citizens of the duchy carried the burden of the production costs: the grand duke ordered the most talented military engineers to survey the towns, at the expense of the towns, and after the grand duke’s death in 1675, Blaeu’s bills for engraving and printing had to be approved by the state’s treasurer, which gave rise to conflicts.

Finally, in a letter dated 12 November 1681, the Blaeu brothers (Joan II and Pieter) wrote to Duke Vittorio Amadeo II that forty-five copies of maps “des Estats de Son Altesse Royale de Savoye” had been shipped. Some years before, the state of Savoy had placed another order in Amsterdam for the building of two warships. The Blaeus considered it most appropriate to ship their town atlases on the two new warships: the *Saint Victor* and the *Saint Jean Baptiste*. Apart from these forty-five uncolored copies, four illuminated copies and one in black and white were expedited to Turin by road, via the Alps. The bill presented by the Blaeus for the fifty copies amounted

236. Facsimile edition: Luigi Firpo, ed., *Theatrum Sabaudiae (Teatro degli stati del Duca di Savoia)*, 2 vols. (1984–85; new ed., ed. Rosanna Rocca, Turin: Archivio Storico della Città di Torino, 2000), vol. 1, with seventy-one color facsimiles, and vol. 2, with seventy-four color facsimiles. See also pp. 847–51 in this volume.

237. Henk Th. van Veen, “Pieter Blaeu and Antonio Magliabechi,” *Quaerendo* 12 (1982): 130–58, esp. 133. For a summary of Pieter Blaeu’s correspondence, see *Pieter Blaeu, lettere ai Fiorentini: Antonio Magliabechi, Leopoldo e Cosimo III de’ Medici, e altri, 1660–1705*, 2 vols., ed. Alfonso Mirto and Henk Th. van Veen (Florence: Istituto Universitario Olandese di Storia dell’Arte, 1993).

238. Blaeu, *Lettere ai Fiorentini*, 1:97–99.

239. Van Veen, “Pieter Blaeu and Antonio Magliabechi,” 142.

240. C. Koeman, “Atlas Cartography in the Low Countries in the Sixteenth, Seventeenth, and Eighteenth Centuries,” in *Images of the World: The Atlas through History*, ed. John Amadeus Wolter and Ronald E. Grim (New York: McGraw-Hill, 1997), 73–107, esp. 96–101.

TABLE 44.5 The Town Atlases by Janssonius

Part	Region	Number of Maps (Number by Braun and Hogenberg)
1–2	The Netherlands	113 (66)
3–4	German Empire	155 (107)
5	France and Switzerland	41 (23)
6	Northern Europe	53 (50)
7	Italy	79 (40)
8	Spain and non-European countries	59 (45)

Source: KAN, vol. 4.

to 28,900 guilders (the warships built at Amsterdam had cost 75,000 guilders each).²⁴¹

About 1655, competition among Amsterdam map-sellers had induced Johannes Janssonius to bring out, next to his geographical atlas, a town atlas of his own. He had gained possession of all the Hogenberg plates, which he reprinted without the text and collected them with 170 other plates in the eight parts of his *Illustriorum urbium tabulae* (table 44.5). It competed with Blaeu's *Tooneel der Steden*, from which he had plagiarized most of the plans, as well as with the town plans printed by Danker Danckerts and Nicolaas I Visscher. Indeed, in 1657 the town atlas by Janssonius was the largest town atlas available at that time, with five hundred plates, but it did not include anything new.

After the death of Johannes Janssonius, Johannes Janssonius van Waesbergen used the plates for his *Tooneel der vermaarste Koopsteden* of 1682. In 1694, some of the plates were sold to Frederick de Wit, who reworked them, added his own imprint, and used them in his own town atlas. In turn, some of De Wit's plates were used by Pieter van der Aa in *La Galerie agréable du monde* (1729),²⁴² and other material came into the possession of the publishing house Covens and Mortier. Very worn after 150 years, they produced faded prints much inferior to those to be found in the first editions.

Regional Atlases

Publishers in the Low Countries never had much interest in regional atlases. Except for atlases of the Low Countries, there was only one regional atlas published during the first hundred years of atlas production: the first atlas of America, produced in 1597 and associated with Cornelis van Wytfliet. Van Wytfliet, secretary of the Council of Brabant, had great interest in the new discoveries, specifically those in America. He published his findings as a supplement to Ptolemy's work on the western world, *Descriptionis Ptolemaicae augmentum sive occidentis noti-*

tia (Louvain: Jan Bogaerd, 1597).²⁴³ This atlas comprised nineteen maps of parts of America and was the first atlas of that continent. The content was largely borrowed from world maps of Mercator (1569) and Plancius (1592), supplemented with material from Theodor de Bry's *America* (1590–96).

During the Twelve-Year Truce (1609–21), the temporary cease-fire in the Eighty Years War, a folio atlas of the Seventeen Provinces, *Germania inferior*, appeared in Amsterdam in 1617.²⁴⁴ The text included almost no mention of recent events, to avoid offending any potential customers. Petrus Montanus, the author of the text, and his brother-in-law Pieter van der Keere, engraver of the maps and originator of the project, were eventually forced to flee the ravages of Spanish oppression in the southern Low Countries.

The *Germania inferior* was not the first atlas to include only maps of the Low Countries. The maps of the Low Countries from Mercator's *Atlas* had already been published separately with their own title page in 1585.²⁴⁵ The *Itinerarium Belgicum* (1587), a small atlas comprising twenty-two maps and containing the most important travel routes in the Low Countries, probably originated in the Cologne atelier of Frans Hogenberg or Georg Braun.²⁴⁶ Vrients followed in 1603 with an atlas containing nineteen maps of the Low Countries from Ortelius's *Theatrum*.²⁴⁷

In 1599, Zacharias Heyns produced *Den Nederlandtschen landt-spiegel*, which contained small woodcut

241. Isabella Ricci and Rosanna Rocca, "La grande impresa editoriale," in *Theatrum Sabaudiae (Teatro degli stati del Duca di Savoia)*, 2 vols., ed. Luigi Firpo (1984–85; new ed., ed. Rosanna Rocca, Turin: Archivio Storico della Città di Torino, 2000), 1:63–98.

242. On the life and work of Pieter van der Aa, see P. G. Hoftijzer, *Pieter van der Aa (1659–1733): Leids drukker en boekverkooper* (Hilversum: Verloren, 1999).

243. KAN, 3:659–74 (no. 371). This atlas has been published in facsimile: Cornelis van Wytfliet [Cornelle Wytfliet], *Descriptionis Ptolemaicae augmentum; sive, Occidentis notitia brevis commentario, Louvain 1597*, intro. R. A. Skelton (Amsterdam: N. Israel, 1964).

244. KAN, 3:622–30 (no. 364). Dutch and Latin editions of this atlas followed in 1622. See Schilder, "Pieter van den Keere, een goochelaar met koperplaten."

245. Bert van 't Hoff, "De oudste atlassen van de Nederlanden: Een merkwaardige atlas van Mercator in het stadsarchief van 's-Hertogenbosch," *De Gulden Passer* 36 (1958): 63–87. Jean Denucé, however, proceeds from an atlas compiled by Ortelius in 1586 in "De eerste nationale atlas van onze provinciën (België-Nederland) van 1586," in *Études d'histoire dédiées à la mémoire de Henri Pirenne, par ses anciens élèves* (Brussels: Nouvelle Société d'Éditions, 1937), 91–103. See also MCN, 2:134–35.

246. There is a facsimile of this little atlas: [Frans Hogenberg et al.], *Itinerarium Belgicum*, intro. H. A. M. van der Heijden (Weesp: Robas BV, [1994]); see also Meurer, *Atlantes Colonienses*, 84–89.

247. MCN, 2:135–36, and Günter Schilder, "Een belangrijke 16^e eeuwse atlas van de Nederlanden gepubliceerd door Frans Hogenberg," *Kartografisch Tijdschrift* 10, no. 2 (1984): 39–46.

maps, some of which were similar to those in *Le miroir du monde*.²⁴⁸ Abraham Goos, engraver and father of the well-known publisher of pilot books and sea atlases Pieter Goos, compiled the *Nieuw Nederlandtsch caertboeck* (Amsterdam, 1616).²⁴⁹ This was the first atlas of the Netherlands, written and drawn for the occasion, although it does not show the same pretension in this regard as does Van den Keere's *Germania inferior*. In contrast to Montanus's text, the text in this small atlas was purely descriptive, not political. The atlas was oblong in shape, and the text was interspersed with twenty-three maps. The maps were oval in a rectangular frame, the corners of which were ornately decorated.²⁵⁰

Over time, the market for large folio atlases of the Low Countries appears to have become more limited than that for smaller atlases. Thus, on 20 October 1635, Jacob Aertsz. Colom advertised that he was planning to publish *De vyerighe colom* (16 × 23 cm) in French and in Dutch.²⁵¹ This work comprised fifty maps of the Seventeen Provinces, the duchies of Brabant, and the counties of Flanders, Holland, and Zeeland, and the work was reprinted in 1650 and 1660. Finally, between 1667 and 1690, Frederick de Wit published his *Nieut kaert boeck vande XVII Nederlandsche Provincien*, containing approximately twenty-five maps.²⁵² Almost all of the editions of this regional atlas differ from one another, and De Wit did not date them. The work is largely an imitation of the previously mentioned Visscher atlas of the Low Countries.

Historical Atlases

Beginning in 1579, with the publication of his *Parergon*, Ortelius offered an atlas of maps intended as an explanation of history.²⁵³ Ortelius designed the maps himself based on his studies of ancient geography and history. Details from the classical writers, supplemented by place-names from Ptolemy's *Geography*, were carefully cast into cartographic form. Ortelius also made use of the portraits on the coins in his valuable collection and many biblical representations. The maps from the *Parergon*, engraved by Jan Wierix among others, were more richly decorated than those in the *Theatrum orbis terrarum* (fig. 44.19). Ortelius, using the motto "Historiae oculus Geographia" on the frontispiece, was one of the first to attempt to sketch a geographical picture of the classical world, a subject very close to his heart.

Petrus Bertius's *Theatrum geographiae veteris*, the first Amsterdam historical atlas, was published in 1618 by Jodocus Hondius Jr. and Isaac Elsevier.²⁵⁴ It consisted of twenty-eight maps by Ptolemy, supplemented by a reengraved copy of a Roman road map—the Peutinger map—and fourteen maps from Ortelius's *Parergon*. Apparently, Hondius or Elsevier had access to printed sheets of the Ortelius maps, which were gradually replaced by

new engraved maps, most produced by Pieter van den Keere. Bertius, a brother-in-law of Van den Keere, was a professor of mathematics and librarian at the University of Leiden until he was appointed cosmographer and historian by Louis XIII of France in 1618. His second historical atlas appeared in 1630, published in Paris by Melchior II Tavernier.

Johannes Janssonius had already included ten historical maps in part 5 of his *Novus atlas* in 1650. Shortly thereafter, in 1652, he published a complete historical atlas, *Accuratissima orbis antiqui delineatio*, consisting of fifty-three maps relating to the Bible and ancient history, and a copy of the Peutinger map in four sheets.²⁵⁵ The maps are of different origins. Several were reengraved from Ortelius's *Parergon* maps, but it can be assumed that they were compiled by George Hornius, Leiden professor of geography and history, who provided an introduction for the work in 1663. In 1658, Janssonius used Hornius's introduction and the majority of the maps for part 6 of his *Atlas novus*. This sixth part, which was given its own title, was also sold separately as a historical atlas. Both a Latin and a French edition of this rare work have been preserved.²⁵⁶

Collector's Atlases

In the late sixteenth century and throughout the seventeenth, private libraries and map collections developed as a product of Renaissance scholarship and as a demonstration of scientific interest. A collector's atlas was a uniformly bound set of maps interspersed with topographical prints and drawings (excluding nontopographic material such as historical prints). A collector's atlas was also different from the sixteenth- or early seventeenth-

248. KAN, 3:363–64 (no. 334:51). For a primarily textual analysis of *Den Nederlandtschen Landtspiegel*, see Lenny Veltman, "Een atlas in pocketformaat: *Den Nederlandtschen landtspiegel* van Zacharias Heyns," *Caert-Thresoor* 17 (1998): 5–8. The pocket atlas has also appeared in facsimile: Zacharias Heyns, *Den Nederlandtschen landtspiegel in ryme gestelt* (Alphen aan den Rijn: Canaletto, 1994).

249. KAN, 3:612–21 (no. 363). There is a facsimile of the 1625 edition: Abraham Goos, *Nieuw Nederlandtsch caertboeck*, intro. H. A. M. van der Heijden (Weesp: Robas BV, [1996]).

250. The atlas was reprinted in 1619 and 1625.

251. A facsimile was published: Jacob Aertsz. Colom, *De vyerighe colom, verthonnende de 17 Nederlandsche provintien*, intro. Wil. M. Groothuis (Groningen: Noorderboek, 1987).

252. A facsimile of the 1670–72 edition was published: Frederik de Wit, *Nieut kaert boeck vande XVII Nederlandsche Provincien*, intro. H. A. M. van der Heijden (Alphen aan den Rijn: Canaletto/Repro-Holland, 1999).

253. Van der Krogt, "First Atlas?" 74–76, and Meurer, "Ortelius as the Father of Historical Cartography," 143–52.

254. KAN, 1:486–91 (no. 1:512).

255. KAN, 1:496–510 (no. 1:6).

256. KAN, 1:521–22 (nos. 1:960 and 1:961).



FIG. 44.19. MAP OF EUROPE FROM ORTELIUS'S *PARERGON*.

Size of the original: ca. 35.5 × 47 cm. Abraham Ortelius, *Parer-*

gon, sive veteris geographiae aliquot tabulae (Antwerp, 1595). Photograph courtesy of the Pitts Theology Library, Emory University, Atlanta.

century *atlas factice* (a composite atlas made to order), which was comparatively modest in composition, consisting of maps only.²⁵⁷

The rise of the widespread mania for collecting topographical material coincided with the enormous output and diversity of map printing in the Netherlands. The private libraries of well-to-do citizens frequently included collections of maps and views assembled into volumes.²⁵⁸ Of the forty or so largest collections recorded in the literature and in contemporary auction catalogs, about three-fourths have survived intact. An example of a collector's atlas is provided by the Atlas Blaeu–Van der Hem, which was originally assembled by the Amsterdam lawyer and banker Laurens van der Hem between 1640 and 1678.²⁵⁹

257. David Woodward, "The Techniques of Atlas Making," *Map Collector* 18 (1982): 2–11.

258. C. Koeman, *Collections of Maps and Atlases in the Netherlands: Their History and Present State* (Leiden: E. J. Brill, 1961). When map

and print production increased in the late seventeenth century and in the first half of the eighteenth, the number and size of collectors' atlases also grew; frequently there were more than a hundred volumes. See also chapter 25 in this volume.

259. Vienna, Österreichische Nationalbibliothek. See Erlend de Groot, *De Atlas Blaeu–Van der Hem: De verzamelde wereld van een 17^{de}-eeuwse liefhebber* ('t Goy-Houten: The Author and HES & De Graaf, 2001); Peter van der Krogt and Erlend de Groot, comps., *The Atlas Blaeu–Van der Hem of the Austrian National Library* ('t Goy-Houten: HES, 1996–), a descriptive catalog of the complete atlas, five of six volumes published; *Een wereldreiziger op papier: De atlas van Laurens van der Hem (1621–1678)*, exhibition catalog ([Amsterdam]: Stichting Koninklijk Paleis te Amsterdam, [1992]); and Karl Ausserer, "Der 'Atlas Blaeu der Wiener National-Bibliothek,'" in *Beiträge zur historischen Geographie, Kulturgeographie, Ethnographie und Kartographie vornehmlich des Orients*, ed. Hans von Mzik (Leipzig: Franz Deuticke, 1929), 1–40, reprinted in *Acta Cartographica* 27 (1981): 15–60.

Two other private collectors' atlases that have been preserved are Goswinus Uilenbroeck, *Grand théâtre de l'univers*, 42 vols., sold in 1735 (now in Rio de Janeiro, Biblioteca Nacional), and C. Beudeker, *Atlas der 17 Nederlandsche Provincies*, 27 vols., sold in 1778 (now in the BL).



FIG. 44.20. VILLE FRANCHE AND THE PLAN OF CHARLEVILLE FROM THE ATLAS BLAEU–VAN DER HEM.

Size of the original: 43.5 × 33 cm. Photograph courtesy of the Bildarchiv, Österreichische Nationalbibliothek, Vienna (vol. 6, pl. 48 of the atlas).

This atlas was based on a copy of Joan Blaeu's *Atlas maior*, illuminated and heightened with gold by the greatest *enluminator* of the period, Dirck Jansz. van Santen.²⁶⁰ The collection, including additional printed maps, manuscript maps, and a great many ink and watercolor drawings, was bound in forty-six folio volumes (fig. 44.20). Oversized town views and oversized manuscript maps had to be adapted to the size of the printed atlas maps. Although these atlas maps were printed on large-sized paper, town views sometimes had to be trimmed, reducing the foreground or the sky. In its present form, the Atlas Blaeu–Van der Hem only partly reflects the intentions of the original collector. When Laurens van der Hem died in 1678, he left his atlas in an unfinished state. It is not known when he started binding his atlas, but probably thirty volumes were bound during his lifetime, and the rest of the material was in several portfolios. After the auction of the atlas in 1730, each of these portfolios was regarded as a volume and, depending on the amount of material contained, bound separately or in groups.

Because of its beauty and value, the atlas attracted the attention of foreigners visiting Amsterdam. Among them was Cosimo III de' Medici, who, escorted by Joan Blaeu, paid a visit to Van der Hem in 1662. In 1711, the German traveler Zacharias Konrad von Uffenbach wrote in his diary that he had visited Agatha van der Hem (the heiress) to inspect the beautiful Blaeu atlas for which the Comte d'Avaux had offered 20,000 guilders, but which the heiress valued at 50,000. Agatha said she was not allowed to show the volumes with manuscript charts of the East Indies. Indeed, the most interesting and valuable volumes are those incorporating the manuscripts, charts, and drawings from the so-called Secret Atlas of the Dutch East India Company.²⁶¹ Probably, the wealthy Laurens van der Hem, who was Catholic, was not acceptable as a shareholder in the Dutch East India Company and received these exclusive charts through Blaeu's intervention.²⁶² The latter, as chartmaker to the company, could easily have ordered copies for himself and presented one to Van der Hem, one of the best customers of his bookshop.

Distributed through the volumes of the Atlas Blaeu–Van der Hem are topographic drawings and watercolors of towns and landscapes. Among the notable artists who supplied works to Van der Hem were Lambert Doomer, Jan Hackaert, Adriaen Matham, Roelandt Savery, Willem Schellinks, and Reinier Nooms (alias Zeeman). Hackaert worked in Switzerland, Matham in North Africa, and Schellinks in Italy. Laurens van der Hem's brother Herman, who lived for a while in France, supplied him with several landscapes of southwest France.

When Agatha van der Hem died on 11 September 1725, the atlas was auctioned at Messrs. Adriaan Moetjens in The Hague. At that time, prices were low and the collection fetched only 22,000 guilders. It was bought for Prince Eugene of Savoy, and after his death in 1736, the atlas was bought by the Austrian Emperor Charles VI and given to the Hofbibliothek (after 1918, the Österreichische Nationalbibliothek).

WALL MAPS PUBLISHED IN THE NETHERLANDS

Wall maps have been widely neglected in the history of sixteenth- and seventeenth-century Dutch cartography.

260. H. de la Fontaine Verwey, "De atlas van Mr. Laurens van der Hem," *Maandblad Amstelodamum* 38 (1951): 85–89; idem, "The Glory of the Blaeu Atlas and the 'Master Colourist,'" *Quaerendo* 11 (1981): 197–229; W. K. Gnirrep, "Dirk Janszoon van Santen en een liefhebber der Joodse Oudheden," *Jaarverslag van het Koninklijk Oudheidkundig Genootschap* (1986): 51–64; Truusje Goedings, *A Composite Atlas Coloured by Dirk Jansz. van Santen* (Geldrop: Paulus Swaen, 1992), 15–40; and Wieder, *Monumenta Cartographica*, vol. 5.

261. Convincing arguments have recently been made to the effect that the "secret" maps of the VOC were, at the most, "exclusive," see chapter 46 in this volume.

262. De la Fontaine Verwey, "Vergulde Sonnewyzer," 211.

The names of Mercator, De Jode, Blaeu, Hondius, Janssonius, Visscher, and others seem to conjure up only the magnificent atlases created by these cartographers. But their large wall maps, which graced the offices of the great merchants, shipowners, municipal authorities, and government departments for both informative and decorative purposes, are much less well known. Leading citizens often had large and usually beautifully colored wall maps with predominantly decorative aspects. The domestic interiors painted by the Dutch masters of the seventeenth century often show wall maps, and the paintings by Jan Vermeer of Delft are particularly well known for this (plate 52).²⁶³

Part of the reason for the neglect of these maps by modern scholars is their poor survival rate. Once a wall map, consisting of several sheets, was mounted on a linen backing and hung on the wall, it was exposed to destruction as a result of dampness, sunlight, smoke and soot from open fires, temperature fluctuations, dirt, and frequent handling. With time, many of these wall maps became unattractive and were destroyed.

A somewhat better fate awaited those wall maps that, for various reasons, were not assembled and mounted but were kept as separate sheets in portfolios or in bound volumes, particularly if they were held by public archives or libraries. Unfortunately, many Dutch wall maps are known only from written sources. These sources include the account books of Plantijn; Ortelius's list of cartographers, the "Catalogus auctorum"; records of notarial acts, such as the inventory of all the copperplates in Pieter van den Keere's possession in 1623; catalogs published by book dealers, such as one by Georg Willer of Augsburg from 1573 that mentioned a wealth of wall maps; and preserved sales catalogs of map publishers, such as Cornelis Claesz. (1609) (fig. 44.21), Joan Blaeu (1646, 1649, and 1655), and Nicolaas II Visscher (1682). Despite their low survival rate, these wall maps were popular among the higher social classes and were highly valued throughout Europe when they were produced, and consequently they were printed in large numbers and in several editions.²⁶⁴

Publishers' sales catalogs of maps, atlases, and globes often contained a special section devoted to wall maps, and the publishers offered their customers a variety of maps of the world, the continents, European countries, and the Dutch provinces. Often customers could choose the elements to be included in the decorative borders.²⁶⁵ The shop catalog of Nicolaas II Visscher of 1682 provides the most detailed description of the results of his work:

Catalog of large land maps in various sheets; world map in two hemispheres of twenty sheets; Europe in fifteen map sheets, can be enlarged at the side borders with twelve towns, and at the side borders and at the bottom with twenty towns; Europe, Asia, Africa, and America—each consisting of four sheets and two

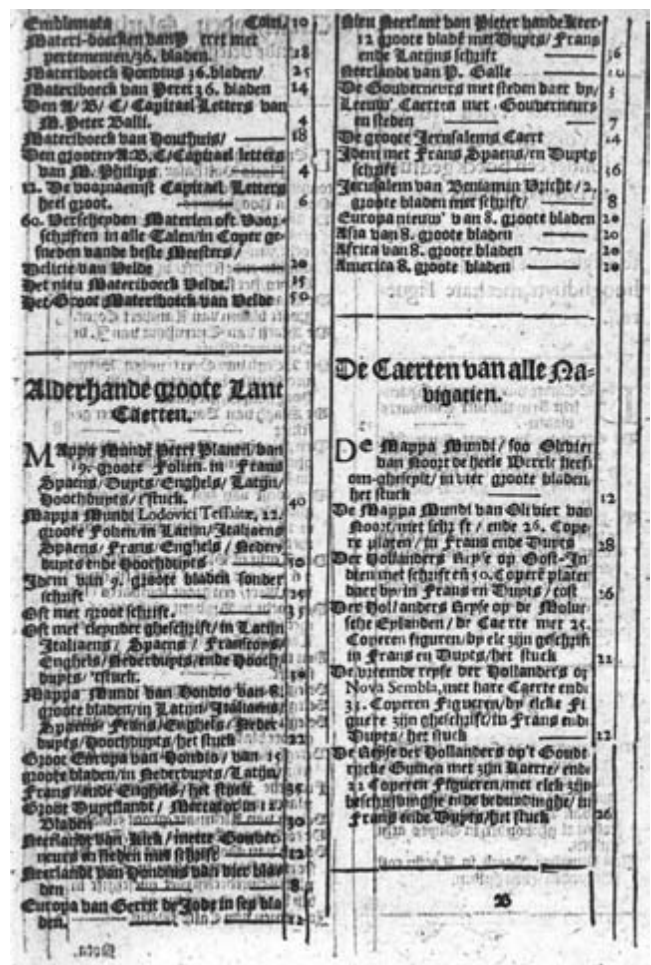


FIG. 44.21. PAGE FROM A CATALOG BY CORNELIS CLAESZ. WITH A SECTION DEVOTED TO WALL MAPS, 1609.

Size of the original: 22.1 × 16 cm. Photograph courtesy of the Herzog August Bibliothek, Wolfenbüttel (Bc Sammelbd. 10[2]).

sheets of decorations; Germany in twelve map sheets, can be enlarged with a decorative title and twelve of the most important towns—ditto with electors and towns; the Seventeen Dutch Provinces in nine map sheets, can be enlarged with the title at the top, with twelve of the most important towns at the side bor-

263. MCN, 5:306–7; Bärbel Hedinger, "Wandkarten in holländischen Interieurgemälden," *Die Kunst*, 1987, 50–57; James A. Welu, "Vermeer: His Cartographic Sources," *Art Bulletin* 57 (1975): 529–47; and idem, "Vermeer and Cartography," 2 vols. (Ph.D. diss., Boston University, 1977).

264. The wall map of the world by Hendrik van Langren (ca. 1600) was, according to a notarial deed, printed in two thousand copies. The wall map of Germania was offered for sale in the Dutch-, German-, and French-language catalogs of Nicolaas II Visscher, and the customer was able to decide how the wall map would be assembled. See MCN, 3:28 and 5:243–44.

265. All Dutch folio-sized maps with decorative borders are described and reproduced at full size in volume 6 of MCN.

ders, and with twenty towns at the side borders and at the bottom; the seven United Provinces in nine map sheets, can be enlarged with the title at the top, with twelve of the most important towns at the side borders, and with twenty towns at the side borders and at the bottom; Brabant, Flanders, and Zeeland—each consisting of nine map sheets, can be enlarged at the side borders with fourteen of the most important towns, all of the same size; Brabant, Flanders, and Zeeland mounted together, can be enlarged at the side borders with forty-two of the most important towns; Holland in twenty map sheets, and at the bottom with twenty of the most important towns; France in four map sheets and two sheets of decoration; Italy in four map sheets and two sheets of decoration; Catalonia in six map sheets; Purmer Lake [in northern Holland] in four map sheets; The Holy Land in ten map sheets.²⁶⁶

A specific feature of wall maps was their decorative and informative purpose. The possession of such a wall map allowed the wealthy shipowners and merchants to show that they were trading in every corner of the world. Therefore, the geographical content had to be based on the latest knowledge. Keeping close track of geographical progress, the owners replaced out-of-date wall maps with new ones, providing a picture adjusted to the latest surveys.

Of course, one of the problems in sending wall maps to far-away customers was their size. They were usually sent as separate sheets and assembled into a wall map at their destination. An interesting instruction by Gerardus Mercator from about 1570 for the assembling of wall maps has been preserved (fig. 44.22):

Gerardus Mercator salutes the gentle reader.

To oblige those wishing to save money as well as those living abroad and far away from us and to whom they can definitely not be transported after having been coloured, because of the difficulty of assembling we have added to these maps of ours the following instruction from which one can learn how to use these maps in the form in which they have come from the press, just as if one had acquired them on linen and coloured.

The assembling must start at the second sheet of the upper series. The right-hand margin, opposite our left hand, must be cut off at the edge. The same goes for the third sheet of this series and the remaining ones. From the subsequent series the right-hand margin has to be cut off exactly on the line (as was the case in the first series). The outer edges of the map must be spared however, i.e. the borders of the map itself should not be cut off. Then one has to attach the second sheet to the first one with an application of wheat flour or spelt and boiled water, and add the third sheet, etc. When the first strip is finished, the same must be done with the second strip and then with the third one. Next the second strip must be glued very carefully to the first one, the third to the second and so on. Finally one has to



FIG. 44.22. GERARDUS MERCATOR'S INSTRUCTIONS FOR ASSEMBLING WALL MAPS, CA. 1570.

Photograph courtesy of the Biblioteca Universitaria Alessandrina, Rome (Portofolio Carte Geografiche Sec. XVI, II A 1–4, B 1–4 [Rari 215]).

consider how the sheets on which the ornaments have been printed separately must be added to the edge of the map: this can be seen on our universal description of the entire world and on the map of Palestine or the Holy Land. When these sheets, too, have been cut off in the proper way and have been fitted in the right place, you will have a map, ready for use. We bid you farewell and hope that you will enjoy your map.²⁶⁷

The size of an assembled wall map sometimes made it difficult to study closely. When his wall map of the Seventeen Provinces was published in Antwerp in 1578, Filips Galle announced that he had received a special request “to publish the description belonging to this map in the form of a booklet, to suit the convenience of those who lack the space to hang the map and its annotations, those who prefer to use the text with the map in this easier way.”²⁶⁸

266. Copies of the Dutch-language edition of the catalog may be found in Copenhagen, Det Kongelige Bibliotek (184-393 81); in Leiden, Hoogheemraadschap van Rijnland; in the BNF (Q 8552); and in Wolfenbüttel, Herzog August Bibliothek (Cb 105 [1]). Copies of the French-language edition are in the BNF (Q 8553) and in Paris, Bibliothèque de l'Institut de France (Coll. Duplessis 622). The German-language edition is in the BNF (Q 8553 bis). See also Jan van der Waals, *De prentschat van Michiel Hinloopen: Een reconstructie van de eerste openbare papierkunstverzameling in Nederland* (The Hague: SDU Uitgeverij, 1988), 199.

267. Preserved in Rome, Biblioteca Universitaria Alessandrina; another copy is in Perugia, Biblioteca Communale Augusta (I-C-94). See Günter Schilder, “The Wall Maps by Abraham Ortelius,” in *Abraham Ortelius*, 93–123, quotation on 93–94, and Almagià, “Una serie di preziose carte di Mercator,” 802.

268. MCN, 2:119.



FIG. 44.23. SKETCH OF A ROLLER CASE FOR WALL MAPS, RICHARD HAKLUYT THE ELDER, CA. 1590. In a letter from Hakluyt to Abraham Ortelius. Photograph courtesy of the Harry Ransom Humanities Research Center, University of Texas at Austin (Hessels 167).

Some owners of multisheet maps never had them assembled into a wall map, but kept the separate sheets in a portfolio. Although when preserved this way they had a much greater chance of survival, there was always the danger that some sheets would be lost and the map would be incomplete. Sometimes the separate sheets kept in a portfolio were too large and unwieldy to store, and the wall map might then be cut into smaller segments, glued onto cardboard, and stored in a small file.

Another solution was offered to Abraham Ortelius by Richard Hakluyt the Elder. In an undated letter, Hakluyt, in conjunction with the London merchant John Ashley, requested that Ortelius provide them with a world map especially designed for the use of merchants and students whose houses were “not spacious or light enough to contain a large map fully spread out.”²⁶⁹ Hakluyt suggested that this world map be rolled from both sides with the help of two round turning posts and fastened on a square board measuring three or four feet to be moved around on rollers. To illustrate, Hakluyt included a small drawing (fig. 44.23). Furthermore, he advised that the meridian lines be placed at intervals of three feet so that wherever the map was opened, “all lines and circles may appear, showing the distances of places in longitude and latitude.” Whether Ortelius followed Hakluyt’s advice is unknown.

WALL MAP PRODUCTION IN ANTWERP (TO CA. 1600)

The oldest wall maps published in Antwerp are maps of the world. These multisheet world maps originated at the beginning of the sixteenth century in Strasbourg, where the earliest were published by Martin Waldseemüller (in

1507 and 1516) and Lorenz Fries (in 1525).²⁷⁰ Gemma Frisius started a tradition of wall maps of the world printed in Antwerp in 1540. In the second half of the century, Antwerp publishers began to produce wall maps of continents, countries, and provinces (appendix 44.4).

Antwerp Wall Maps of the World

The existence of Gemma Frisius’s 1540 Dutch world wall map has been confirmed by only a few written sources, but it must be considered the first printed world map to have been published in the Low Countries.²⁷¹ It is likely that it was printed in Antwerp, given, among other things, its mention in Ortelius’s “Catalogus auctorum” of 1570: “Gemma Frisius, Universi Orbis Tabulam; Antverpiae.” Apian’s *Cosmographia* (Antwerp, 1544) includes a reduced version of the map.²⁷²

A four-sheet version of Gemma Frisius’s wall map published in 1544 by Sebastian Cabot has survived.²⁷³ Its significance lies mainly in the cartographic representation of the East Indies and the New World based on the latest explorations. Shortly after the publication of Cabot’s map, in 1549, Joannes Baptista Guicciardini—brother of the famous Lodovico—produced a very large world map in the form of an eagle, but, unfortunately, no example has survived.²⁷⁴ Hendrik Terbruggen’s world map of 1556 likewise took the form of an imperial eagle. Terbruggen received a patent for printing it that year, but no impressions have been located.²⁷⁵

269. Ortelius, *Epistulae*, 415–18, letter of Richard Hakluyt to Abraham Ortelius (London, ca. 1590).

270. For an overview of wall maps of the world before 1564, see MCN, 2:11–33. See also Shirley, *Mapping of the World*, 29–31 (no. 27), 46–49 (no. 42), and 54–55 (no. 48).

271. Van Ortroij, *Bio-bibliographie de Gemma Frisius*, 151–64.

272. The reproduction also appears in the Paris edition of 1551 and the Dutch editions of 1553, 1561, and 1573.

273. Copies are in the BNF (Réf. Ge AA 582) and in Weimar, Herzogin Anna Amalia Bibliothek (without text border); see Shirley, *Mapping of the World*, 90 and 92–93 (no. 81). A facsimile was included by Roger Hervé et al. in *Mappemonde de Sébastien Cabot, 1544* (Paris: Editions Les Yeux Ouverts, 1968).

274. The charter for this map was awarded on 14 June 1549; see A. Wauters, “Documents pour servir à l’histoire de l’imprimerie dans l’ancien Brabant,” *Bulletin du Bibliophile Belge* 12 (1856): 73–84, esp. 79. The map by Guicciardini was also mentioned in Ortelius’s “Catalogus auctorum” and in the catalog of the Escorial map collection, most of which has been lost; see F. C. Wieder, “Nederlandsche historisch-geographische documenten in Spanje: Uitkomsten van twee maanden onderzoek,” *Tijdschrift van het Koninklijk Nederlandsch Aardrijkskundig Genootschap* 31 (1914): 693–724; 32 (1915): 1–34, 145–87, 285–318, 775–822, and second pagination 1–158, esp. second pagination 59 (reprinted as *Nederlandsche historisch-geographische documenten in Spanje* [Leiden: E. J. Brill, 1915] and in *Acta Cartographica* 23 [1976]: 115–464).

275. Brussels, Algemeen Rijksarchief (Geheime Raad, Reg. 56, fol. 46r).



FIG. 44.24. MAP OF THE WORLD BY ORTELIUS, PUBLISHED IN ANTWERP, 1564. In eight sheets. Size of the original: 87.5 × 150 cm. Photograph courtesy of

the Öffentliche Bibliothek der Universität, Basel (Kartensammlung AA 6–7).

In 1564, Gerard de Jode published an eight-sheet, heart-shaped wall map of the world by Ortelius (fig. 44.24), the oldest known cartographic work of the *homo universalis*.²⁷⁶ Ortelius dedicated the map to his friend the well-known numismatist Marc Laurin (Marcus Laurinus), who lived in Bruges. The sources that were available to Ortelius varied in character and origin. In addition to classical sources, such as the work of Ptolemy, he relied on the descriptions of Marco Polo, Spanish and Portuguese nautical maps, and the latest printed maps available. His world map can be found as early as 1564 in the account books of Plantijn. A “Mappa vniuersalis Ortelij” was also offered in the 1573 sales catalog of the Augsburg bookseller Georg Willer.²⁷⁷ However, Ortelius’s map had little influence on the work of other cartographers, although it would have been more significant had Mercator’s 1569 map of the world not already become dominant. In 1571, De Jode published a reduced version in folio format engraved by the Van Doetecum brothers.²⁷⁸

Another noteworthy Antwerp world map is Bernard van den Putte’s 1570 woodcut map in twelve sheets.²⁷⁹ It was likely based on the map by Giovanni Andrea di Valvassore, which was itself a copy of the prototype of 1545 by Caspar Vopel. In contrast to Ortelius’s world map, Van den Putte’s was thus not very original.

Regional Wall Maps Published in Antwerp

The oldest regional wall map of the Low Countries appeared, surprisingly enough, in Brussels, where Christoph Kegel (Christophorus Pyramius) published a map of Germania in 1547.²⁸⁰ In Antwerp in 1553, Hieronymus Cock

276. Two copies are known: BL (Maps C.2.a.6), and Basel, Öffentliche Bibliothek der Universität (Ziegler-collection). See MCN, 2:33–58 and facsimiles 1.1–1.8, and Carl Christoph Bernoulli, “Ein Karteninkunabelnband der öffentlichen Bibliothek der Universität Basel,” *Verhandlungen der Naturforschenden Gesellschaft in Basel* 18 (1906): 58–80. Shirley (in *Mapping of the World*, 129–31 and 133 [no. 114]) mentions a third copy of the Ortelius world map in Rotterdam, Maritiem Museum, but we have seen only a full-size photograph of the copy preserved in Basel.

277. Stockholm, Kungliga Biblioteket. See Leo Bagrow, “A Page from the History of the Distribution of Maps,” *Imago Mundi* 5 (1948): 53–62, esp. 59.

278. This folio map is rare. Only three copies are known: in the BNF (Rés. Ge D 7663); in Basel, Öffentliche Bibliothek der Universität (Bernoulli no. 19); and in a private collection. See Nalis, *Van Doetecum Family*, pt. 3, 35–36 and 52; Shirley, *Mapping of the World*, 146–47 (no. 124); and MCN, vol. 2, facsimile 2.

279. A copy is in Wolfenbüttel, Herzog August Bibliothek. Woodcut in twelve sheets (114 × 197 cm). See MCN, 2:26 and 28–29.

280. This copper-engraved map consists of twelve sheets (total dimensions: 121 × 135 cm). The only known copy is located in Wolfen-

published a four-sheet map of Spain that assumed a significant place in the cartographic history of the Iberian Peninsula.²⁸¹ Cock's copperplates were used again, after his death in 1570, by Paul van der Houve (de la Houve) and Michel van Lochem in Paris. Other work from Cock's atelier included wall maps of America (1562),²⁸² Gelder (1564),²⁸³ Germania (1565),²⁸⁴ and the Holy Land (1570).²⁸⁵

A wall map of Spain (1571) by Ortelius and the botanist Carolus Clusius, engraved by the Van Doetecum brothers, replaced the one made by Cock. This map was considerably better than its predecessors, but it is almost certain that Clusius did none of the mapping himself. However, he had collected enough data while doing botanical research to allow Ortelius to improve on Cock's map. The map, dedicated to Thomas Rediger of Cologne,²⁸⁶ did not enjoy particularly wide distribution, according to the sales registries of the Plantijn publishing house. The lightly modified copperplates were used for reprinting in 1666 on the presses of Nicolas II Berey and again in 1704 by Alexis-Hubert Jaillot, both in Paris.

The business run by Gerard de Jode and his son Cornelis was particularly significant for the genre of sixteenth-century wall maps. Gerard de Jode published a wall map of Germania in 1562 (fig. 44.25),²⁸⁷ with multisheet maps of the Seventeen Provinces²⁸⁸ and Hungary following in 1566 and 1567, respectively. In addition, De Jode's was the only atelier in Antwerp that produced wall maps of all four continents, although they were not available as a set all at the same time.²⁸⁹

After Gerard de Jode died in 1591, his widow, Paschina, and son Cornelis reprinted the set of wall maps of the four continents, and in 1592 Cornelis published a wall map of France based on Gerardus Mercator's regional maps in the *Galliae tabulae geographicae* (1585), among other things. The main buyer of Cornelis de Jode's copperplates after his death in 1600, including those of the wall maps of the world and the four continents, was Joan Baptista Vrients. In 1604, Vrients supplied the Officina Plantiniana with De Jode's four continent maps; however, it is not known if Vrients printed them anew or if this was the remainder of a supply he had purchased.²⁹⁰ Additionally, in 1602 and 1605, Vrients published a revised wall map of the Seventeen Provinces in twelve sheets, which had originally been published by Filips Galle in 1578.²⁹¹

AMSTERDAM AS A CENTER OF WALL MAP PRODUCTION (CA. 1590–CA. 1680)

The production of wall maps in Amsterdam grew at the end of the sixteenth century and throughout the seventeenth century. In particular, it flourished shortly before and during the Twelve-Year Truce (1609–21), when hostilities between Spain and the United Provinces were tem-

porarily suspended. In the first years of the seventeenth century, wall maps of the world appeared almost annually in three different projections, evidence of the competition between the Amsterdam cartographers and publishers. With ever larger and more decorative maps, each of these tried to outdo competitors and, at the same time,

büttel, Herzog August Bibliothek (Karte 4 [Globensaal]). See MCN, 5: 215–16, and Meurer, *Germania-Karten*, 279–82, pl. 4-1¹⁻⁶.

281. A copy is in Weimar, Herzogin Anna Amalia Bibliothek. See MCN, 2:94–95.

282. Two copies are known: in the BL and in Washington, D.C., Library of Congress. See John R. Hébert and Richard Pflederer, "Like No Other: The 1562 Gutiérrez Map of America," *Mercator's World* 5, no. 6 (2000): 46–51; the facsimile, Diego Gutiérrez, *Americae sive quartae orbis partis nova et exactissima descriptio* (Washington, D.C.: Library of Congress, 1999); and John R. Hébert, "The 1562 Map of America by Diego Gutiérrez," <<http://memory.loc.gov/ammem/gmdhtml/gutierrz.html>>, in the online map collection of the Library of Congress.

283. This is known only from a second edition, published by Paul de la Houve in 1601. A copy is in the BNF (Rés. Ge AA 1319). A reduced facsimile is Christiaan Sgrooten, *Kaart van 1564 (1601) van Gelderland*, intro. Bert van 't Hoff (Assen: Van Gorcum, 1957).

284. The only known copy is in Innsbruck, Geographisches Institut der Universität; see Wilhelm Wolkenhauer, "Aus der Geschichte der Kartographie," *Deutsche Geographische Blätter* 33 (1910): 239–64. The less damaged part of the map showing western Germania was reproduced in Albert Herrmann, *Die ältesten Karten von Deutschland bis Gerhard Mercator* (Leipzig: K. F. Koehler, 1940), pl. 16. The map collection of the Royal Geographical Society in London holds two sheets (5 and 8) of the map in a composite atlas. Because there is no difference in the map content between this state and the later state by Van der Houve (1601), both sheets can also belong to this state. The eighth sheet is reproduced in Günter Schilder, "Niederländische 'Germania'-Wandkarten des 16. und 17. Jahrhunderts," *Speculum Orbis* 2 (1986): 3–24, esp. 10. See MCN, 5:221–30. See also Meurer, *Germania-Karten*, 339–48 on Sgrooten, pls. 6-1 (1st edition, Antwerp, 1566), 6-2 (2d ed., Paris, 1601), and 6-3¹⁻⁹ (3d ed., Paris, 1668).

285. The only known copy is in the BL (Maps C.10.b.2). The copy in the former Stadtbibliothek Breslau was destroyed in World War II.

286. Rediger received a presentation copy dated 1570, but unfortunately it ended up in Breslau after Rediger's death and was lost during World War II. Luckily, a facsimile of the map already existed; see Wieder, *Monumenta Cartographica*, 2:56–57 and pls. 41–44. For a facsimile of the copy in Basel, Öffentliche Bibliothek der Universität, see MCN, vol. 2, pls. 4.1–4.6.

287. A well-known copy is in the BNF (Rés. Ge D 10894). The map is a copy of Heinrich Zell's wall map of Germania. See MCN, 5:219–20, and Meurer, *Germania-Karten*, 258–60 and pl. 3-9¹⁻⁴.

288. MCN, vol. 1, facsimiles 1.1–1.5.

289. See the extracts from the Plantijn accounts in MCN, 5:38 n. 40. The map of Africa, which appears to have garnered by far the greatest interest, is known only from the reissue by Cornelis de Jode in 1596; a copy is in Nürnberg, Staatsarchiv (Nürnberg Karten und Pläne no. 1260). The only copy of the map of Asia is located in Göttingen, Niedersächsische Staats- und Universitätsbibliothek (M. 42¹ A,1). The only copy of the 1584 map of Europe is in Berlin, Staatsbibliothek (Kart. 15 282). No complete copy has yet been found of the map of America from the Officina De Jode. See MCN, 5:41–49.

290. MCN, 5:39–40.

291. H. A. M. van der Heijden, "De wandkaart van de Nederlanden in het Stadhuis te Veurne," *Caert-Thresoor* 19 (2000): 28–29, and MCN, 2:111–54 and facsimiles 5.1–5.16.

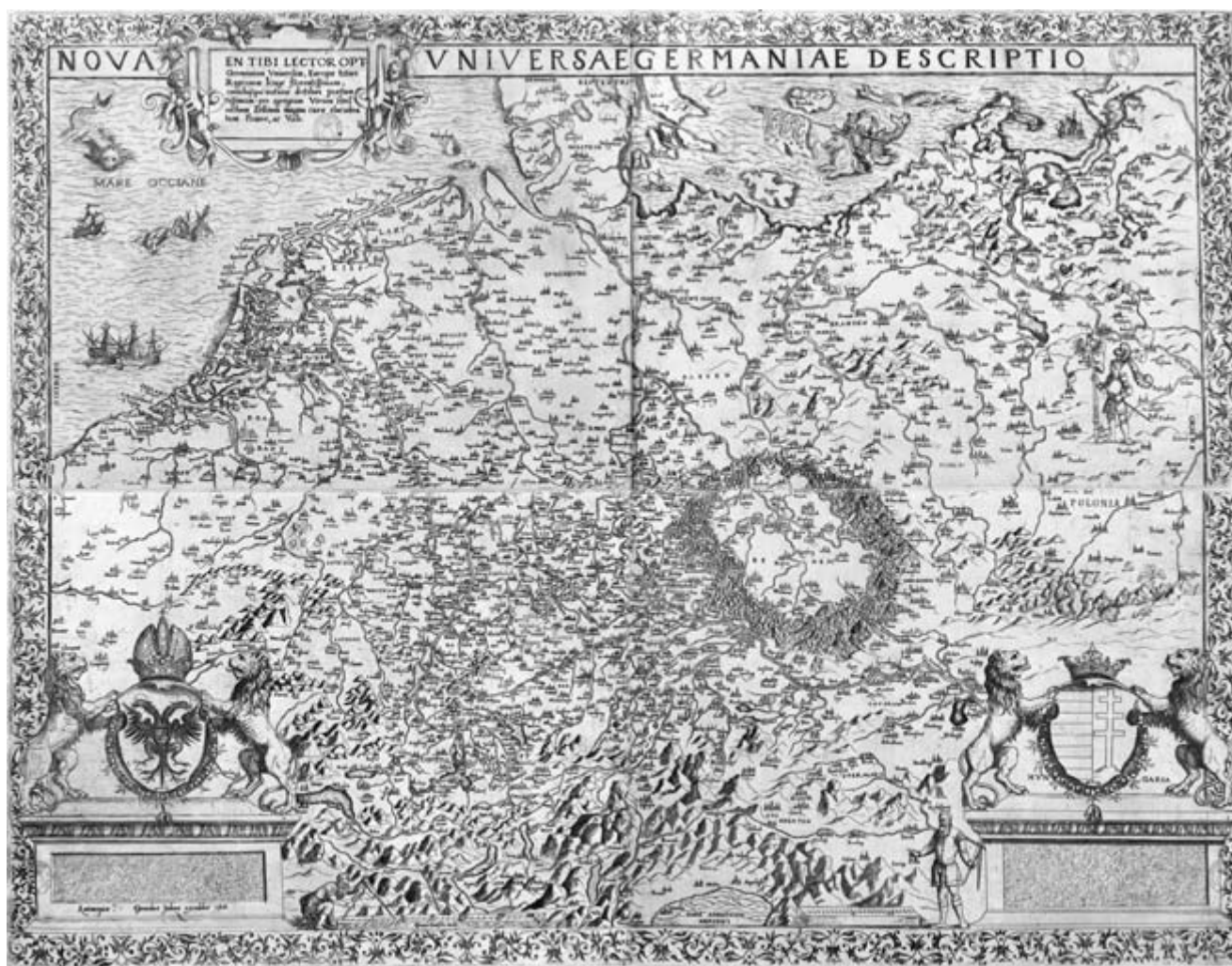


FIG. 44.25. GERARD DE JODE'S WALL MAP OF GERMANY, 1562. Copper engraving in four sheets.

Size of the original: 67.5 × 88 cm. Photograph courtesy of the BNF (Rés. Ge D 10894).

maintain clientele, if not increase their numbers. Leaders in this competition were Jodocus Hondius and Willem Jansz. Blaeu; other major producers were Pieter van den Keere and the Visscher family (appendix 44.5)

The price of a map depended on its size, decoration, and coloring. Thus, while Jan Pietersz. Saenredam's folio map of Holland was listed in Cornelius Claesz.'s catalog for only 2 stuivers in 1609, Balthasar Florisz. van Berckenrode's wall map of Holland and West Friesland cost the considerable sum of 12 guilders in 1620. The purchase of a wall map was thus a luxury, one available to only the wealthy upper class. A painting could be acquired for the same price as a wall map, but hanging a wall map expressed interest in the latest geographical knowledge. To the Dutch citizen, a map represented technical and geographical progress. In addition, the monopoly enjoyed by Amsterdam map producers and tradesmen contributed to the development of a national consciousness.

Production of Wall Maps of the World

Amsterdam was the European center of the production of multisheet world maps from 1592 to 1648 (fig. 44.26).²⁹² Its hegemony began in 1592, when Cornelis Claesz. and Joan Baptista Vrients published Plancius's map, the first large world map to appear in the northern Low Countries (fig. 44.27). The caption reads:

With this map, it was our aim to map all the oceans, lands, and seas such that they lie correctly according to degree of longitude and latitude. To this end we have spared neither effort nor expense. We have used the greatest care and precision in comparing the hydrographic maps of the Spaniards and the Portuguese, which they use in sailing to America and India, with

²⁹² *MCN*, 3:22–102. Only the reissue of the world map by Van den Keere (ca. 1611) was published in Rotterdam by Jan Houwens.

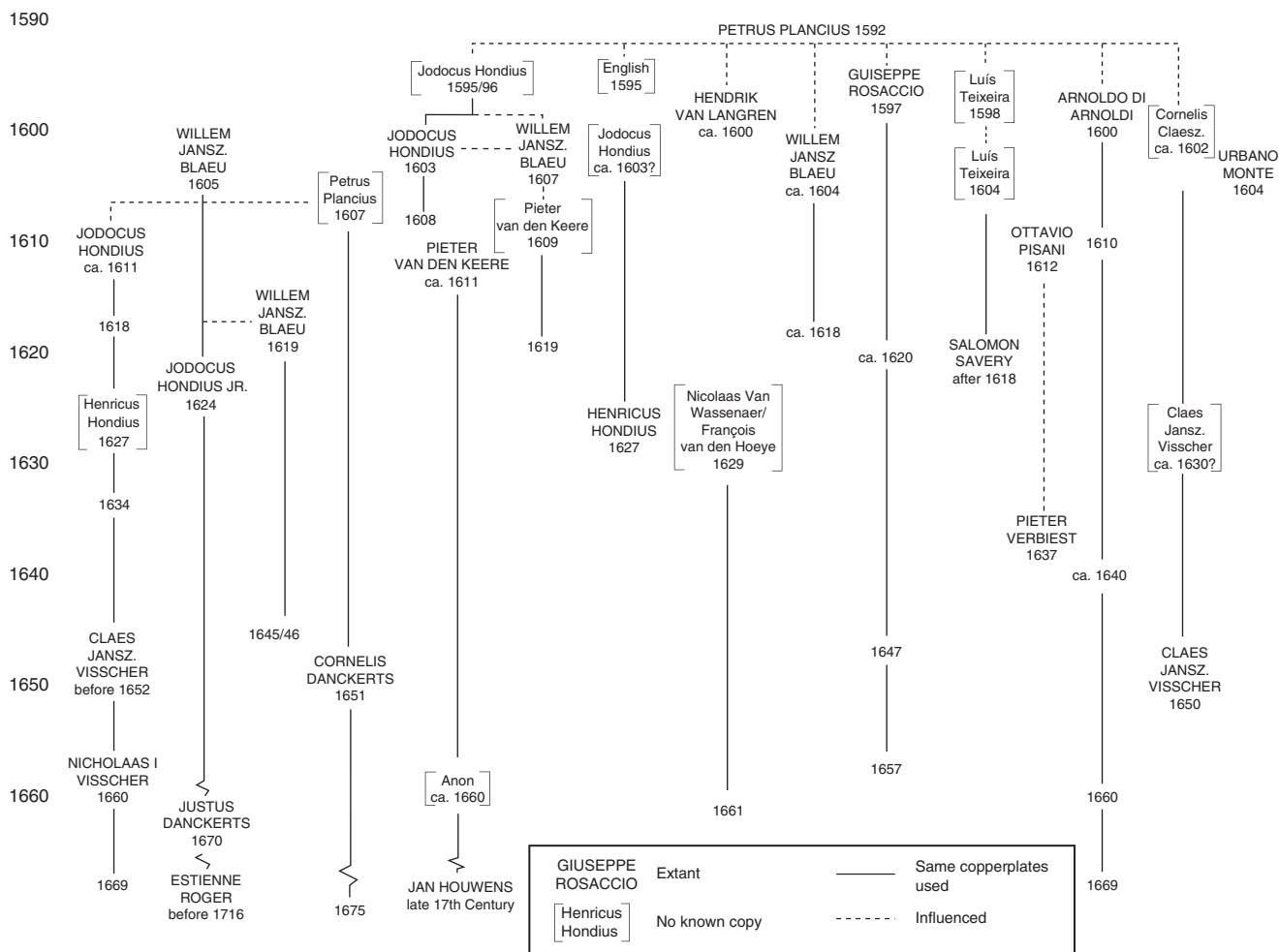


FIG. 44.26. WALL MAPS OF THE WORLD PUBLISHED BETWEEN 1592 AND 1648. All publications appeared in Amsterdam except for those published by Giuseppe Rosaccio (1597 and reprints), Urbano Monte (1604), Ottavio Pisani (1612, reprinted in 1637 by Pieter Verbiest), and Arnolfo di Arnoldi, based on Petrus Plancius's wall map of 1592 (1600

and later reprints). Where the name is in square brackets, there is no known copy of the map.

Based on Rodney W. Shirley, *The Mapping of the World: Early Printed World Maps, 1472–1700*, 4th ed. (Riverside, Conn.: Early World, 2001), 634–35, and MCN, 3:22.

one another and with other maps. We have obtained, among other things, a very accurate nautical map of Portuguese origin, as well as fourteen hydrographic detail maps. . . . Following a responsible, mutual comparison, we offer here the precise measurement and position of the lands, the oceans, and the seas according to the observations of geographers and experienced sea captains. . . . But as the exact longitudinal arrangement of places cannot be done correctly without unduly enlarging the areas near the north and south poles, we have presented this world map in two hemispheres. In addition, we have added a separate map of the northern areas, so that one can see their correct position.²⁹³

Plancius's world map was received with great enthusiasm in the Low Countries and abroad. Thomas Blundeville gave a detailed description of the map two years

after its publication, including the translation of the seventy-one map legends and the textual description of the map.²⁹⁴ Plancius's cartographic masterpiece was repeatedly copied by other publishers both domestically and abroad. It served as a model for the large world map by Hendrik Floris van Langren produced about 1600, although there are differences in both the geographic content and the decorative elements. For example, there are geographic additions in Novaya Zemlya that are in complete agreement with the discoveries of Willem Barents during his wintering-over on that island. The results of the mapping by Jan Outghersz. were not yet reworked

293. For more details, see MCN, 3:22–28.

294. Thomas Blundeville, *M. Blundeville His Exercises, Containing Sixe Treatises* (London: John Windet, 1594), 246r–78v.

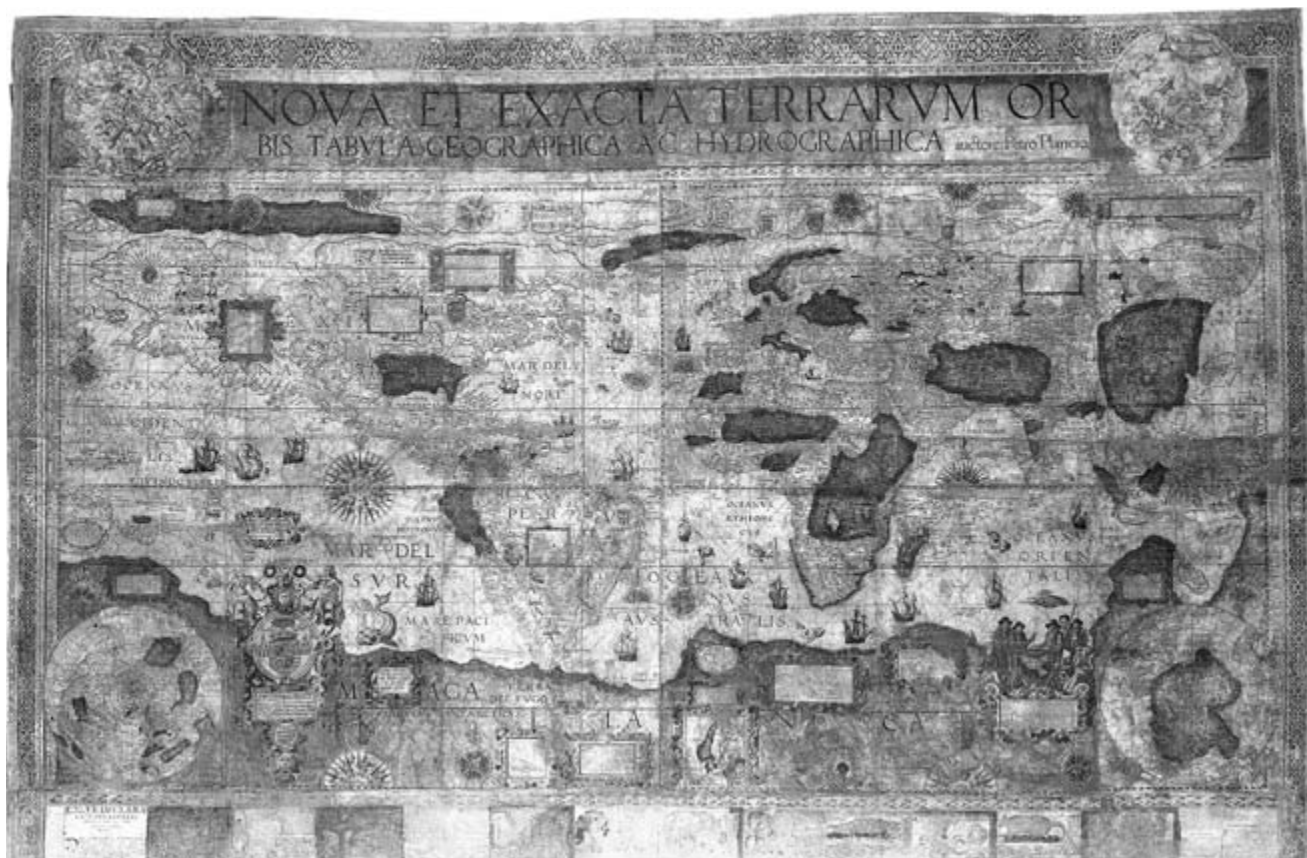


FIG. 44.27. WALL MAP OF THE WORLD BY PETRUS PLANCIUS, 1592. In eighteen sheets. Size of the original: 146 × 230 cm (without frame). Photo-

graph courtesy of the Biblioteca del Colegio Corpus Christi, Valencia.

into the Strait of Magellan, so publication of Van Langren's world map presumably occurred before the appearance of Jan Outghersz.'s printed journal in 1601. Van Langren may well have taken account of the discoveries of John Davis and Martin Frobisher.

About 1604, the year he began his cartographic work, Willem Jansz. Blaeu produced a world map in twelve sheets on a similar scale.²⁹⁵ Josua van den Ende, from Flanders, engraved the map and most of the early maps by Blaeu. His sophisticated style contributed in large measure to Blaeu's reputation in map publishing. In 1604, the charter granted to Cornelis Claesz. by the States General to publish Plancius's world map expired, so any publisher was free to copy it. Blaeu seized the opportunity, and, with the aid of the results of Dutch and English travel, was able to fill in the picture of the world that Plancius had presented. In 1618, Blaeu published a new edition of his map, which included the results of the travels of Jacob Le Maire and Henry Hudson.

Blaeu was well versed in business and knew that with a diverse offering of world maps he could control an important part of the wall map trade. Consequently, he produced a twenty-sheet wall map of the world in two hemi-

spheres in 1605,²⁹⁶ followed by a large world map on the Mercator projection in 1607.²⁹⁷ The latter had a lasting influence on other printed and manuscript maps pro-

295. Loose sheets are in the BNF (Rés. Ge DD 2974). A detailed description of the map with a reproduction of its twelve sheets at slightly more than half the original scale is found in Marcel Destombes, *La mappemonde de Petrus Plancius gravée par Josua van den Ende, 1604* (Hanoi: IDEO, 1944). A single sheet preserved in Amsterdam, Nederlands Scheepvaartmuseum, was reproduced by Wieder in *Monumenta Cartographica*, 2:56 and pl. 40c; Wieder did not know its origin at the time. See Shirley, *Mapping of the World*, 255–57 and 259 (no. 243).

296. The only known copy is in New York, Library of the Hispanic Society of America. A facsimile is in Edward Luther Stevenson, *Willem Janszoon Blaeu, 1571–1638: A Sketch of His Life and Work, with Especial Reference to His Large World Map 1605* (New York: [De Vinne Press], 1914). A facsimile of the second state of Blaeu's map revised by Jodocus Hondius, 1624, is Günter Schilder, *The World Map of 1624* (Amsterdam: N. Israel, 1977).

297. The only known copy—without decorative borders—is in the collection of Johann Friedrich Ryhiner, Bern (vol. V, nos. 61–64). This map was probably lost during World War II. A complete copy is known only from a photograph taken by F. C. Wieder, reproduced in Günter Schilder, *Three World Maps by François van den Hoeye of 1661, Willem Janszoon (Blaeu) of 1607, Claes Janszoon Visscher of 1650* (Amsterdam: N. Israel, 1981), 23–40, and in MCN, 3:63.

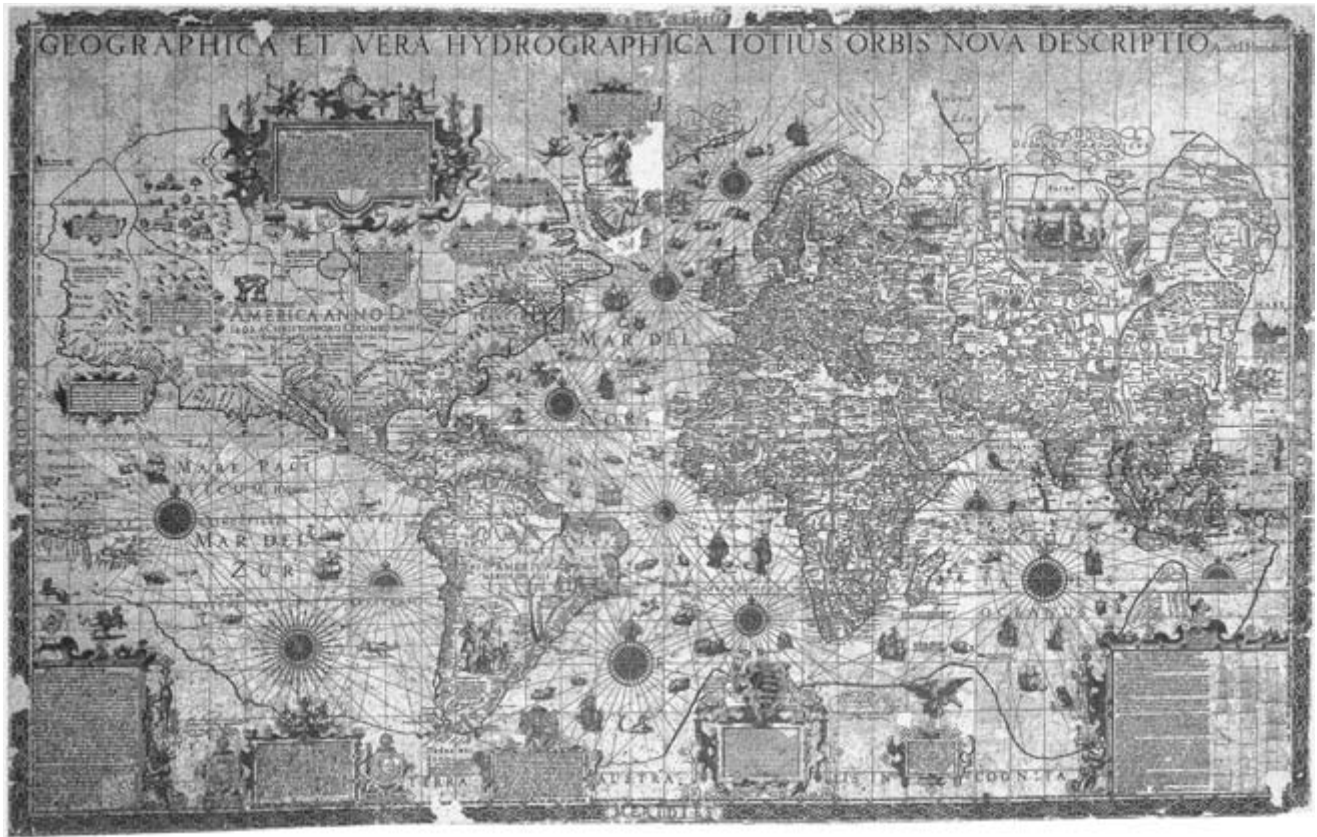


FIG. 44.28. WALL MAP OF THE WORLD BY JODOCUS HONDIUS, 1595/96. Eight-sheet map drawn on the Mercator projection.

Size of the original: 88 × 141 cm. Photograph courtesy of the Hauptstaatsarchiv Dresden (Schr. 12, F. 6, Nr. 21).

duced in the first half of the seventeenth century not only because of its content, but also because of its impressive decoration. Also in 1607, the Amsterdam publishers David de Meyne and Harmen Allertsz. put out a large world map in two hemispheres by Plancius. No example of the original edition of 1607 has yet been found. However, with the aid of written sources and later editions produced by the Danckerts family from the same plates in 1651 and 1656, a partial reconstruction is possible.²⁹⁸

Blaeu's publication of wall maps stimulated his competition. Both Jodocus Hondius and Pieter van den Keere produced wall maps of the world on the Mercator projection in 1595/96 (fig. 44.28) and 1609, respectively, and both strove to offer a greater diversity of publications.²⁹⁹ Around 1611, Hondius and Van den Keere also supplied their customers with multisheet maps of the world in two hemispheres.³⁰⁰

During the first decade of the seventeenth century, Blaeu's stock included three large wall maps of the world in various projections. He was satisfied with these offerings for a long time. In the summer of 1617, however, Jacob Le Maire's traveling companions returned from their journey around the world (1615–17). Dispatched by the

Australian Company, they had found a new southern passage between the Atlantic and the Pacific Oceans, discov-

298. MCN, 3:67–71.

299. Hondius's eight-sheet wall map on the Mercator projection was recently located by Schilder in Dresden, Sächsisches Hauptstaatsarchiv; see MCN, 5:60–61. Hondius produced a new world map on the Mercator projection in 1603, the only copy of which is located in a private American collection. The only known copy of the second state of this map is in London, Royal Geographical Society; see MCN, 3:71–75, and Edward Heawood, *The Map of the World on Mercator's Projection by Jodocus Hondius, Amsterdam 1608* (London: Royal Geographical Society, 1927). The original edition of Pieter van den Keere's wall map has not yet been found but can be described in large part with the aid of a later edition, produced by Van den Keere in 1619: BNF (Ge C 4931); see MCN, 3:75–79.

300. Schilder located a copy of the first state (1611) of Hondius's twenty-sheet world map in Dresden, Sächsisches Hauptstaatsarchiv (II/35,2); see MCN, 5:54, n. 88. For a facsimile of the second state of 1618 (Württemberg, Wolfegg Castle), see Edward Luther Stevenson and Joseph Fischer, eds., *Map of the World by Jodocus Hondius, 1611* (New York: The American Geographical Society and the Hispanic Society of America, 1907). Illustrations of the second and fourth state and a facsimile of the sixth state are in Schilder, *World Map of 1669*. The only known copy of the world map by Pieter van den Keere of ca. 1611 is preserved in San Francisco, Sutro Library; a facsimile is in Schilder and Welu, *World Map of 1611*, and see MCN, 3:91–102.

ered new islands in the Pacific, and remapped the northern coast of New Guinea. After an initial prohibition against the publication of this latest geographical information, Blaeu hastened to revise his maps and globes.³⁰¹ He gave a central place to the discoveries of the Australian Company on a new wall map of the world in 1619.³⁰² The map shows the Straits of Le Maire with a note that attributes the honor of the discovery to Willem Schouten—one of Le Maire's traveling companions, whose travel journal was printed by Blaeu—and describes the travel route and other discoveries. The map also includes significant changes in the mapped image of North America made as a result of Henry Hudson's fourth journey in 1610/11. The geographical content of the wall maps of Plancius (1607), Hondius (1608 and 1611), and Van den Keere (ca. 1611) became outdated with the appearance of the new wall map by Blaeu.

In 1645/46, Joan Blaeu republished his father's world map of 1619 with revised geographical content.³⁰³ It was the earliest printed map to incorporate cartographically the results in Australia of Abel Jansz. Tasman's two voyages. But Joan Blaeu soon started work on the publication of a new large world map. Printed from completely new copperplates, it was published in 1648 and dedicated to the Spanish ambassador on the occasion of the Peace of Westphalia.³⁰⁴ The map enjoyed three more editions during the second half of the seventeenth century.³⁰⁵ Between about 1660 and 1663, Frederick de Wit produced Blaeu's world map in a faithful, albeit somewhat reduced, copy in twelve sheets.³⁰⁶

Wall Maps of the Continents

On his arrival in Amsterdam, Jodocus Hondius published not only a world map, but also wall maps of Europe, America, Africa, and Asia on the Mercator projection from 1595 to 1598.³⁰⁷ Until Willem Jansz. Blaeu undertook the production of wall maps in 1604, Hondius had been the market leader in this area. It is possible that he also published a set of continent maps as late as 1602, as Linton claims, but no evidence of them has been found.³⁰⁸

During his Amsterdam period, Jodocus Hondius worked closely with Cornelis Claesz., the most important publisher and bookseller of his time. In his *Const ende caert-register* of 1609, Claesz. offered a set of wall maps of the four continents (Europe, Asia, Africa, and America), each in eight large sheets, for 20 stuivers each. Claesz. did not apply for a charter for this set of maps, as he had for the large Plancius world map of 1592, and it is not certain whether all the maps appeared at the same time; only the map of Europe is dated (1604). Given the geographical content, the other three maps may have appeared two years earlier.³⁰⁹ After Claesz.'s death, the copperplates of

the four continents came into the possession of Johannes Janssonius, who republished the maps in 1617.

In 1608, Blaeu published a set of maps of the continents, which signified a milestone in the cartographic production of the "Officina Blaviana." The maps of Europe, Asia, Africa, and America consisted of six sheets each: four for the maps and two for the decorative borders.³¹⁰ The copperplates were reissued by Henricus Hondius in 1624 (fig. 44.29) and later in different editions by the Visscher family, and they determined the image of the continents for fifty years.

Only the map sheets (not the decorative borders) of the original set of continent maps by Blaeu are known today. The second edition of 1612, however, makes a reconstruction of the whole possible: the four map sheets would have been framed on the sides and the lower edge by decorative borders, including costumed figures, plats, and town views, which were themselves framed by descriptive text and illustrated by several woodcuts. Josua van den Ende played an important role in the development of Blaeu's four continent maps. Although his name appears only as engraver on the map of Africa (in its second state), there is no doubt that Van den Ende was responsible for engraving the mapped image of all the continents. The

301. MCN, 3:103–5.

302. For a detailed description, a facsimile, and later editions of this map, see MCN, 3:103–258 and facsimiles 1.1–1.10. A copy is in Rotterdam, Maritiem Museum.

303. MCN, 3:259–304 and facsimiles 2.1–2.31. A copy is in Rotterdam, Maritiem Museum.

304. A facsimile of the second state is in Wieder, *Monumenta Cartographica*, 3:61–65 and pls. 51–71.

305. Shirley, *Mapping of the World*, 392–96 (no. 371).

306. Jan W. H. Werner, *Inde Witte Pascaert: Kaarten en atlasen van Frederick de Wit, uitgever te Amsterdam (ca. 1630–1706)* (Amsterdam: Universiteitsbibliotheek Amsterdam, 1994), 48–50 (afbeelding 32).

307. A copy is in Dresden, Sächsisches Hauptstaatsarchiv (XII/Fach VI/No. 21). See MCN, 5:52–61.

308. Anthony Linton, *Newes of the Complement of the Art of Navigation, and of the Mightie Empire of Cataia, Together with the Straits of Anian* (London: Felix Kyngston, 1609), 14 and 41.

309. The map of Europe is located in the private collection of Niewodniczanski in Bitburg. The wall maps of Asia and America are in Amsterdam, Nederlands Scheepvaartmuseum, and in the BNF (Rés. Ge B 1115 [Kl.560]), respectively. The map of Africa by Cornelis Claesz. is known only from an incomplete copy of the second edition by Janssonius; that edition is located in the BNF (Ge DD 5081 [1–6]). See MCN, 5:61–75, and 7:337–70 and facsimiles 36.1–36.8, 37.1–37.8, 38.1–38.8, and 39.1–39.8.

310. Copies of the first state of the wall map of Europe are located in Burgdorf, Rittersaalverein, and in the BL (Maps 185.m.1 [18]). The wall map of Asia is in Burgdorf, Rittersaalverein, and in the BNF (Ge C. 4930 [ex coll. Klaproth nr. 745]). Blaeu's wall map of Africa is located in the BNF (Ge C 4928) [ex coll. Klaproth nr. 545]) and in Chicago, Newberry Library (Novacco collection, the two lower sheets only). The only known copy of the first state of the wall map of America is in Burgdorf, Rittersaalverein. See MCN, 5:75–213 and facsimiles 1.1–1.14, 2.1–2.14, 3.1–3.14, and 4.1–4.14.

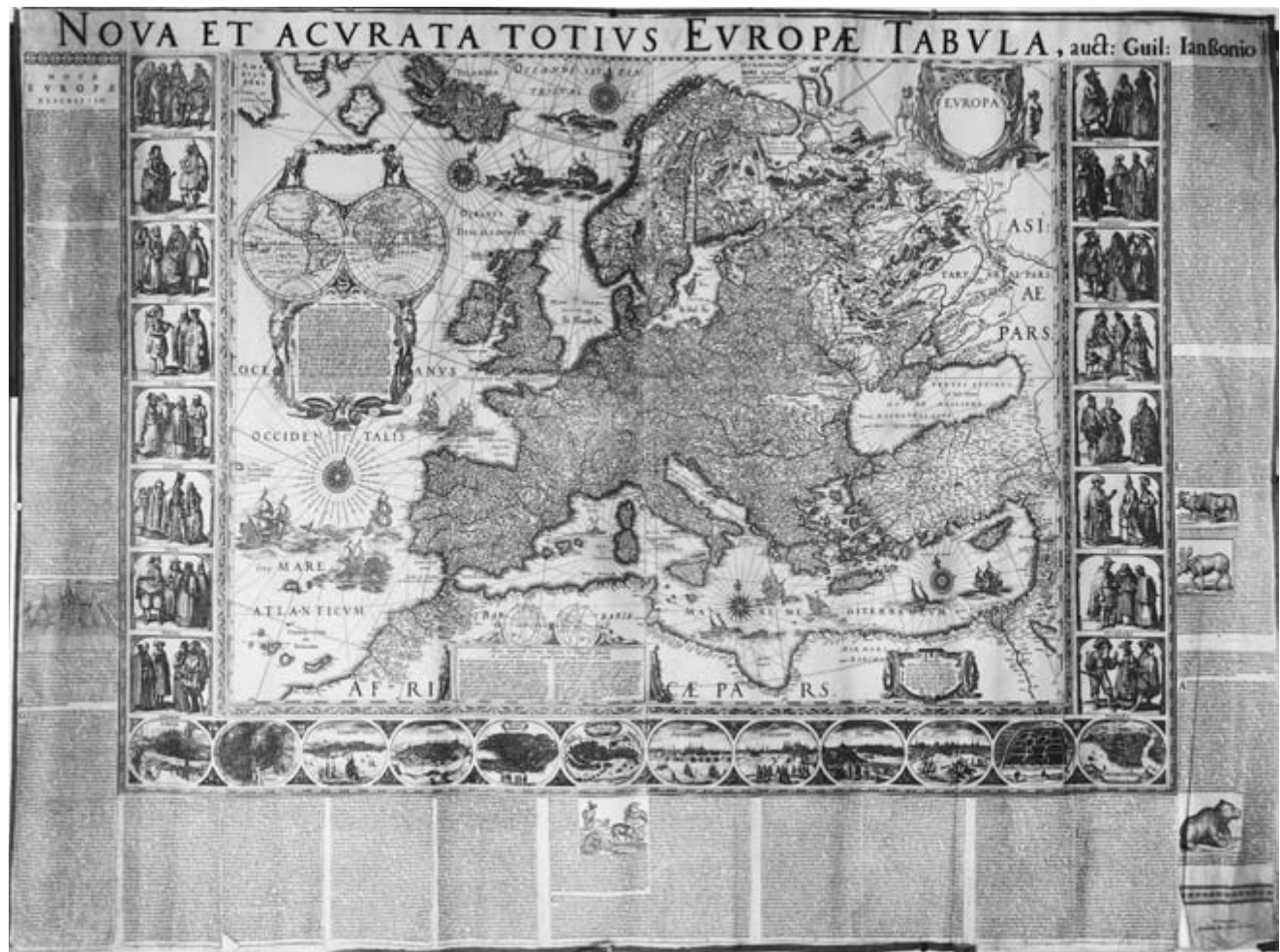


FIG. 44.29. WILLEM JANSZ. BLAEU'S 1608 WALL MAP OF EUROPE, REPRINTED BY HENRICUS HONDIUS, 1624. Size of the original: 118.5 × 167 cm. Photograph courtesy of

the Klassik Stiftung Weimar/Herzogin Anna Amalia Bibliothek (Kt 080-43 R).

decorative borders and finishing touches were the work of Hessel Gerritsz.³¹¹

Blaeu's map of Europe was a clear advance over those published by Jodocus Hondius in 1598 and Cornelis Claesz. in 1604. Blaeu was able to rely, in part, on his own folio editions of various European countries, which had appeared in the first years of the seventeenth century. In addition, his own pilot's guide, *Licht der zeevaart* of 1608, and the world atlas that Jodocus Hondius published in 1606 played an important role in the compilation of Blaeu's wall map of 1608. The coastlines of Europe, aside from the Mediterranean coasts, were based on mapping by the Dutch shipping trade.

Blaeu's wall map of Asia corresponds very closely to the depiction on his large wall map of the world of 1605. The coastlines of South and East Asia were largely based on original mapping by the Portuguese. Further information came from Jan Huygen van Linschoten's *Itinerario*.

Knowledge of northeast Asia, however, was a weak point for cartographers, including Blaeu, and in order to disguise this lack of information, Blaeu used that area for extended textual explanations.

Blaeu also used the large world map of 1605 extensively in preparing the map of Africa. Portuguese material was exceptionally important to the cartography of that continent and considerably influenced the nautical maps of the Low Countries published by Cornelis Claesz. at the end of the sixteenth century; the maps included in Van Linschoten's *Itinerario* were based in large part on these nautical maps. It was in the southernmost part of Africa on Blaeu's wall map that the oldest voyages of the Low Coun-

311. An exception is the map of America on which the decorative elements of the map image were etched by Hessel Gerritsz., whereas—unlike on the three other maps of the continents—the costumed figures were the work of an anonymous engraver.

tries, including those of Cornelis de Houtman, made their cartographic mark.

Finally, the primary source in the preparation of the wall map of America was once again the world map of 1605. Consonant with contemporary geographical knowledge, the depiction of North America showed it much too wide. The representation of the northeast was the result of English explorations undertaken in search of a northwest passage. Blaeu's map provides numerous place-names along the coasts of Baffin Land, which were given during Davis's travels. The representation of the Bay of Fundy, Nova Scotia, and particularly the St. Lawrence River, reflects the exploration and mapping undertaken by French discoverer Samuel de Champlain in 1603–7.³¹² The depiction of the northwest coast of North America included a great many place-names, and mapmakers were as likely to take them from someone else's map as to add new, fictitious names in an attempt to trump the competition.³¹³ The cartography of Central and South America was largely based on Portuguese and Spanish material, although one can also discern traces of the results of English and Dutch voyages. In mapping both southern passages between the Atlantic and the Pacific Oceans, it was the Dutch who did the pioneering work.³¹⁴ On the Blaeu editions of 1608 and 1612, the depiction of the Strait of Magellan was drawn from the record of Jan Outghersz., who mapped the area in 1600 from the ship *Het Ge-loof*.³¹⁵ Several place-names also date from the expedition of Olivier van Noort.³¹⁶ Henricus Hondius made some changes on his edition of the continent map of America based on the travels of Jacob Le Maire and Willem Schouten (1616), the brothers Bartolomé García and Gonzalo de Nodal (1619), and Jacques l'Hermite and Jan Huygen Schapenham in the so-called Nassausche Vloot (Fleet of Nassau) in 1624.³¹⁷

Imitations of Blaeu's continental maps were produced in both Italy and France (fig. 44.30).³¹⁸ In the course of the seventeenth century, the wall maps were reengraved in Venice, Rome, and Bologna and published in various editions.³¹⁹ The Dutch maps were also copied in Paris. Alexis-Hubert Jaillot produced a French edition in 1669 for which Blaeu's maps and decorative borders were models, but Blaeu's Latin texts were replaced with French translations. No other completely new set of maps of the continents appeared until the second half of the seventeenth century, when Joan Blaeu published six-sheet wall maps of Europe, Africa, north and Southeast Asia, and North and South America in 1659. De Wit came out with his own six-sheet maps of the four parts of the world in 1672.³²⁰

Wall Maps of Countries and Provinces

Wall maps of smaller areas—countries and regions—began to roll off the Amsterdam presses about 1610. Willem

Jansz. Blaeu provided the initiative for new and original wall maps after the first decade of the seventeenth century. He demonstrated unceasing enthusiasm for the production of multisheet maps of European countries and provinces of the Low Countries. From a privilege dated 26 March 1608, we know that he had already published a large map of the Seventeen Provinces. No copy of this original edition is known, but a later edition of 1622, with the map itself surrounded by town views, a series of portraits on horseback, and a French description dated 1631 with Blaeu's impression, has been rediscovered.³²¹ Van den Ende and Hessel Gerritsz. are described as the engravers, and the copperplates appear to have had a long life; Joan Blaeu used them again with some minor corrections for a new edition in 1658.

A recently found wall map of Germany in six sheets by Blaeu was published in 1612.³²² In the title of the map, Blaeu referred to Rumoldus Mercator's map (in twelve sheets, published in 1590) as his source. He also made use of his own wall map of the Seventeen Provinces from 1608 and the map of East Friesland by Ubbo Emmius. Blaeu made little effort to improve Mercator's wall map,

312. For a detailed analysis of Champlain's mapping, see chapter 51 in this volume.

313. More on this subject appears in Henry Raup Wagner, *The Cartography of the Northwest Coast of America to the Year 1800*, 2 vols. (Berkeley: University of California Press, 1937), 103–10.

314. For a detailed cartographic study of the role of the Dutch in the mapping of this region, see MCN, 3:222–38.

315. Jan Outghersz., *Nieuwe volmaecte beschryvinghe der vervaerlijcker Strate Magellani . . .* (Amsterdam: Zacharias Heyns, 1600).

316. Olivier van Noort, *De reis om de wereld, door Olivier van Noort, 1598–1601*, 2 vols., ed. J. W. IJzerman (The Hague: Martinus Nijhoff, 1926).

317. For a detailed study on the Le Maire expedition, see W. A. Engelbrecht and P. J. van Herwerden, eds., *De ontdekkingsreis van Jacob Le Maire en Willem Cornelisz. Schouten in de jaren 1615–1617: Journalen, documenten en andere bescheiden*, 2 vols. (The Hague: Nijhoff, 1945).

318. MCN, 5:189–213.

319. Roberto Almagià, "Alcune preziose carte geografiche di recente acquisite alle Collezioni Vaticane," in *Collectanea Vaticana in honorem Anselmi M. Card. Albareda a Bibliotheca Apostolica edita*, 2 vols. (Vatican City: Biblioteca Apostolica Vaticana, 1962), 1:1–22.

320. Werner, *Inde Witte Pascaert*, 50–54, contains second editions from 1700. The copies described are in Amsterdam, Universiteitsbibliotheek (Kaartenz. W.X., afbeeldingen 15 and 33–37).

321. Two copies of the 1622 state have been preserved, one in Göttingen, Niedersächsische Staats- und Universitätsbibliothek (this copy lacks the upper border with figures on horseback), the other in the BNF (Rés. Ge A 550). See MCN, 1:110–43 and facsimiles 2.1–2.22.

322. Two copies are known, one in Nuremberg, Staatsarchiv (Nürnbergger Karten und Pläne no. 1140), and one in Bitburg in the private collection of Niewodniczanski. See MCN, 5:264–68 and facsimiles 6.1–6.16. A facsimile of the map in the Niewodniczanski collection and a detailed introduction are in Peter H. Meurer, *Willem Janszoon Blaeu: Nova et accurata totius Germaniae tabula (Amsterdam 1612)* (Alphen aan den Rijn: Canaletto, 1995).



FIG. 44.30. VENETIAN IMITATION OF BLAEU'S WALL MAP OF ASIA. Probably published by Stefano Scolari in 1646.

Photograph courtesy of the Geography and Map Division, Library of Congress, Washington, D.C. (G7400 1673.B5).

and the only change to a later edition of this map was the replacement of the name Janssonius with Blaeu. It should be noted, however, that there really was too little progress in Dutch regional cartography after 1590 for it to be possible to make any essential improvements in the mapped image. A third edition (1639) was more decorative, with the enlargement of town views and portraits of reigning sovereigns.³²³ In 1659, Joan Blaeu published a new edition of the map by changing only the date in the title and the address on the copperplates.³²⁴

A wall map of Italy in six sheets, based on the large map of 1608 by Giovanni Antonio Magini,³²⁵ and a map of Flanders in six sheets,³²⁶ also published by Willem Jansz. Blaeu, have been discovered. In publishing regional maps, Joan Blaeu made use of his father's legacy, and, using the elder Blaeu's copperplates, Joan published, among other things, the wall maps of the Seventeen Provinces, Germany, and Italy. Joan's original work included wall maps of Dutch Brazil (1647), the Holy Land (ca. 1655), China (1658), and Scandinavia (ca. 1659).³²⁷

Other publishers devoted themselves to the wall map trade, albeit to a lesser degree. Hugo Allard, for example, published a multisheet map of Southeast Asia, and one year later, in 1653, he brought out a wall map of the British Isles based on material by Saxton, Norden, and Speed. In comparison to the wall map of England that

323. A copy is in the BNF.

324. Copies are in Berlin, Staatsbibliothek (Atlas of the Great Elector, map V); Dresden, Sächsische Landesbibliothek (A 17207, without decorative borders); Copenhagen, Det Kongelige Bibliotek (1151-0-1659/1); and the BL (Klenck Atlas, map XVII).

325. A copy is in the BL (Klenck Atlas, Map XVI). See *MCN*, 5:333–53 and facsimiles 9.1–9.16.

326. A copy is in Middelburg, Zeeuwsch Genootschap voor Wetenschappen. See *MCN*, 5:364–66 and facsimiles 10.1–10.9.

327. Günter Schilder, "Der 'Riesen'-Atlas in London: Ein Spiegel der niederländischen Wandkartenproduktion um 1660," in *8. Kartographiehistorisches Colloquium Bern*, 3.–5. Oktober 1996: *Vorträge und Berichte*, ed. Wolfgang Scharfe (Murten: Cartographica Helvetica, 2000), 55–74.



FIG. 44.31. DETAIL OF PIETER VAN DEN KEERE'S WALL MAP OF THE SEVENTEEN PROVINCES, 1607.

Size of the entire original: 151 × 165 cm; size of the detail: ca. 22.6 × 11.3 cm. Photograph from Günter Schilder, *Pieter van den Keere, Nova et accurata geographica descriptio inferioris Germaniae (Amsterdam, 1607)* (Alphen aan den Rijn: Canaletto, 1993). Permission courtesy of Uitgeverij Canaletto/Repro-Holland, Alphen aan den Rijn.

Cornelis Danckerts published in 1644, Allard's map offered a much better representation of this part of the kingdom of the British Isles. Also worthy of note is the multi-sheet map of the Seven United Provinces of 1651 by Cornelis Danckerts.³²⁸ This was the first wall map after the Treaty of Münster in 1648 to represent the central area of the new republic.

Separate mention should be made of the edition of Amsterdam wall maps of the Seventeen Provinces (see ap-

pendix 44.6 for a summary of all multisheet maps of the Low Countries). Despite the opposition of the northern regions to Spanish authorities, map publishers continued to represent the old administrative entity, the Seventeen Provinces, for a long time. Even after the Treaty of Münster, when the division between the northern and southern Low Countries became definitive, they generally preferred summary maps of the Seventeen Provinces. The oldest wall map of the northern Low Countries appeared in 1593 from the hand of Jodocus Hondius. Although no copies have survived, there is a smaller edition signed by Hondius dated 1593.³²⁹ Even before 1598, Pieter van den Keere, working with Jodocus Hondius, is believed to have published a four-sheet map of the Low Countries.³³⁰

A brilliantly decorated wall map of the Seventeen Provinces from 1607 has only recently come to light (fig. 44.31).³³¹ Van den Keere brought a similar folio map of the Low Countries onto the market that same year.³³² Apparently the year 1607, during which the negotiations on the Twelve-Year Truce began and victory in a sea battle at Gibraltar took place, offered a commercially favorable opportunity for introducing both types of maps.

Willem Jansz. Blaeu also brought out wall and folio maps of the Seventeen Provinces in 1608.³³³ Following the publication of these maps, Blaeu never again ventured to produce a new map of the Low Countries. The folio map was never reworked, although the wall map was sketched in with, among other things, land reclamation in North Holland after 1622. The copperplates of the wall map of 1608 had a long life; in 1658, they were used by Joan Blaeu for an essentially unchanged edition.

A newer mapped image came out in 1647 in a six-sheet wall map of the Seventeen Provinces by Michael Florent van Langren.³³⁴ The first edition was intended as a two-sheet map, but Van Langren quickly expanded it with four additional sheets. It was reprinted until the end of the seventeenth century, and it also served as a model for several eighteenth-century wall maps of France and the southern Low Countries.

328. For the maps mentioned in this paragraph, see Schilder, "Der 'Riesen'-Atlas."

329. Van der Heijden, *Oude kaarten der Nederlanden*, 1:88–89 and 232–38.

330. Only a copy of the second edition of 1602 has survived, in Leiden, Universiteitsbibliotheek (BN 29.04.94). See Van der Heijden, *Oude kaarten der Nederlanden*, 1:277–80, and MCN, 1:52–53 and 55–56.

331. The only known copy is in the private collection of Tomasz Niewodniczański in Bitburg. See Van der Heijden, *Oude kaarten der Nederlanden*, 1:290–94, and Schilder, *Pieter van den Keere*.

332. Van der Heijden, *Oude kaarten der Nederlanden*, 1:295–99. A facsimile is in MCN, 6:247–49 and facsimile 43.

333. In MCN, 6:251–53 and facsimile 44.

334. See MCN, 1:58–61. Copies are in the BNF (Ge AA 1018), and Vincennes, Service Historique de la Marine (vol. 24, no. 10).

A modern and detailed overview of the Seventeen Provinces was first provided by Frederick de Wit's nine-sheet wall map.³³⁵ Produced before 1661, it shows an extensive network of roads for the first time and also devotes special attention to peat cutting. De Wit's map was a synthesis of the various provincial maps from the seventeenth century, and it was reprinted well into the eighteenth century.

Multisheet Town Plans and Profiles

Production and distribution of multisheet town views and profiles that combined cartographic and topographic representation blossomed in seventeenth-century Amsterdam, providing good conditions for the production of topographical prints. The combination of business sense and artistic sensibility ensured high quality in the production of town views, for which distribution was guaranteed by means of the excellently organized print, map, and book trade. Amsterdam's production included not only towns in the Low Countries but other important European capitals and industrial centers.³³⁶ Most of Amsterdam's elongated town profiles were made at the time of the Twelve-Year Truce (1609–21) between the northern Low Countries and Spain.

Artists and engravers in the Northern Provinces continued the tradition of large-format topographical illustration introduced in Antwerp in the early sixteenth century.³³⁷ Pieter Bast appears to have been the creator of the Dutch style of elongated profiles, to which much foreground detail was added (fig. 44.32).³³⁸ The city views by Bast and his followers, Willem Jansz. Blaeu, Claes Jansz. Visscher, Pieter van den Keere, Jodocus Hondius, and Johannes Janssonius, contain an abundance of figures, ships, and products in the foreground, giving an impressive picture of the town's industrial and commercial life. Elongated profiles of European cities were among the most profitable artistic products of the seventeenth-century Amsterdam printing industry.

Wall Maps Bound into Giant Atlases

In the 1660s, a number of fully mounted Amsterdam-produced wall maps were bound together in giant atlases on special order. These giant atlases form an extremely important source of knowledge about the seventeenth-century wall maps of the Low Countries.³³⁹ Three of these giant atlases are extant. The so-called Klenck Atlas was presented to Charles II of England by a group of Amsterdam merchants on the occasion of his restoration.³⁴⁰ In 1664, Johan Maurits van Nassau presented his feudal overlord, Friedrich Wilhelm of Brandenburg (the Great Elector), with a giant atlas (fig. 44.33).³⁴¹ The third was

ordered by Duke Christian I of Mecklenburg and is now in Rostock.³⁴²

It is fortunate that wall maps were bound in this manner. Those who made these gift atlases saved a number of priceless and precious cartographic documents from destruction. The importance of their contents to our knowledge of the contemporary state of cartography and geography can hardly be overestimated. These atlases captured cartographic activities in the Low Countries at their peak and offer a glimpse of the Dutch contribution to the European wall map tradition.

GLOBES FROM THE LOW COUNTRIES (TO CA. 1680)

Globe production in the Low Countries started in 1526/27 with the publication of a globe pair by Roeland Bollaert in Antwerp and continued until the end of the nineteenth century, with exceptional growth during the first half of the seventeenth century in Amsterdam.³⁴³ In particular, Willem Jansz. Blaeu's globes gave Dutch globes a worldwide reputation that was continued under his successors for more than one hundred years. Just how exceptional this period actually was for globe production

335. Van der Heijden, *Oude kaarten der Nederlanden*, 1:479–84; see MCN, 1:61–63 and 70. Copies of the first edition from before 1661 are in Leiden, Universiteitsbibliotheek (VI.10.66/75), and Vincennes, Service Historique de la Marine (vol. 24, no. 81).

336. Van 't Hoff, "Grote stadspanorama's."

337. See the great series of Hollstein, *Dutch and Flemish Etchings*.

338. George S. Keyes, *Pieter Bast* (Alphen aan den Rijn: Canaletto, 1981).

339. Schilder, "Der 'Riesen'-Atlas," and A. H. Sijmons, "Reuzenatlassen," *Antiek* 6 (1972): 565–78.

340. It is now in the BL; see Schilder, "Der 'Riesen'-Atlas," and Franz Reitingner, "Bribery not War," in *The Map Book*, ed. Peter Barber (London: Weidenfeld & Nicholson, 2005), 164–65.

341. Berlin, Staatsbibliothek; see Egon Klemp, *Kommentar zum Atlas des Grossen Kurfürsten = Commentary on the Atlas of the Great Elector* (Stuttgart: Belsler, 1971).

342. Rostock, Universitätsbibliothek; see Gerhard Schmidt and Sigrud Hufeld, "Ein Superatlas aus Rostock," *Wissenschaftliche Zeitschrift der Universität Rostock* 5 (1966): 875–90; Karl-Heinz Jügel, "Der Rostocker Große Atlas," *Almanach für Kunst und Kultur im Ostseebezirk* 7 (1984): 29–35; and Christa Cordshagen, "De herkomst van de reuzenatlas in Rostock," *Caert-Thresoor* 18 (1999): 41–43. The acquisition of the giant atlas cost the duke 750 guilders.

343. The earliest known mention of a globe by a Dutch artisan comes from a letter written by the theologian and historian Johannes Trithemius to Wilhelmus Veldicus, dated 12 August 1507. Veldicus must have had a workshop in which at least one globe was made and sold to Heinrich von Bünau. Although Veldicus was Dutch, his workshop must have been located in Dirmstein, near Frankenthal, in modern Germany. See Klaus Arnold, *Johannes Trithemius (1462–1516)*, new ed. (Würzburg: Kommissionsverlag Ferdinand Schöningh, 1991). The original of this letter is found in the Biblioteca Apostolica Vaticana (Cod. Vat. Pal. Lat. 730).

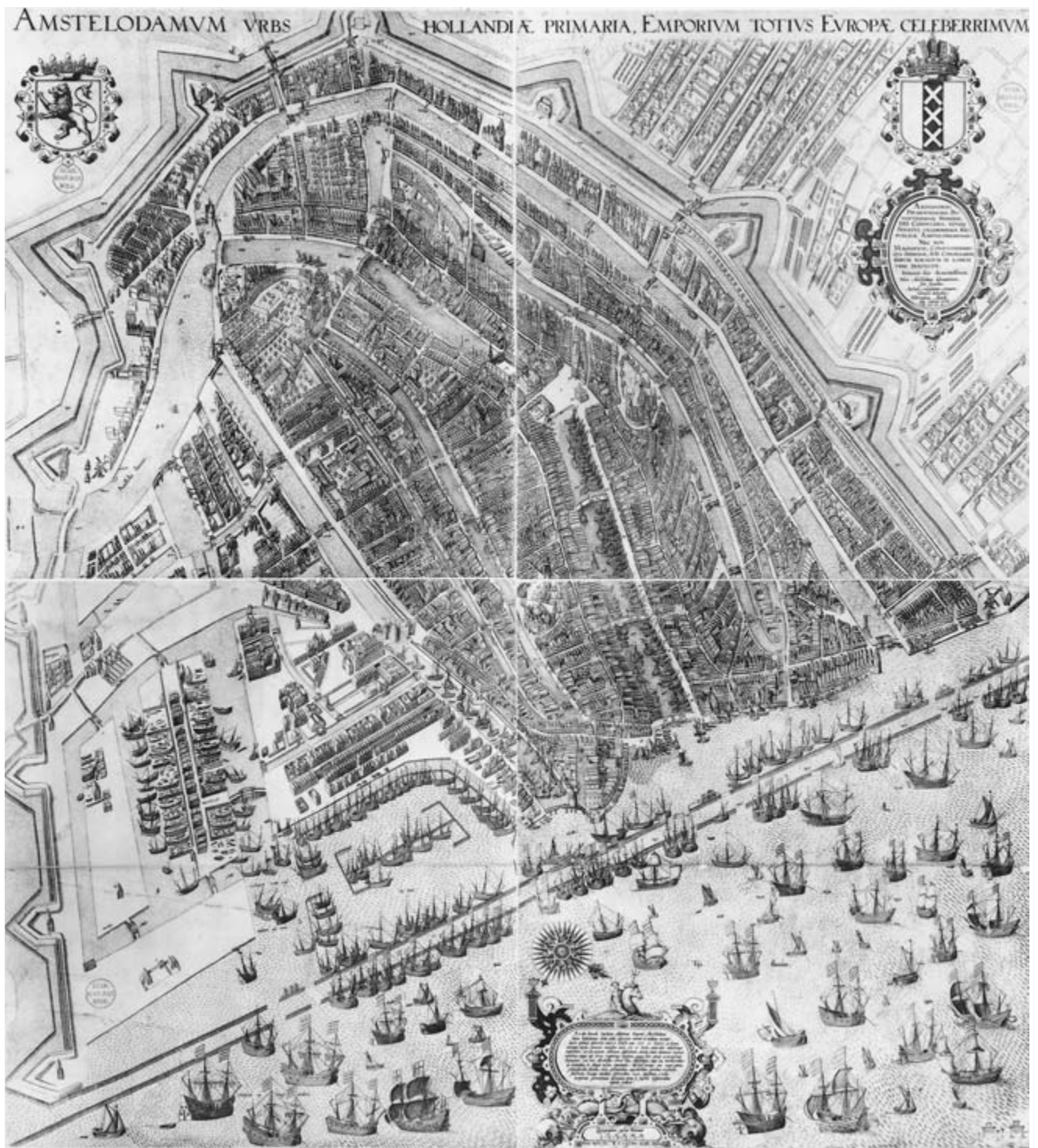


FIG. 44.32. PIETER BAST'S BIRD'S-EYE VIEW OF AMSTERDAM, 1597.

Size of the original: 93 × 82 cm. Photograph courtesy of the Universiteitsbibliotheek Leiden (P26 N20 [1-4]).

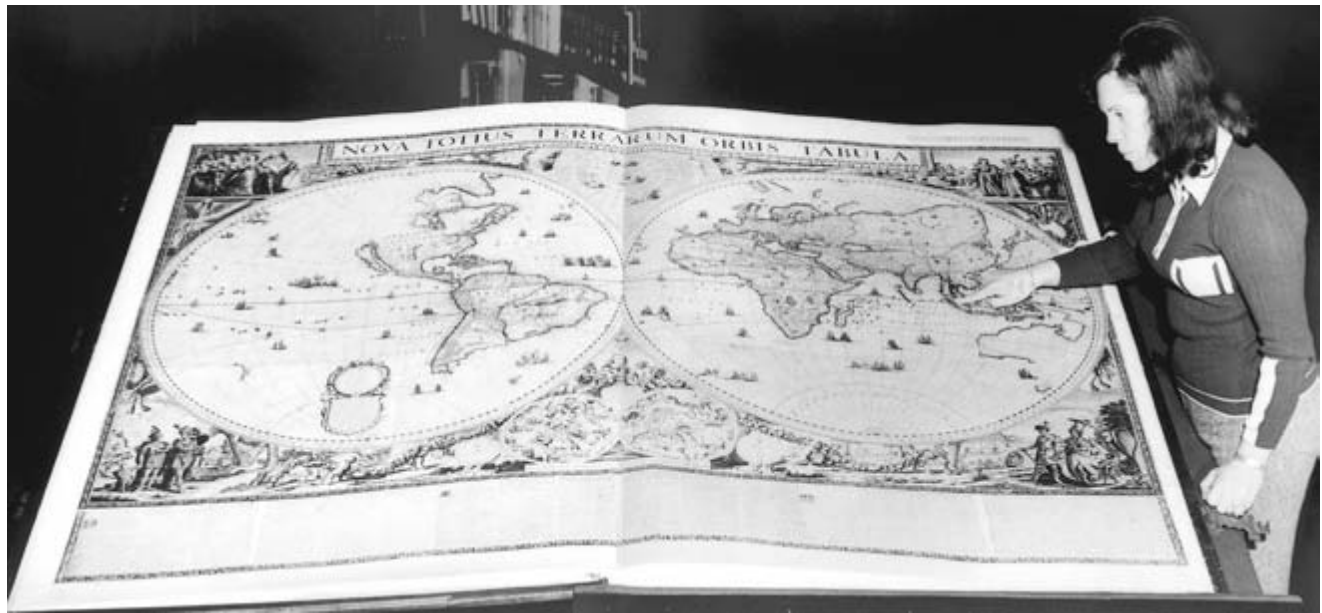


FIG. 44.33. GIANT ATLAS—THE “ATLAS OF THE GREAT ELECTOR.” Presented to Friedrich Wilhelm, elector of Brandenburg, in 1664.

Size of the original: 170 × 222 cm when open. Photograph courtesy of the Staatsbibliothek zu Berlin Preußischer Kulturbesitz.

becomes clear from figure 44.34, detailing the number of new globes before 1720.

Taking into account globe production up to 1680, the following discussion is devoted to three phases: the earliest production during the first half of the sixteenth century (Gemma Frisius and Mercator); production centered in Amsterdam from 1585 to 1606 (Van Langren, Hondius, Blaeu); and production in the seventeenth century and its decline after 1650.³⁴⁴

EARLY GLOBE PRODUCTION DURING THE FIRST HALF OF THE SIXTEENTH CENTURY

Just as was the case with cartography in general, a lively interest in globes emerged at the beginning of the sixteenth century. De Smet gives a brief survey of manuscript and printed globes from about 1526 to 1551, both extant globes and those known only from written sources.³⁴⁵ He based this work on the correspondence of Johannes Dantiscus, the Polish envoy to the Low Countries who arrived in Brussels around 1530.³⁴⁶ However, Dantiscus corresponded with humanists, intellectuals, and politicians—not with tradesmen or seafaring people—so this source does not give a complete picture of the contemporary interest in globes.

The First Printed Globes in the Low Countries

In the second decade of the sixteenth century, in southern Germany, Johannes Schöner was the only producer of

globes, both terrestrial and celestial, with printed segments. Yet the demand for this cartographic material was so great that he was unable to meet it alone. Thus, it is not surprising that a publisher in a commercial center such as Antwerp would come up with the idea of copying Schöner's works, carrying out the production in Louvain, where people had experience in making scientific instruments and where he could find experts and scholars to provide the scientific basis.

In 1527 in Antwerp, Maarten de Keyser (Martinus Caesar) reprinted Schöner's manual for the celestial globe, intending for it to accompany a globe that Gaspard van der Heyden had already made or would make. Sometime before or during 1527, Van der Heyden produced a terrestrial globe that does not survive, but it is known from the frontispiece of Franciscus Monachus's booklet *De orbis situ* (1526/27), which provides a description of Van der Heyden's terrestrial globe and also depicts the globe turned to show both the Old and the New Worlds (see fig. 10.2). Four individuals were involved with this pair of

344. The section on Dutch globes to about 1680 is heavily based on GN.

345. Antoine De Smet, “Das Interesse für Globen in den Niederlanden in der ersten Hälfte des 16. Jahrhunderts,” *Der Globusfreund* 15–16 (1967): 225–33, reprinted in *Album Antoine De Smet* (Brussels: Centre National d'Histoire des Sciences, 1974), 183–91.

346. Henry de Vocht, *John Dantiscus and His Netherlandish Friends as Revealed by Their Correspondence, 1522–1546* (Louvain: Librairie Universitaire, 1961).

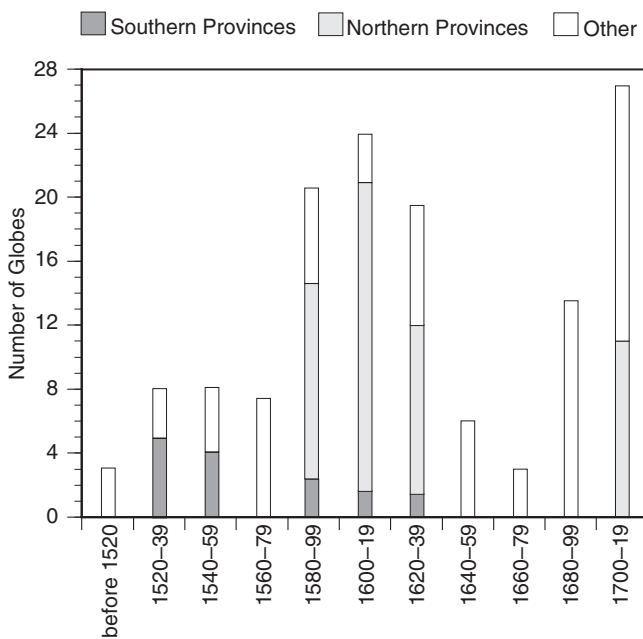


FIG. 44.34. DUTCH SHARE OF WORLD GLOBE PRODUCTION (NEW EDITIONS OF PRINTED GLOBES) TO 1720.

globes. First, Roeland Bollaert of Antwerp published *De orbis situ* and Schöner's manual. Second, engraver, goldsmith, and scientific instrumentmaker Gaspard van der Heyden engraved both the terrestrial globe (1526/27) and the celestial globe (1527).³⁴⁷ According to De Smet, Van der Heyden was a well-known figure among the humanists in Louvain.³⁴⁸ Third, Jean Carondelet, archbishop of Palermo, was the person to whom *De orbis situ* was addressed and the "initiator" of the publication of the celestial globe. Finally, and connected solely with the terrestrial globe, Franciscus Monachus was author of *De orbis situ*.

New Globes by Gemma Frisius and Mercator

Bollaert found another collaborator for his cosmographic publications, a young student from Dokkum known later by the name Gemma Frisius, who would become a pioneer in Dutch globe production. In 1529, Bollaert published Peter Apian's *Cosmographicus liber*, "carefully corrected, with the mistakes removed, by Gemma Frisius," and in 1530, Gemma Frisius's *De principiis astronomiae & cosmographiae de[que] vsu globi ab eodem editi* was published by Joannes Grapheus. This was an explanatory text for a terrestrial globe Gemma Frisius had constructed or was preparing to construct at the age of twenty-one. Unfortunately, no copy survives.³⁴⁹

Why was a new globe made? Apparently, Gemma Frisius had different ideas about the form of the world than Monachus, particularly with respect to a reputed connection between America and Asia. Monachus depicted

them as one landmass on his globe, but Gemma Frisius doubted that the connection existed. We might surmise that Gemma Frisius represented America and Asia as separate continents on his first globe as he did on his second, larger terrestrial globe published with Van der Heyden in about 1536.

A few years later, about 1536, Gemma Frisius constructed a new, even larger, terrestrial globe (37 cm), which Van der Heyden engraved and printed.³⁵⁰ A celestial globe by Gemma Frisius of the same diameter appeared in 1537, perhaps preceded by a manuscript version.³⁵¹ Gemma Frisius made no more globes after these, although copies of his globes were still sold in the 1570s. His manual, *De principiis*, also enjoyed a number of revised editions.

In 1541, in Louvain, Gemma Frisius's former student Gerardus Mercator engraved and published a new terrestrial globe (42 cm).³⁵² Along with Gaspard van der Heyden, Mercator had already engraved Gemma Frisius's globe pair of 1536/37. Although publishing a terrestrial globe on his own would have made Mercator a direct competitor of his tutor, there does not seem to have been any serious rivalry or competition between them.

Dissatisfaction with current globes prompted Mercator to make a terrestrial globe. His new globe showed how the Ptolemaic map should be adjusted to include the newly discovered areas in India. He also disagreed with contemporary opinion that the recently discovered peninsula of Malacca was the same as Ptolemy's Golden Chersonnese Peninsula. In describing Europe, Mercator made impor-

347. GN, 41–48 and 409 (BOL I). The complete text of *De orbis situ* is reprinted as appendix III in Lucien Gallois, *De Orontio Finaeo gallico geographo* (Paris: E. Leroux, 1890), 87–105.

348. De Smet, "L'orfèvre et graveur Gaspar vander Heyden."

349. See GN, 410 (FRI I), and for Gemma Frisius's globe manual, see pp. 143–47.

350. Two copies of this terrestrial globe are known. One was formerly in the Gymnasium Franciscum of Zerbst (Germany) and was lost as result of World War II. The second copy was purchased by Robert Haardt in 1951; it now belongs to Rudolf Schmidt and is on loan to the Globenmuseum of the Österreichische Nationalbibliothek in Vienna. See Robert Haardt, "The Globe of Gemma Frisius," *Imago Mundi* 9 (1952): 109–10; Erich Woldan, "Der Erdglobus des Gemma Frisius," in *Unica Austriaca: Schönes und Grosses aus kleinem Land*, Notring Jahrbuch 1960 (Vienna, 1960), 23–25; and GN, 410–12 (FRI II).

351. There are two known copies of this celestial globe. The one in Zerbst was lost at the same time as the terrestrial globe. The remaining known example is housed in London, National Maritime Museum (inv. no. G.135); see Elly Dekker, "Uncommonly Handsome Globes," in *Globes at Greenwich: A Catalogue of the Globes and Armillary Spheres in the National Maritime Museum*, by Elly Dekker et al. (Oxford: Oxford University Press and the National Maritime Museum, 1999), 87–136, esp. 87–91, and, in the catalog section, 341–42; GN, 410–12 (FRI II); and De Smet, "Das Interesse für Globen," 228–29 (187–89 in reprint).

352. GN, 413–15 (MER).

tant improvements on Gemma Frisius, particularly in the area between Greenland and the Ural Mountains. The new image was based on the 1532 map of Scandinavia by Jacob Ziegler and the *Carta marina* by Olaus Magnus.³⁵³ From the latter Mercator also borrowed Magnetum Insula (the magnetic island) near the north pole. For Africa, he relied primarily on Martin Waldseemüller's *Carta marina navigatoria* (Strasbourg, 1516), a source largely ignored by Gemma Frisius.³⁵⁴ One striking feature is the large southern continent called Quinta . . . pars (the fifth part or continent), where Mercator placed the lands of Beach and Maletur, citing Marco Polo and Lodovico de Varthema as sources.

More important, however, especially in terms of the later development of the globe as a scientific and navigational instrument, was the inclusion of loxodromes (rhumb lines or navigational routes).³⁵⁵ Loxodromes (lines of constant compass bearing that form an oblique angle with the meridians) are useful tools for determining a navigational course. Mercator was the first to include rhumb lines on a printed globe (fig. 44.35). Furthermore, he introduced some technical improvements to globemaking. When the gores extended all the way to the poles, the narrow points were difficult to read. Mercator resolved this problem by drawing the gores to seventy degrees and making two separate, circular pieces for the poles. Ten years after finishing his terrestrial globe, Mercator published a celestial counterpart in the same format, the first and only astronomical work the geographer published.³⁵⁶ In addition to his printed terrestrial and celestial globe, Mercator also constructed individual manuscript globes, such as the small crystal celestial globe and the very small wooden terrestrial globe he made for Charles V—both accompanied by the only manual Mercator wrote for a globe.

The terrestrial and celestial globes published by Gemma Frisius and Mercator enjoyed great success in the scholarly world, with Mercator's work inspiring many imitators and eventually replacing that of his teacher. Although his terrestrial and celestial globes were produced ten years apart, they were considered a unit, and subsequently globes were routinely published as pairs until the nineteenth century.

The arrival of Dutch cartographers and engravers in the German Rhineland—among them Gerardus Mercator (in 1552) and Frans Hogenberg—greatly influenced cartography in this region.³⁵⁷ It was in the German city of Duisburg that most of Mercator's globes were produced. Before Mercator's arrival in the Rhineland, globes were manufactured in Cologne, chiefly by Caspar Vopel.³⁵⁸ The esteem awarded Mercator's globes was due more to the high graphic quality of the drawings and notes than to the improvements in the map (in particular in southern Asia), which were never imitated and were quickly outdated by new discoveries.

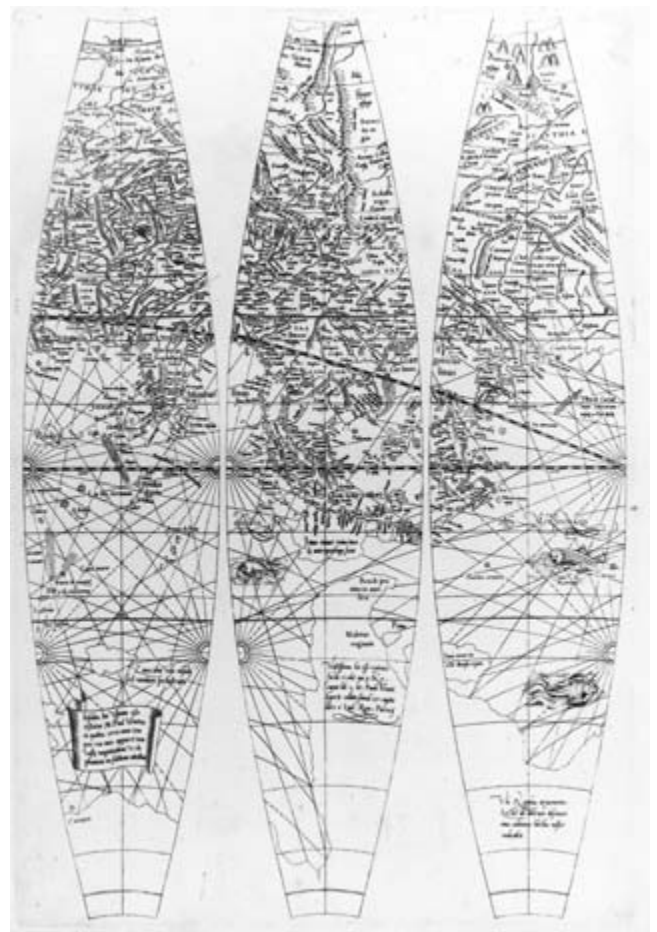


FIG. 44.35. THREE TERRESTRIAL GLOBE GORES BY GERARDUS MERCATOR, CA. 1541. (See also pp. 151–52.) Diameter of the globe: 42 cm; twelve full clipped gores and two polar calottes. Photograph copyright Royal Library of Belgium, Brussels (Section des cartes et plans, pl. 4).

The publication of Mercator's globe pair in Louvain represented the final step in the first phase of the history of globemaking in the Low Countries. During this phase, the globe metamorphosed from an expensive object, made by

353. On these maps, see chapter 60 in this volume.

354. Joseph Fischer, "Die Hauptquelle für die Darstellung Afrikas auf dem Globus Mercators von 1541," *Mitteilungen der Geographischen Gesellschaft Wien* 87 (1944): 65–69.

355. Helen Wallis and Arthur Howard Robinson, eds., *Cartographical Innovations: An International Handbook of Mapping Terms to 1900* (Tring, Eng.: Map Collector Publications in association with the International Cartographic Association, 1987), 185 and 201–2.

356. GN, 413–15 (MER). Improvements in this globe included, among others, the addition of the constellation figures for the asterisms Antinous and Coma Berenices; both constellations were drawn earlier by Caspar Vopel on his celestial globe of 1536.

357. Meurer, *Atlantes Colonienses*.

358. Leonard Korth, "Die Kölner Globen des Kaspar Vopelius von Medebach (1511–1561)," *Zeitschrift für Vaterländische Geschichte und Alterthumskunde* 42, pt. 2 (1884): 169–78.

scholars to demonstrate the newly discovered areas and their ideas about the form of the world, into an object that was sold commercially and, with the inclusion of rhumb lines, suitable for ocean-going navigation. Thus, Mercator lay the foundation for the enormous flourishing of globe manufacturing that would follow in Amsterdam.

THE PERIOD 1585–1605: A FLOURISHING PRODUCTION CENTERED IN AMSTERDAM

Because of the radical economic and political developments in the Low Countries at the end of the sixteenth century, Amsterdam expanded into a center of shipping trade. In the middle of this active period, Jacob Floris van Langren, hitherto unknown in cartographic circles, made and published a globe pair (32.5 cm) in Amsterdam in 1586.³⁵⁹ This closely followed the publication of another pioneering cartographic work produced in Holland, the *Spieghel der zeevaerdt* by Lucas Jansz. Waghenaer (1584–85). Both of these works were copied by foreign cartographers.

The First Globes in the Northern Provinces

Very little is known about the origins of Jacob Floris van Langren. He was among the Anabaptists who moved from the Southern to the Northern Provinces at the end of the sixteenth century. In the north, the Anabaptists—who believed in adult baptism, refused to take oaths or carry arms, and awaited the imminent return of Christ—were protected by William I, prince of Orange. In 1579, the Union of Utrecht declared freedom of religion, and many Anabaptists moved to the north.³⁶⁰

The celestial globe of Van Langren's 1586 pair was largely a copy of Mercator's 1551 globe, adopting his names for stars and constellations (Van Langren did not include the Greek names) and his manner of drawing the figures of the constellations (fig. 44.36). The positions of the stars differ from those on Mercator's globe, however, and in a number of places it is evident that other sources were used. Perhaps Rudolf Snellius, the Leiden professor of mathematics who contributed to the celestial globe, used a copy of the *Phaenomena* by Aratus to edit the globe, for one copy bears Snellius's notes on a number of stars, among other things, and Snellius wrote the Latin names of the constellations.³⁶¹

In 1589, Van Langren published—together with his eighteen-year-old son, Arnold—a second, revised edition of the 1586 terrestrial and celestial globes dedicated to Christian IV, king of Denmark.³⁶² This is the oldest extant copy of a terrestrial globe from the Northern Provinces (fig. 44.37). The map follows to a great extent Gerardus Mercator's 1569 wall map of the world, but the influence of Waghenaer's *Spieghel der zeevaerdt* is clearly demonstrated in the representation of the coasts of western Europe



FIG. 44.36. FIRST AMSTERDAM CELESTIAL GLOBE, JACOB FLORIS VAN LANGREN, 1586. Diameter of the globe: 32.5 cm. Photograph courtesy of the Stifts- och Landsbiblioteket, Linköping.

and Scandinavia. The celestial globe was revised by Petrus Plancius.³⁶³ The small globe pair was sufficiently successful to allow the Van Langrens to publish a much larger globe pair with a diameter of 52.5 centimeters. The large terrestrial globe was ready the same year as the second edition of the smaller pair, and the map was similar to that of the smaller one, based primarily on Mercator's large 1569 world map.³⁶⁴ The cartouche contains a table copied from Abraham Ortelius's 1564 wall map of the world listing the origins of commercial products.³⁶⁵ After Plancius's large world map came out in 1592, the Van Langrens published

359. No copy of the terrestrial globe is known to exist. The copy of the celestial globe is in Linköping, Stifts- och Landsbibliotek. Unfortunately, it is quite damaged. See GN, 421–29 (LAN I).

360. N. van der Zijpp, *Geschiedenis der doopsgezinden in Nederland* (Arnhem: Van Loghum Slaterus, 1952), 134–35 and 150–51.

361. Leiden, Universiteitsbibliotheek (756 A 7). See Aratus of Soli, *Aratou Soleos Phaenomena meta scholion = Arati Solensis Phaenomena cum commentaris* ([Venice: Aldus], 1499).

362. GN, 421–29 (LAN I).

363. Keuning, *Petrus Plancius*, 94–97. For a detailed description of the additions to the celestial globe, see Deborah Jean Warner, *The Sky Explored: Celestial Cartography, 1500–1800* (New York: Alan R. Liss, 1979), 201, and GN, 97–98.

364. GN, 430–59 (LAN II). The fourteen extant copies of this large terrestrial globe by the Van Langrens are all different; GN describes each separately in chronological order.

365. MCN, 2:39 and 43.



FIG. 44.37. FIRST AMSTERDAM TERRESTRIAL GLOBE, JACOB FLORIS VAN LANGREN, 1589.

Diameter of the globe: 52.5 cm. Photograph courtesy of Netherlands Scheepvaartmuseum, Amsterdam (inv. no. A.1140).

a revised edition of their large terrestrial globe, considerably altered in light of Plancius's map.

Jacob Floris van Langren considered the use of globes for navigation very important, and, precisely for that reason, he included loxodromes on his globes.³⁶⁶ Van Langren seemingly did little to sell his globes to people other than seamen. Not even Snellius, the editor of Van Langren's first celestial globe, received a copy for the Universiteitsbibliotheek Leiden, where the globe could have served as an advertisement of Van Langren's wares to the scholarly community.

A Breakthrough in the Production of Globes

Jodocus Hondius, who had distinguished himself in London as the engraver of the first pair of English globes (the so-called Molyneux globes), established himself in Amsterdam in 1593 and began to compete with the Van Langrens.³⁶⁷ Upon the publication of the Molyneux globes, Jacob Floris van Langren requested from the States General and was granted a charter for ten years (from 9 September 1592) explicitly forbidding the sale of foreign globes in the Low Countries. When Hondius started preparations to publish a new globe, Jacob Floris van Langren, together

with his sons, hurriedly requested a renewal of Van Langren's charter, though it was still valid for another six and one-half years. Van Langren was granted a new charter on 31 January 1596, for another ten years. However, on 1 April 1597, Hondius received a charter from the States General for his new terrestrial globe. In spite of resistance from Van Langren, Hondius won this by arguing that his globe showed fourteen improvements over Van Langren's. As a result of this judgment, it was permissible for anyone to make globes; a charter was protection only against outright plagiarism.

In the years immediately following, there was an unparalleled production of globes. Seventeen globes came on the market; eight terrestrial and nine celestial globes came out over about six years (appendix 44.7). The verdict of the States General was not the only cause for this increase. Dutch trade and its sphere of influence expanded to include the whole world and sparked interest at home in the world beyond Europe. Travel to the Indies necessitated new cartographic tools, and the observation and plotting of stars around the southern celestial pole required new celestial globes. Furthermore, the States General's verdict made globes part of the public domain, like books and maps (although specific informative content could be protected), and the fierce competition between Jodocus Hondius and Willem Jansz. Blaeu resulted in the rapid manufacturing of new and revised globes.³⁶⁸

From 1596 to around 1605, globe production in Amsterdam was controlled by three publishers: the Van Langren brothers, Arnold and Hendrik, in cooperation with Adriaen Veen; Jodocus Hondius the Elder, after 1598 in cooperation with Petrus Plancius; and Willem Jansz. Blaeu, originally directed by Adriaen Anthonisz.

Jacob Floris van Langren was almost seventy-five when Hondius received his charter, and Van Langren retired from globemaking, leaving the copperplates to his sons. Both Arnold and Hendrik were engravers who had worked on maps both together and independently for other publishers during the 1590s. These maps were copies of originals by other mapmakers. Most of their globe work was not original, either, and originality was precisely what was needed in the competition with Hondius and Blaeu. The brothers limited themselves to adapt-

366. The drawing of the loxodromes by Van Langren was criticized by his competitor, Jodocus Hondius. Van Langren drew the loxodromes as great circles instead of as spirals, the way Mercator did on his globe, and Hondius demonstrated that the northeastern line on Van Langren's globe was 2.5 arcs off the correct course. See GN, 118.

367. The globes were published by Emery Molyneux in 1592 or 1593; 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; and GN, 460–63 (HON M-I/II).

368. GN, 126–27.

ing and improving their large terrestrial globe, correcting the fourteen errors pointed out by Hondius, and adding information from new geographical discoveries. Shortly after 1600, Arnold did make one new terrestrial globe (32.5 cm).³⁶⁹ This globe was better than all previous ones, including his own, and certainly better than those by Jodocus Hondius or Willem Jansz. Blaeu, who he said had used his globes as models. According to Arnold, the loxodromes form the basis of a globe's usability, along with navigational information such as that prepared by him and by Adriaen Veen.

However, Arnold was not a businessman; he was rather reckless and incurred many debts, not only to his father but to others as well. This led him to develop an unusual globe offering. In the first decade of the seventeenth century, a number of governing boards received a globe specifically dedicated to them. Arnold wrote a dedication in manuscript on a separate piece of paper and pasted it on the globe, hoping to receive an honorarium greater than the selling price of the globe.³⁷⁰ Unfortunately, this practice did not help Arnold out of his financial difficulties. Leaving behind most of his worldly belongings, he fled to the Southern Provinces, where he was appointed "royal spherographer" to the governors of the Spanish Netherlands, Albert and Isabella, in September 1609. In Brussels, he began to manufacture globes again, but due to his flight and many debts, he lost his right to use his father's copperplates.

Hendrik had remained more in the background than his older brother. After Arnold left, Hendrik could not manage the production of globes and wall maps alone and formed a partnership with his brother-in-law Jacob Reyersz., who received half of the business without assuming any responsibilities. The two signed an agreement on 1 February 1608, but no cartographic work by Hendrik or Jacob is recorded after this date. In 1642, Hendrik moved from Amsterdam to Alkmaar, where he died on 21 December 1648. The copperplates were still in his possession and were sold in 1650. With Hendrik's death, the Van Langren family's activities in Amsterdam ended. Lack of originality, too little business insight, stiff competition, and resistance combined to keep their name from ever achieving the fame of their successors, Hondius and Blaeu.

The Competition between Hondius and Blaeu

There was absolutely no collaboration between the dominant globe publishers Van Langren, Hondius, and Blaeu. This was not just for business reasons; religious convictions must have also played an important role. As Calvinists, Hondius and Plancius did not work with the Anabaptist Blaeu or Van Langren families, although the latter family was virtually out of the globe market when the competition between Blaeu and Hondius intensified.

The production of the 35.5 centimeter terrestrial globe for which Jodocus Hondius received a charter in 1597 marked the beginning of this competitive struggle. Hondius put together his globe on the basis of the most modern sources available from all over Europe, books as well as maps.³⁷¹ About two years later, in 1599, Willem Jansz. Blaeu published a globe of almost the same size (34 cm).³⁷² A comparison of the two globes clearly reveals that Blaeu's map is completely different from Hondius's and was not copied from it (there are a number of similarities that resulted from their using the same sources). The fact that Blaeu designed a completely original globe, rather than borrowing from or copying Hondius's globe, demonstrates that Blaeu was a globemaker who placed the scholarly value of a globe above its commercial importance.³⁷³ Only at a later date did Blaeu copy details from his competitor's work out of commercial necessity.

In the meantime, both Blaeu (with Adriaen Anthonisz.) and Hondius (with Petrus Plancius) produced celestial globes. Blaeu's (34 cm) was published at the end of 1597 or the beginning of 1598 and was based completely on the observations of Tycho Brahe.³⁷⁴ But this work was out of date by 1600, when Hondius presented on his celestial globe (35.5 cm) the newest information about the southern constellations, based on the observations of Pieter Dircksz. Keyser and Frederik de Houtman during their voyage of 1595–97 (fig. 44.38).³⁷⁵ Like the terrestrial globes, these two celestial globes were completely independent works. There are marked differences in the constellations included and the manner in which they are depicted; the Hondius globe was more up to date (with the addition of the twelve new constellations at the south pole), but in terms of style, Blaeu's globe was ahead of his competitor's.

369. There is one known copy of this terrestrial globe. It is housed in Besançon, Bibliothèque Municipale.

370. Seven globes with such dedications are mentioned by Van der Krogt, *GN*, 133–34.

371. *GN*, 464–72 (HON II), and, for a thorough list of the sources, 146–47.

372. *GN*, 488–92 (BLA I).

373. Despite his outstanding astronomical abilities, Blaeu was not a regular observer of the heavens, according to Van Gent. In measuring a new star in 1604, he missed the conspicuous movements of the nearby planet Saturn. See R. H. van Gent, "De nieuwe sterren van 1572, 1600 en 1604 op de hemelglobes van Willem Jansz. Blaeu," *Caert-Thresoor* 12 (1993): 40–46.

374. Of this celestial globe only an incomplete set of gores has survived. Nine of the twelve gores are preserved in the Houghton Library of Harvard University in Cambridge, Massachusetts. See *GN*, 492–96 (BLA I).

375. Elly Dekker, "Het vermeende plagiaat van Frederick de Houtman: Een episode uit de geschiedenis van de hemelkartografie," *Caert-Thresoor* 4 (1985): 70–76; idem, "Early Explorations of the Southern Celestial Sky," *Annals of Science* 44 (1987): 439–70; and *GN*, 470–72 (HON IIB).



FIG. 44.38. CELESTIAL GLOBE BY JODOCUS HONDIUS, 1600. Diameter of the globe: 35.5 cm. Photograph courtesy of Nederlands Scheepvaartmuseum, Amsterdam (inv. no. A.0942).

A certain tradition of drawing the constellation figures had developed in celestial cartography during the sixteenth century, and by about 1600 four styles of drawing existed.³⁷⁶ The Viennese style, in which the human figures are naked, was the oldest. The second, a variation of this, is evident in the 1532 woodcuts by Johannes Honter, in which the human figures are dressed in contemporary clothing. Mercator introduced a third style on his 1551 celestial globe: he drew the three male figures (Boötes, Cepheus, and Orion) in Roman clothing, leaving the other figures naked. Blaeu's globe, however, heralded a completely new engraving style. Boötes was dressed for a northern European winter, with a heavy overcoat and high boots. Cetus, previously drawn as a fishlike monster with a dog's head and closed mouth, was shown with wide-open jaws. More striking than the specific differences is the generally lavish and exuberant manner of the engraving. In earlier styles, the figures were drawn apart from each other, inasmuch as possible, with (sometimes large) spaces between them. On Blaeu's globe, there is barely any empty space; the figures overlap each other. This style may be as-



FIG. 44.39. THREE GORES FROM BLAEU'S FIRST CELESTIAL GLOBE, CA. 1598. Diameter of the globe: 34 cm. By permission of Houghton Library, Harvard University (51-2459 PF).

cribed to Jan Pietersz. Saenredam, whose name is also given on the globe (fig. 44.39).³⁷⁷

In 1600, Hondius's revised globe pair (35.5 cm) was on the market. The terrestrial globe was a new edition of the ca. 1596/97 globe, but Hondius put more effort into the new celestial globe, engraving completely new copperplates and faithfully following the Saenredam style of

376. Deborah Jean Warner, "The First Celestial Globe of Willem Janszoon Blaeu," *Imago Mundi* 25 (1971): 29–38, esp. 34, and Warner, *Sky Explored*, xiii.

377. According to Warner (*Sky Explored*, 28, and "First Celestial Globe," 34–35), Blaeu copied Tycho Brahe's style from the large bronze globe. This seems unlikely; it seems equally unlikely that Blaeu developed the style himself. The difference between this lavish celestial globe and the later, soberly engraved terrestrial globe is too large to attribute to a publisher, particularly to one primarily interested in the scientific aspect of a globe.

Blaeu's celestial globe. Blaeu did not remain quiescent during this period. His celestial globe was outdated almost as soon as it appeared because it lacked the twelve new southern constellations (sometimes called the "Plancius twelve"). The information on the new constellations had resulted from the 1597 expedition of the Dutch to the Indies, and it was turned over to Plancius, who had instigated the scientific investigations on the voyage. Plancius was the only person who could publish the information, which he did on the Hondius globe. But in March 1598, the first Zeeland expedition sailed for the East Indies.³⁷⁸ This was one expedition not sent out by the city of Amsterdam, and thus one over which Plancius had no control. Blaeu continued work on the thirty-four centimeter terrestrial globe, and he planned to revise his celestial globe using information from Frederik de Houtman, who was on the 1598 expedition and would return in the middle of 1599 (De Houtman with Keyser and others had made observations for Plancius on the first voyage). However, De Houtman was held prisoner on Sumatra and did not return until July 1602. Blaeu's situation was uneasy. He had one globe pair with an outdated celestial globe, and his competitor Hondius published a revised, modern pair in 1600 on which he blatantly copied the popular Saenredam style for the constellations. Blaeu's only advantage was now lost. And his situation would get worse.

In 1601, Hondius published a smaller globe pair (21 cm), moving the prime meridian on the terrestrial globe from the westernmost Cape Verde Islands to the islands of Corvo and Flores in the Azores. This change was based on Plancius's (erroneous) idea that the prime meridian had to be a meridian with a magnetic variation of zero degrees—where the compass pointed to true north. Even though Hondius's previous longitudes had actually been more accurate, as we now know, in 1600, Plancius's new theory was considered more accurate.³⁷⁹ The accompanying celestial globe, on which Jodocus Hondius's name is not found, is a reduced model of the 1600 edition.

Given Hondius's advantage, Blaeu could not wait any longer for Frederik de Houtman. His initial scholarly motives had gradually changed into commercial ones. He chose to make a new globe pair with a diameter of twenty-three centimeters, a little larger than Hondius's.³⁸⁰ Both globes from this pair appeared in 1602. The pendulum then swung back to Blaeu. In 1601, Olivier van Noort, the first Dutchman to sail around the world, returned from his trip to the Indies. Blaeu included Van Noort's route on his new terrestrial globe. For the celestial globe, Blaeu resorted to copying the southern constellations from his competitor. In July 1602, Frederik de Houtman returned from his protracted stay in the East Indies, taking with him notes on the new stars. It was too late for these positions to be included on Blaeu's globe, although the cartouche records that the new stars were based on De Houtman's

observations.³⁸¹ Armed with these observations, Blaeu immediately began to revise the thirty-four centimeter globe. A new edition was published in 1603 and presented to the States General by De Houtman. Blaeu used the old copperplates, engraved by Saenredam, on which he had added the "Plancius twelve" and a revised Argo Navis.

In 1603, the two competitors were again on equal ground. Both had a large globe pair (34–35 cm), as well as a small globe pair (21–23 cms). The celestial as well as the terrestrial globes included the newest discoveries; the celestial globe had even been given a new drawing style. Both competitors had also managed to make a much smaller globe pair. Hondius's had a diameter of about eight centimeters, while Blaeu made a pair of globes with a diameter of ten centimeters.³⁸² It is not clear why Hondius and Blaeu made these small globes; perhaps they were sample pieces, made to advertise larger globes, or were used in astronomical clocks or planetariums.

THE SEVENTEENTH CENTURY: CONSOLIDATION AND THE FALL OF THE GLOBE MONOPOLY

After the hectic but brief period in which globe production developed rapidly and a large variety of types were made, there followed a time of relative calm. For one thing, there was no competition from abroad. A few globes were manufactured in the Southern Provinces, but none that posed any serious competition to those made in Amsterdam.

After 1605, globe production was characterized by an expansion of available models. This phase ended about 1645/46, and it was nearly half a century before a truly new globe was made in Amsterdam. After 1605, impressive globes made as decorative and prestige objects replaced in importance globes made for navigational and scientific purposes.

In the second half of the seventeenth century, Amsterdam map production changed. Although second and third generations of mapmakers followed in the footsteps of their fathers, they lacked a desire to improve and update their products. Competing publishers tried to outdo one another only in terms of quantity; scholarly quality was barely a consideration. Although an attempt to outdo

378. See Willem Sybrand Unger, *De oudste reizen van de Zeeuwen naar Oost-Indië, 1598–1604* (The Hague: Martinus Nijhoff, 1948).

379. GN, 473–76 (HON III). A comparison of longitudes on the old and the new globes by Hondius and the true positions is made in GN, 164.

380. GN, 501–5 (BLA III).

381. The fact that the new stars on Blaeu's globe were not based on De Houtman's observations has been convincingly demonstrated by Dekker in "Het vermeende plagiaat" and "Early Explorations."

382. GN, 463 (HON I) and 497–500 (BLA II).



FIG. 44.40. GIANT GLOBE BY JOAN BLAEU. Diameter of the globe: 2.13 m. By permission of the State Historical Museum, Moscow.

the competition in terms of size is clearly seen in atlas production of the time, it is a less evident feature of globe production. Joan Blaeu made a giant terrestrial globe on commission for the Dutch East India Company; it had been ordered by Prince Crain Patengalo of Makasar in 1644. This globe had a diameter of more than 4 meters and consisted of a copper ball with a painted map. Presumably, the globe was later melted down to make cannons.³⁸³ A similar large copper globe with a diameter of 2.13 meters was made in Blaeu's workshop by order of Queen Christina of Sweden. It was bought in 1707 in Amsterdam by Peter the Great's agent, Christopher Brandt (fig. 44.40).³⁸⁴ Such gigantic metal globes fell well outside the normal production pattern; they were individually made pieces, in contrast to globes constructed from printed gores.

It was only from seafaring circles that there was any call for improvements. Consequently, charts and sea atlases produced in Amsterdam were the only cartographic products that did not suffer from the lack of improvements and scholarly quality. The fact that globes were not brought up to date in this period is a clear indication that they no longer had a function on board ship.

Rivalry in the Production of Large Globes

Between 1606 and 1612, only two new globe pairs with modest diameters were placed on the market; the diameter of Blaeu's was 13.5 centimeters and that of Hondius's 11 centimeters (appendix 44.8).³⁸⁵ In 1613, as the competition began to heat up again, some exceptional new globes were made whose most noticeable feature was their large size. At the same time, a new globemaker entered the field: Pieter van den Keere, Jodocus Hondius's brother-in-law. Later, other globe publishers also appeared, such as Johannes Janssonius and Jacob Aertsz. Colom.

Jodocus Hondius the Elder must have started preparations about 1611 for a globe pair to surpass those of Blaeu in size. Hondius's new globe measured 53.5 centimeters in diameter,³⁸⁶ while Blaeu's measured only 34 centimeters. Hondius did not finish the work; he died suddenly in February 1612 at age forty-eight. After his death, the firm was initially run by his widow, Colette van den Keere, and their oldest son, Jodocus Hondius Jr., who was eighteen. He finished his father's globe pair in 1613, dedicating them to the States General in the name of his father. The prime meridian was again the traditional meridian through the most westerly island of the Cape Verde Islands. The map was based on the wall map of the world in two hemispheres published by Jodocus Hondius the Elder around 1611, although that particular map used the meridian that passed through St. Michael in the Azores as the prime meridian. The celestial globe is nothing more than an enlargement of the 34 centimeter model. Such a large globe could not be used on a ship because of its size, and, moreover, it was very fragile. Its important, and perhaps only, prospective buyers were members of an emerging elite of rich merchants and burghers, as well as institutions, which found these globe pairs prestigious.

Hondius finally had a globe pair that brought the owner more prestige than did Blaeu's largest pair, and Blaeu did not stand idly by. His response was devastating for his competitor. As early as 1614, one year after Hondius's pair was finished, Blaeu was working on two extremely large globes. Because they would require a long time to fin-

383. Johannes Keuning, "Een reusachtige aardglobe van Joan Blaeu uit het midden der zeventiende eeuw," *Tijdschrift van het Koninklijk Nederlandsch Aardrijkskundig Genootschap* 52 (1935): 525–38.

384. Moscow, Historical Museum; see *Bol'shoi globus Blau: Issledovaniia i restavratsiia, Materialy nauchno-prakticheskogo seminara, Moskva 8 apreliia 2003 g.*, vol. 146 of *Trudy Gosudarstvennogo Istoricheskogo Muzeia* (Moscow, 2006). Leo Bagrow, "A Dutch Globe at Moscow, ca. 1650," *Imago Mundi* 13 (1956): 161–62; T. P. Matveeva, "Stary globus v SSSR," *Der Globusfreund* 21–23 (1973): 226–33; and E. D. Markina, "'Globus Blau' XVII v. v Gosudarstvennom Istoricheskom muzeie," in *Pamyatniki nauki i tekhniki 1984* (Moscow, 1986), 128–38.

385. GN, 506–8 (BLA IV) and 477 (HON IV).

386. GN, 478–83 (HON V).

ish, Blaeu published a manual (written by Adriaan Metius, professor of mathematical sciences in Franeker) in 1614, announcing the preparation of the new pair. In 1616, the globes were presented to the States General (plate 53).³⁸⁷ The sixty-eight centimeter diameter was twice that of the 1598/99 globes and was larger than Hondius's globe by fifteen centimeters.

Blaeu's sixty-eight centimeter terrestrial globe may be the oldest dated cartographic document to include Henry Hudson's 1609 mapping of the area now known as New York City. A second important, although otherwise neglected, discovery included by Blaeu was the southern coast of New Guinea.

Blaeu's large terrestrial globe included more recent information than Hondius's, but Hondius's globe was more decorative. With his sixty-eight centimeter celestial globe, which was new in many respects, Blaeu demonstrated once again that his main interest was astronomy. He was not content to simply enlarge his earlier globe. Blaeu calculated the positions of the stars for the epoch 1640 instead of 1600, the epoch for which the positions of the stars had been calculated on the celestial globes of Van Langren and Hondius. Further, three recent nova were discussed in long notes. A significant change and a scholarly improvement is found in the naming of the constellations, which included many Latin variants as well as the Greek and sometimes the Arabic name. From an artistic point of view, the globe was new as well. The constellations were drawn in a style that differed as much from the Saenredam style as the Saenredam style had differed from that of Mercator. The new figures relied on a classical model, just as had those of Mercator. The sixty-eight centimeter globe pair remained in production for almost one hundred years.

The publication of the sixty-eight centimeter 1616/17 globe pair gave Blaeu such a lead, however, that Hondius could neither catch up nor overtake him. The Hondius firm, by then in the hands of the two brothers, Jodocus Jr. and Henricus, did nothing more than see to it that the firm's terrestrial globes were up to date; on the celestial globes they changed only the date or the imprint when they made what they called a new edition. In 1623, Jodocus Hondius Jr. had put a new globe pair on the market, in conjunction with his brother-in-law Johannes Janssonius.³⁸⁸ This set of globes, with a diameter of forty-four centimeters, may be viewed as a response to Blaeu's large pair, a new edition of which had been published in 1622. There are two versions of the new globe pair. One names Jodocus Hondius Jr. as the publisher; the other names Johannes Janssonius. Both versions are dated 1623. Hondius's edition of the terrestrial globe, of which only one copy is known, has his name only on pasted-on cartouches.³⁸⁹ For the celestial globe, another method was used. After the copperplates were finished, there was a se-

ries of gores printed with Jodocus Hondius's name and then, after the plates were changed, there was a series printed with Janssonius's name. In this manner, each of the brothers-in-law could sell the globes under his own name.

It seems as if history was repeating itself: the engraving style of the celestial globe was a copy of that of Blaeu's large globe. Even the cartouches were faithfully adopted. However, the many alternate names of constellations, the extra tables, and the detailed notes accompanying the novae are not found on Hondius's globe, demonstrating again the less scholarly approach of the Hondius firm.

With Hondius and Blaeu's battle to outdo one another raging, a new, third globemaker was hardly noticed. Pieter van den Keere established himself as an independent engraver in Amsterdam in 1593. Around 1612, he was asked by Petrus Plancius to make a new globe pair. The globes Van den Keere published according to Plancius's instructions had a diameter of 26.5 centimeters, which was substantially smaller than the normal or common format of 32 to 35 centimeters.³⁹⁰ The engraving was done by Van den Keere and his nephew Abraham Goos.

The terrestrial globe published by Van den Keere was long considered the first printed document to include the southern coast of Edge Island (southeastern Spitsbergen), complete with Dutch names (fig. 44.41).³⁹¹ However, Schilder found that this was taken from a map by Mouris Willemsz. that was published in or before 1608 by Cornelis Claesz.³⁹² As early as 1610, this coast was copied on an English world map by William Kip.³⁹³ The significance of this terrestrial globe for the history of Dutch exploration was substantially decreased by this new find. A noteworthy feature of the geographical image is the broad gap in the western coast of North America northwest of California. According to Shirley, this was "anticipating later maps showing California as an island."³⁹⁴ Nonetheless, this detail was not new, either; it is found on the small

387. GN, 509–22 (BLA V).

388. GN, 484–87 (HON VI).

389. The only known copy is in Weimar, Herzogin Anna Amalia Bibliothek.

390. Günter Schilder, "The Globes by Pieter van den Keere," *Der Globusfreund* 28–29 (1980): 43–62; Peter van der Krogt, *Old Globes in the Netherlands: A Catalogue of Terrestrial and Celestial Globes Made Prior to 1850 and Preserved in Dutch Collections*, trans. Willie ten Haken (Utrecht: HES, 1984), 165–70; and GN, 525–31 (KEE I).

391. F. C. Wieder, "Spitsbergen op Plancius' globe van 1612: Onbekende Nederlandsche ontdekkingstochten," *Tijdschrift van het Koninklijk Nederlandsch Aardrijkskundig Genootschap* 36 (1919): 582–95.

392. Günter Schilder, "Development and Achievements of Dutch Northern and Arctic Cartography in the Sixteenth and Seventeenth Centuries," *Arctic* 37 (1984): 493–514, esp. 500.

393. Shirley, *Mapping of the World*, 291–92 (no. 272), and Schilder, "Dutch Northern and Arctic Cartography," 513 n. 54.

394. Shirley, *Mapping of the World*, 307 (no. 286).



FIG. 44.41. DETAIL OF THE ARCTIC REGION ON A GLOBE BY PETRUS PLANCIUS AND PIETER VAN DEN KEERE, 1612.

Diameter of the globe: 26.5 cm. Photograph by René van der Krogt. Permission courtesy of the Maritiem Museum, Rotterdam.

world map by Hessel Gerritsz. published in his 1612 *Descriptio ac delineatio geographica detectionis freti . . . recens investigati ab M. Henrico Hudsono Anglo*.

In contrast to the terrestrial globe of Plancius, the celestial globe has drawn very little scholarly attention, even though it shows many clear improvements. Not only did Plancius change the epoch from 1600 to 1625; he also added a few new constellations to the Ptolemaic constellations known since antiquity. The publisher, Van den Keere, was not satisfied with just one globe pair. On his own initiative and at his own expense, he produced two smaller sets. The first of the small pairs was finished in 1613 and had a diameter of only 9.5 centimeters.³⁹⁵ The second pair followed a year later and had a diameter of 14.5 centimeters.³⁹⁶ After Schouten and Le Maire's discoveries were made known, all three globes were revised about 1618–19; the only changes were the addition of the Le Maire Straits and modifications in the surrounding area.

New Amsterdam Globemakers

In the 1630s, when the old globe manufacturers Blaeu, Hondius, and Van den Keere had a complete line of about fifteen globes to offer the public, a new globemaker appeared: Jacob Aertsz. Colom. Colom established himself in 1622 as a bookseller in Amsterdam, and in the first half of the 1630s, he must have begun making globes.³⁹⁷ It seems he made three globe pairs; the inventory of his es-



FIG. 44.42. TERRESTRIAL GLOBE BY JACOB AERTSZ. COLOM, CA. 1640.

Diameter of the globe: 34 cm. Photograph by René van der Krogt. Permission courtesy of the National Maritime Museum, London (G 170).

tate in 1674 listed “globe plates” but also “plates for middle-sized globes” and “for smaller globes.”³⁹⁸ However, only a globe pair with a diameter of thirty-four centimeters and a smaller (20 cm) terrestrial globe are currently known.

There is only one extant example of the thirty-four centimeter globe pair.³⁹⁹ The terrestrial globe (ca. 1640) is presumably from a second, revised edition (fig. 44.42).⁴⁰⁰

395. GN, 532–33 (KEE II).

396. These small globe pairs by Van den Keere are now very rare. The 14.5 centimeter set is known only from a half set of gores from a later edition and from a French copy. See GN, 534–36 (KEE III).

397. C. Koeman, *Atlantes Neerlandici: Bibliography of Terrestrial, Maritime, and Celestial Atlases and Pilot Books Published in the Netherlands Up to 1880*, 6 vols. (Amsterdam: Theatrum Orbis Terrarum, 1967–85), 4:119–21, and A. J. Kölker, “Jacob Aertsz. Colom, Amsterdams uitgever,” in *Jacob Aertsz. Colom's kaart van Holland 1639: Reproductie van de eerste uitgave*, ed. A. J. Kölker and A. H. Sijmons (Alphen aan den Rijn: Canaletto, 1979), 13–23.

398. Amsterdam, Gemeentearchief, Not. Arch. 4416, f. 386, dated April 28, 1674.

399. The globe pair is in London, National Maritime Museum; see Dekker, “Handsome Globes,” 108–11, and, in the catalog section, 309–11, and GN, 539–43 (COL I).

400. An earlier publication has been deduced from six (out of twelve) gores of a presumably French copy that are housed in the BNF (inv. no. Ge D 12558[1] & [2] [gores] and Ge D 12794 [horizon]).

It was compiled from other contemporary maps, such as Henricus Hondius's 1630 world map, and it shows the western and southern coasts of New Holland (Australia) based on the Dutch discoveries of the first quarter of the seventeenth century.⁴⁰¹ The celestial globe (ca. 1630) is an exact copy of the celestial globe of the same size by Blaeu, with a different title and different cartouches for the dedication.⁴⁰² The sole improvement over Blaeu's globe is announced in the title: "The Arabic names of most of [the constellations] have been either corrected or added for the first time by Jacobus Golius" (Golius was professor of Arabic in Leiden). Even the constellations unknown to Arabic astronomers, such as the "Plancius twelve," were given Arabic names.

Only one example of the terrestrial globe from the twenty centimeter globe pair—and no examples of the celestial globe—is known.⁴⁰³ The terrestrial globe presents a less favorable image of Colom as a globemaker than the larger terrestrial globe, for which he made use of more than one source. The twenty centimeter globe is a faithful copy of Jodocus Hondius's 1618 globe. Only the shape of the cartouches and the ships are different. Establishing a date for this globe is not possible; all that can be determined is that it was made between 1622 (when Colom established himself as a bookseller in Amsterdam) and 1651 (the date of the astronomical clock). Colom's activities in the area of globe manufacturing had very little influence on others.

The advent of Johannes Janssonius as a globe publisher marks a completely new phase in globe production in seventeenth-century Amsterdam. Janssonius published a total of five different globe pairs, four of which were made with copperplates he acquired from others and on which he had his own name engraved. In 1620, Janssonius published his first globe pair.⁴⁰⁴ Using the copperplates from the smallest globe of his wife's uncle Pieter van den Keere, it was a modest beginning. The following year, Janssonius published a terrestrial globe measuring 15.5 centimeters engraved by Abraham Goos (fig. 44.43).⁴⁰⁵ This globe is a careful copy of Pieter van den Keere's globe of 1614. An accompanying celestial globe is known only from later sources.⁴⁰⁶ We do not know why Janssonius had Abraham Goos engrave this new terrestrial globe instead of modifying the Van den Keere globe of the same size (we know that Janssonius had access to the copperplates of his wife's uncle). Why would he copy a globe pair and give it a diameter only a fraction larger? If the discoveries of Le Maire and Schouten, which are shown on the terrestrial globe, were the motivation for publishing it, the motivation for publishing the new celestial globe was only that globes were sold in pairs; Schouten and Le Maire's voyage yielded no astronomical discoveries.

In 1623, an inventory of Pieter van den Keere's possessions was made in connection with a second marriage. A

short time later, Van den Keere sold his copperplates, with the plates for the globes going to Johannes Janssonius, who brought out new editions in 1627 and 1645—but changed only the imprint and the date of the terrestrial globe.⁴⁰⁷

Johannes Janssonius had a reputation in globe production as a dealer who produced new works at a low cost—but sometimes only the date on the globe was changed. During his first voyage in 1642/43, Abel Jansz. Tasman found that New Holland was not part of a large southern continent after he sailed around it. Among other things, Tasman mapped Van Diemen's Land (later Tasmania) as well as the western coast of New Zealand. During his second voyage in 1644, Tasman mapped the northern coast of New Holland, and the hypothesis that the southern continent stretched to the equator was eliminated for good. Yet Janssonius failed to include any of the Australian discoveries during the period 1616–44 on his 1648 edition of the forty-four centimeter globe. In contrast, competitors Hondius, Colom, and Blaeu did so on their globes.

After Willem Jansz. Blaeu died in 1638, his sons took over the firm, but rather quickly the eldest, Joan Blaeu, moved into the forefront. The only globe of his father that Joan revised was the largest one (68 cm).⁴⁰⁸ Modifying this globe was a two-phase process, and Joan relied on various techniques. The western coast of North America and the coast of Japan were changed by means of overlays.⁴⁰⁹ The new parts of the map were printed on separate pieces of paper that were pasted on the correct spot. New mapping of New Holland, including that done by Tasman, was engraved on the copperplates of the globes. The final map of the globe became the same as that on the world map of 1645/48. Consequently, the globe may be dated to that time.

401. Günter Schilder, *Australia Unveiled: The Share of the Dutch Navigators in the Discovery of Australia*, trans. Olaf Richter (Amsterdam: Theatrum Orbis Terrarum, 1976), and idem, "Die Entdeckung Australiens im niederländischen Globusbild des 17. Jahrhunderts," *Der Globusfreund* 25–27 (1978): 183–94, esp. 187–88.

402. A set of the celestial gores is in Oxford, Bodleian Library.

403. This copy is housed in Det Nationalhistoriske Museum på Frederiksborg. See GN, 544 (COL II).

404. Only one copy of the terrestrial globe is known. It is housed in London, National Maritime Museum. See Dekker et al., *Globes at Greenwich*, 369–71, and GN, 532–33 (KEE II); the globe pairs by Janssonius are listed on p. 205.

405. Only one copy of the terrestrial globe is known (Leiden, Universiteitsbibliotheek [Bodel Nijenhuis collection, inv.no. 143/21]). See GN, 537–38 (JAN I).

406. GN, 205.

407. GN, 525–29 (KEE I).

408. GN, 509–22 (BLA V).

409. J. Jenny, "Note sur quelques globes de Blaeu des années 1622 et suivantes conservés en France," in *Actes du quatre-vingt-septième Congrès national des sociétés savantes, Poitiers, 1962, Section de Géographie* (Paris: Imprimerie Nationale, 1963), 107–32.

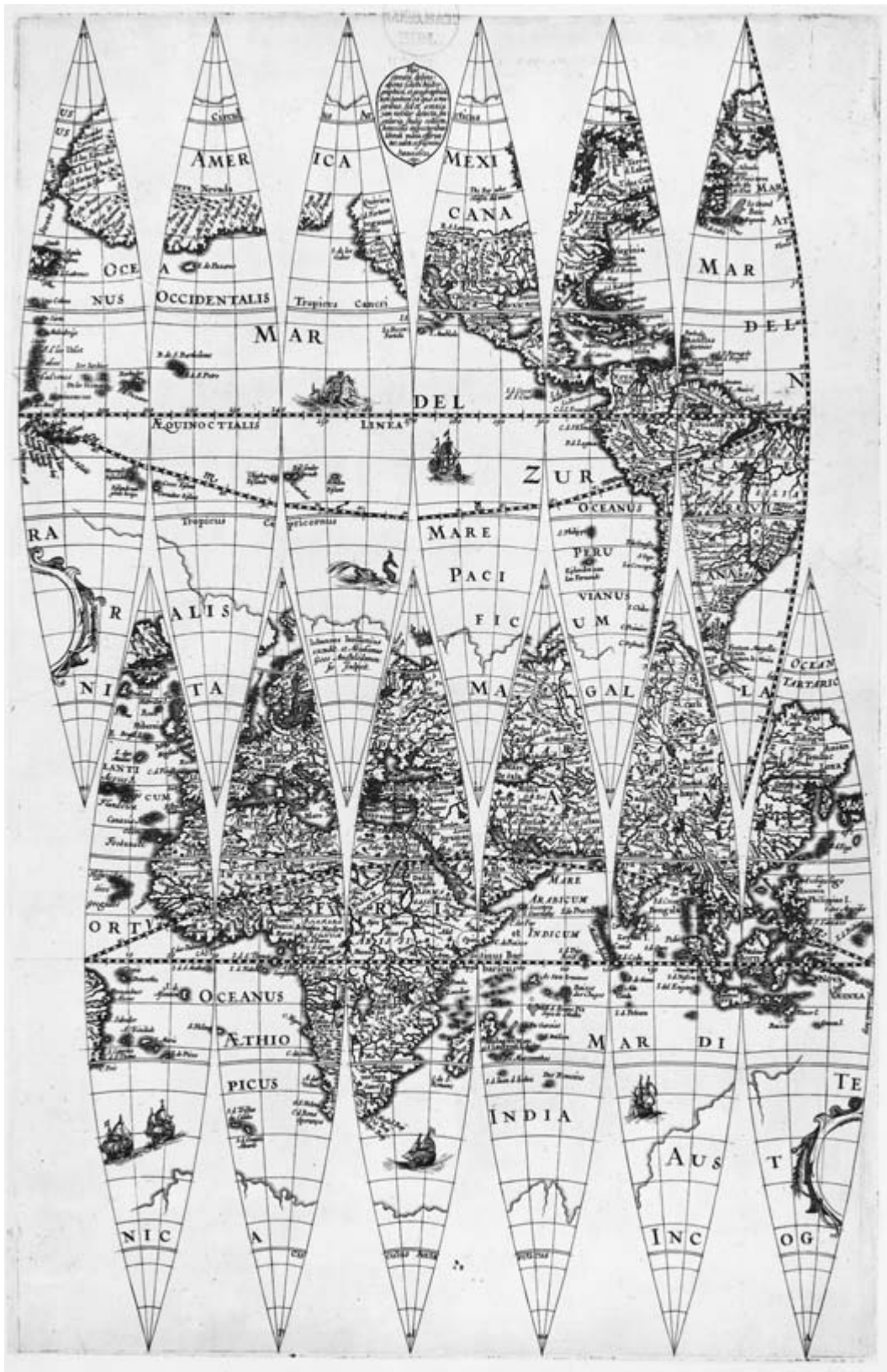


FIG. 44.43. TERRESTRIAL GLOBE GORES OF JOHANNES JANSSONIUS, 1621. Published by Janssonius and engraved by Abraham Goos. Twelve full gores.

Diameter of the globe: 15.3 cm. Photograph courtesy of the Universiteitsbibliotheek Leiden (Bodel Nijenhuis Collection, inv. Port 143 N 21).



FIG. 44.44. TERRESTRIAL GLOBE GORES, POSSIBLY PUBLISHED BY DE JODE, 1584–87. There are two sets of twelve half gores; the North American gores are depicted here.



Diameter of the globe: 73.5 cm. Photograph courtesy of the BNF.

In the seventeenth century, interest in Dutch globes abroad became so great that Amsterdam globemakers could not keep up with the demand. In addition, globes were fragile, making them relatively difficult and expensive to transport. Consequently, copies were made abroad.⁴¹⁰

Production in the South during the Period 1580–1650

In the period in which the production of Amsterdam globes reached its apex, about 1580–1650, new globes were also made in the Southern Provinces. In Antwerp, Cornelis de Jode produced a globe pair. Somewhat later in Antwerp, the theologian and historian Franciscus Haraeus made a few remarkable terrestrial globes. Finally, in the first half of the seventeenth century, Arnold Floris van Langren fled with his son Michael to Brussels, where they were active in globemaking. Globe production in this area remained the work of a few individuals and did not develop into a market of competition and reciprocal influence as it had in Amsterdam. The modernized globes from the south were overshadowed by the large number of Amsterdam globes.

Cornelis de Jode, or his father Gerard, was the first person to make a globe after Mercator in the south.⁴¹¹ Copies have not survived; only some globe gores attributed to Gerard de Jode remain. But, according to written sources, Cornelis de Jode was involved in producing a

large terrestrial globe around 1592–94.⁴¹² We also have a set of twenty-four half gores dating from 1584–87 (fig. 44.44).⁴¹³ The author was probably Gerard or Cornelis de Jode. There are indications that De Jode also made a small globe.⁴¹⁴

Arnold Floris van Langren fled to the Spanish-ruled Southern Provinces in late 1607 or early 1608, leaving behind all of his goods in his haste to escape his debtors. These circumstances created a unique situation (and problems for cartobibliographers and catalogers) in the history of globe production. The copperplates of the Van

410. These foreign imitations are discussed in more detail in *GN*, 211–14.

411. Van Ortroij, *L'œuvre cartographique de Gérard et de Corneille de Jode*.

412. De Jode communicated with the mathematician Levinus Hulsius (Lieven van Hulsen) about this globe. In 1594, Hulsius wrote a work on the use of a surveyor's quadrant, which was published in German and Latin at the expense of De Jode. Publication of the book had undergone a few years of delay because De Jode, who was supposed to make the copperplates of the figures, was too busy with the completion of the world atlas *Speculum orbis terrae* and with the "preparation of a large terrestrial globe," according to Hulsius's dedication of 21 January 1594 to Julius Echter von Mespelbrunn of Franconia, bishop of Würzburg.

413. Marcel Destombes, "An Antwerp *Unicum*: An Unpublished Terrestrial Globe of the 16th Century in the Bibliothèque Nationale, Paris," *Imago Mundi* 24 (1970): 85–94; reprinted in Marcel Destombes (1905–1983): *Contributions sélectionnées à l'histoire de la cartographie et des instruments scientifiques*, ed. Günter Schilder, Peter van der Krogt, and Steven de Clercq (Utrecht: HES, 1987), 337–50. See *GN*, 416 (JOD I).

414. *GN*, 257.

Langren globes remained in the possession of Arnold's brother, Hendrik, and presumably Arnold could not use them. But Arnold made globes based on his father's gores up to about 1620, having had a number of printed sheets with gores for the large terrestrial globe sent to him. With these gores he produced complete globes during his first years in the south. When the supply of certain gores was used up, Arnold engraved new plates for the missing gores. In this way, he was able to make a complete globe using both new and old gores. The process was even more complicated because Arnold completely revised the new gores. Eventually, he produced a large terrestrial globe made up of completely new gores.⁴¹⁵

After finishing his terrestrial globe, Arnold took up his earlier plan to make a new accompanying celestial globe, and this time carried it through; in 1630, the printed globe appeared.⁴¹⁶ The style in which the constellations were drawn followed that of Saenredam, which was used on the Hondius and Blaeu globes manufactured in the northern Netherlands. Consequently, it is very likely that Arnold Floris van Langren drew his globe based on those of his Amsterdam competitors; nevertheless, his globe has a number of interesting additions. For example, Arnold added a survey of the various planets in the solar system, each given with proportionate circles and with data on their size and distance. In all likelihood, these additions were the work of Arnold's son, the royal cosmographer Michael Florent van Langren.

After finishing the celestial globe, Michael Florent van Langren published an improved version of the terrestrial globe (ca. 1645), modifying the copperplates as well as making changes by hand by trimming old gores or pasting on new fragments.⁴¹⁷ The globe was completed by adding notes in manuscript. One of the most important changes was the drawing of the dateline at 217 degrees longitude (fig. 44.45). Also, the loxodromes were removed from the copperplate and new discoveries in North America, Japan, and Australia were added in manuscript.

Franciscus Haraeus made at least four different terrestrial globes in Antwerp after 1614. Haraeus directed himself as much as possible to his pastoral (Roman Catholic) obligations and was the first to add a clearly thematic element to the map of a globe—the spread of Christianity.⁴¹⁸ In so doing, he followed Jodocus Hondius, who had drawn a small map, *Designatio orbis christiani*, for the *Atlas minor* of 1607.⁴¹⁹ No one took up Haraeus's innovation after him, which indicates that there was not great interest in his contribution.

No original mounted globes by Haraeus are extant. Preserved are two different sets of gores, one in Sydney, Australia, and the other in Sint-Niklaas, Belgium.⁴²⁰ The sheet with gores found in Sydney was made for the first known cartographic work of Haraeus, a terrestrial globe (ca. 17.5 cm) published in Antwerp in 1614 (fig. 44.46).



FIG. 44.45. DETAIL FROM THE TERRESTRIAL GLOBE OF MICHAEL FLORIS VAN LANGREN, CA. 1645. The detail shows the dateline at 217 degrees longitude.

Diameter of the globe: 52.5 cm. Photograph by René van der Krogt. Permission courtesy of the Plantin-Moretus Museum/Prentenkabinet, Antwerp.

The second known globe by Haraeus (22 cm) differs in almost every aspect from his first; the only similarity is the

415. For a list of the extant copies of the large terrestrial globe, see GN, 260.

416. Probably a prototype for this printed globe was the remarkable painted version of the celestial globe, which is preserved in London, National Maritime Museum (inv. no. G.106), and is dated as about 1625. See GN, 459.

417. The only known copy is housed in Wrocław, Muzeum Archidiecezjalne.

418. Peter van der Krogt and Günter Schilder, "Het kartografische werk van de theoloog-historicus Franciscus Haraeus (ca. 1555–1631)," *Annalen van de Koninklijke Oudheidkundige Kring van het Land van Waas* 87 (1984): 5–55.

419. KAN, 3:722 (no. 0001H:351).

420. Mitchell Library of the State Library of New South Wales (inv. no. M2 100a/1614/1) in Sydney, Australia, and Library of the Royal Archeological Circle of the Land of the Waas in Sint-Niklaas, Belgium. Both are in GN, 417–20.

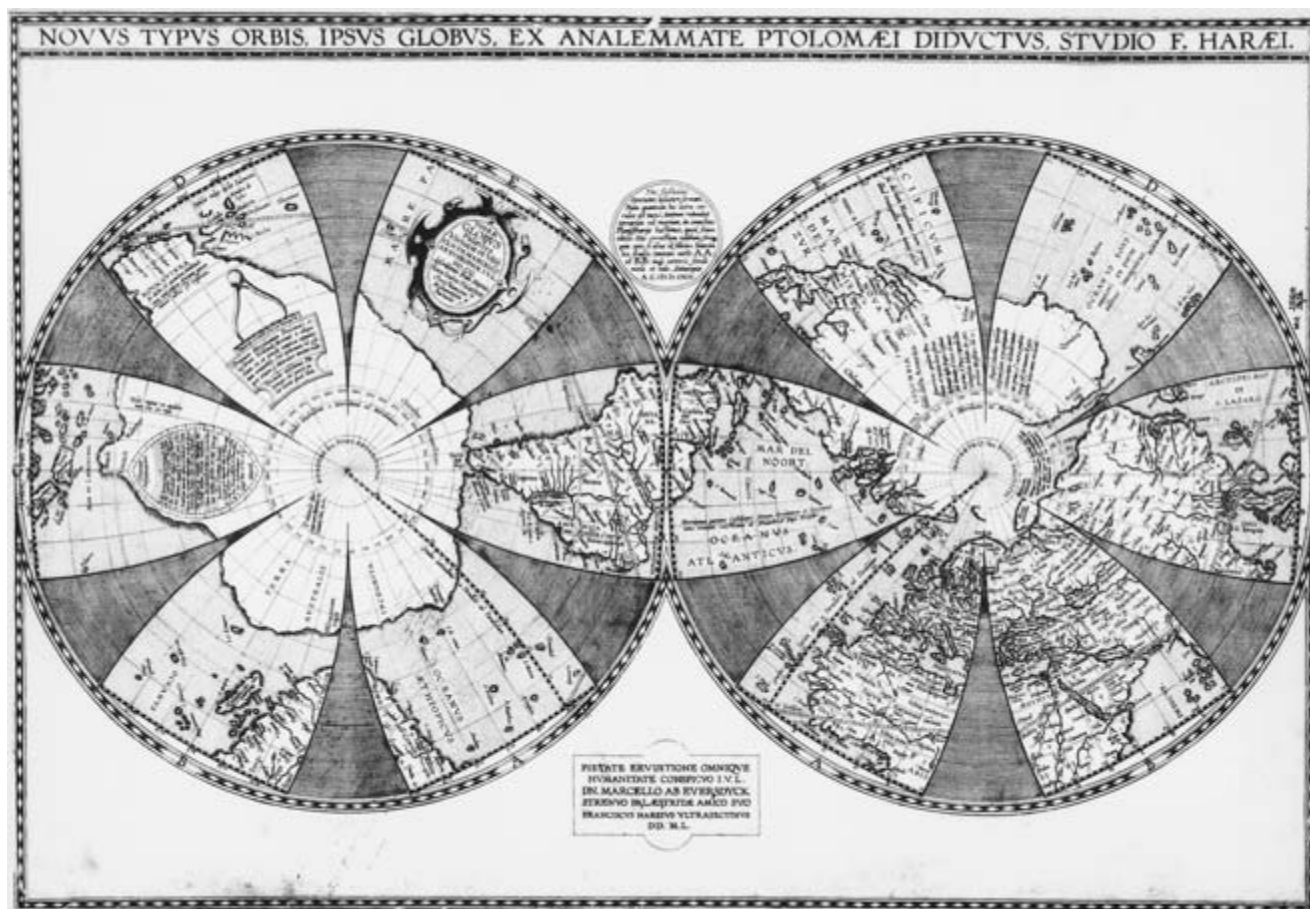


FIG. 44.46. THEMATIC GLOBE GORES BY FRANCISCUS HARAEUS SHOWING THE DISPERSION OF DIFFERENT RELIGIONS. Two sets of six gores.

Diameter of the globe: 17.5 cm; size of the sheet: 38 × 56 cm. Photograph courtesy of the Mitchell Library, State Library of New South Wales, Sydney (ZM2 100a/1614/1).

depiction of religious dispersion. Based on the instructive notes on the sheet, the publication date must have been 1615/16.

Dutch Globes after ca. 1650: Reprints by Joan Blaeu and Followers

Around 1650, the copperplates and tools for making Amsterdam globes were in the hands of four different individuals, not including Van Langren. Joan Blaeu had the globes of his father, Willem Jansz. Blaeu. Henricus Hondius had possession of the copperplates to the five globes of his father, Jodocus Hondius the Elder. Johannes Janssonius had the plates to his own globe, to the three globe pairs by Pieter van den Keere, and to the forty-four centimeter globe pair he had published together with Jodocus Hondius Jr. And Jacob Aertsz. Colom still possessed his own copperplates.

Joan Blaeu attempted to improve his competitive position in the field of globe production by buying up the cop-

perplates of his competitors. Before about 1670, he succeeded in obtaining the copperplates of Henricus Hondius and Johannes Janssonius. In purchasing Janssonius's copperplates and their appurtenances, Joan Blaeu acquired the copperplates to almost all the globes made at the beginning of the seventeenth century in Amsterdam, with the exception of those by Jacob Aertsz. Colom. Blaeu provided some of the other globes made in his shop with the name of Blaeu. To what extent the globes of other authors might have been changed by Blaeu cannot be determined; not a single example is known. Although this could mean that none has been preserved, it could also be argued that Blaeu sold the globes without making modifications, and that he sold the preserved copies of Hondius and Van den Keere.

Joan Blaeu died in 1673, the year after the large fire in his print shop. The firm was temporarily continued under the direction of his sons Willem, Pieter, and Joan Jr. Between 1674 and 1682, during the sons' tenure, the firm acquired the last copperplates, those of Jacob Aertsz. Colom.

However, the Blaeus were by then involved in only a few activities having to do with the globe trade.

JAN JANSZ. VAN CEULEN

In 1682, all the copperplates and instruments for making globes in the possession of Joan Blaeu's heirs were purchased by Jan Jansz. van Ceulen. As the new owner of the globe factory, Van Ceulen approached his business energetically. He requested a charter for the publication of globes from the states of Holland and West Friesland; this was the first time such a general charter for globes had been requested since 1597. Van Ceulen intended to restore the copperplates that had been damaged in the 1672 fire and even to make new plates. He received a fifteen-year charter on 24 September 1682; his globes alone were allowed to be sold in Holland. Whether this charter was more effective than those of Van Langren and Hondius at the end of the sixteenth century cannot be determined, but it is true that no new globes were made in Holland during the period when his charter was in effect (1682–97). There are indications that Van Ceulen did indeed revise and improve the copperplates to the globes, including the distinction made between Blaeu's "globes" and "new globes" in his inventory.⁴²¹ Almost all the globes made in the first half of the seventeenth century in Amsterdam could be found in Van Ceulen's factory. However, the state of the copperplates was such that only the twenty-three, thirty-four, and sixty-eight centimeter globes of Blaeu and those of Colom could still be produced.

Jan Jansz. van Ceulen was aided in the production of his globes by his brother, Abraham van Ceulen, who gave his profession as merchant and later dealt in pocket globes, and his two sons, Frans and Johannes, who later became a plumber and then a window setter. After the death of Jan Jansz., his sons offered to work for the new owner. His heirs had the estate publicly auctioned in 1689, and the complete factory was purchased by Johannes de Ram. De Ram sold "all the celestial and terrestrial globes and spheres left behind by the late, honorable Joan Blaeu."⁴²² It is not known whether De Ram put his name and address on these globes, and it is also not clear how he managed to offer globes, the copperplates of which were *vuyt en beschadicht* (dirty and damaged) in 1689.

When De Ram died in 1693, the globe factory passed to his widow, Maria van Zutphen. In 1696, she married Jacques de la Feuille, a watchmaker from Sedan, in northern France. After their marriage, Jacques de la Feuille became an art and map seller in De Ram's place. De la Feuille put his own address on the thirty-four centimeter Blaeu terrestrial globe and also added his name to the largest Blaeu celestial globes he sold.

De la Feuille was not a man of good character. He was a drunk, pawned his wife's things, and abused her. It is

not likely that he still made and sold globes after about 1700. Quite possibly, the inventory of the globe factory was one of the things he pawned. The globe factory, set up by such people as Jodocus Hondius and Willem Jansz. Blaeu, came to an inglorious end.

SUMMARY REMARKS

In the course of the sixteenth century, the University of Leuven grew into a center of scholarship in the Low Countries, where much attention was given to cartography. Antwerp publishers benefited from this development, for they were able to produce and market maps based on the latest scholarly insights. The production of printed maps and atlases made greater demands on the organization of a publishing company and required better coordination of the communication process than did the production of other types of printed material. Map printers and sellers had to seek a larger consuming market for their products. In the course of the sixteenth century, Antwerp offered the best opportunities for enterprising booksellers and mapsellers to exploit this market, which also expanded due to the growing general interest in geography caused by, among other things, the expeditions to new territories. Even before the beginning of the seventeenth century, however, the commercial and cartographic center moved to Amsterdam, where a worldwide trade in maps, atlases, and globes was concentrated. In the Seven Provinces of the late sixteenth century and the seventeenth, map producers constantly looked for quicker and less expensive production methods. The Fall of Antwerp in 1585 led to an increased population in the Northern Provinces, resulting in an exploding market for map consumers and producers. In Amsterdam, mapmakers began to specialize, and a stricter division between the professions of map printer, publisher, and seller took place. The expanding national and international consumer market offered space for newcomers, although competition increased. The hegemony of the Low Countries in commercial cartography came to an end around 1675, when French publishers began to dominate the map trade. However, the Republic would remain the center for distribution of cartographic material for a long time.

The commercial cartography of the Low Countries during the Renaissance can thus boast of a quantity and quality of production previously unknown. In the area of atlases, there was an extremely varied offering: world atlases, nautical atlases, pocket atlases, town atlases, re-

421. Amsterdam, Gemeentearchief, Not. Arch. 4484 (not. Wybrants), 128–35.

422. Advertisement in the *Amsterdamse Courant*, 21 October 1690. See Peter van der Krogt, *Advertenties voor kaarten, atlassen, globes e.d. in Amsterdamse kranten, 1621–1811* (Utrecht: HES, 1985), 25 (no. 56).

gional atlases, historical atlases, and celestial atlases. The differentiation of the cartographic products was fed by the increased demand of the public in the Seven Provinces, which had the highest degree of literacy in Europe. A cartographic innovation was the first modern world atlas by Abraham Ortelius, published in Antwerp in 1570. Atlas publishers began to compete with one another to produce ever more maps or more beautiful atlases. Atlas competition reached its climax when Joan Blaeu published a nine-to twelve-part world atlas in five languages between 1662 and 1672. The scholarly value of a world atlas was by then secondary to its size.

Wall maps formed another appealing cartographic product in the heyday of commercial cartography in the Low Countries. Only a few of these multisheet maps have survived the ravages of time, but they are of great importance for, among other things, studying the contemporary image of the world. In Antwerp, and later in Amsterdam, the most up-to-date geographical information available from explorers was processed as quickly as possible into

wall maps. The owners of such maps followed geographical progress very closely. Outdated wall maps were thus quickly exchanged for new ones, so the demand for this sort of cartographic product was automatically ensured.

The production of globes had already begun in the Low Countries in the second quarter of the sixteenth century. Elsewhere in Europe, an interest in globes was also on the rise. In the first half of the seventeenth century, however, the development of globe production in the Low Countries diverged from that in the rest of Europe. Globes manufactured in the Low Countries came to dominate the worldwide market. As in the case of atlases, globes were available in many types and designs. Another parallel was the great rivalry between the various publishers: continuing competition led, around 1650, to the production in Amsterdam of giant globes with a diameter of several meters. Once again, quantity prevailed over scholarly quality. Cartographic innovation within commercial cartography would take place only in non-Dutch countries.

APPENDIX 44.1 MAPS PUBLISHED IN HIERONYMUS COCK'S QUATRE VENTS

Year	Area Represented	Format; Size (cm)	Location
1551	Parma	?; 47 × 32.5	Vatican City, Biblioteca Apostolica Vaticana
[1551]	Malta	?	No example known
1551	Surroundings of Mirandola	?; 42 × 30	BL
1552	Piedmont	2 sheets; 54.5 × 74.5	BNF
1553	Sicily	2 sheets; 36.5 × 53	Wolfenbüttel, Herzog August Bibliothek
1553	Spain	4 sheets; 77 × 95	Weimar, Herzogin Anna Amalia Bibliothek
1555	Turkey	2 sheets; 42.5 × 58.5	Wolfenbüttel, Herzog August Bibliothek
1556	Savoy	2 sheets; 46.5 × 66	Wolfenbüttel, Herzog August Bibliothek; BNF
1557	Seventeen Provinces	3 sheets; 54 × 103.5	Florence, Biblioteca Nazionale Centrale
1559	Gelderland and Zutphen	?	No example known
1560	Duchy of Milan	2 sheets; 62 × 50	Florence, Istituto Geografico Militare; BL
1562	America	4 sheets; 107 × 104	BL; Washington, D.C., Library of Congress
1562	Course of the Demer	?	No example known
1562	Poland	2 sheets; 42 × 56	Wolfenbüttel, Herzog August Bibliothek; Paris, Bibliothèque de l' Arsenal
1564	Gelderland and Cleve	6 sheets; 82 × 77	BNF (1601 edition by Paul van der Houve)
1565?	Westphalia	?	No example known
1565	Germania	12 sheets; 119 × 136	Innsbruck, Geographisches Institut der Universität
1565	Malta	?; 23 × 33	Basel, Öffentliche Bibliothek der Universität
1566?	Burgundy	?	No example known
[Before 1570]	Germania (Heydanus)	16 sheets; ?	No example known
[Before 1570]	Germania	6 sheets; ?	No example known
1570	Holy Land	9 sheets; 103 × 108	BL

Sources: Based on Jean Denucé, *Oud-Nederlandsche kaartmakers in betrekking met Plantijn*, 2 vols. (Antwerp: De Nederlandsche Boekhandel, 1912–13; reprinted Amsterdam: Meridian, 1964), 1:118–139; Timothy A. Riggs, *Hieronymus Cock: Printmaker and Publisher* (New York: Garland Publishing, 1977); and MCN, 2:94–97 and 5:221–29.

APPENDIX 44.2 SUMMARY OF GERARD DE JODE'S MAPS

Year	Area Represented	Format; Size (cm)	Location
1560	Europe	6 sheets; 66.5 × 103	Wolfenbüttel, Herzog August Bibliothek
1562	Northern Europe	6 sheets; 75.5 × 100.5	BNF
1562	Germany	4 sheets; 67.5 × 88	BNF
1563	Portugal	4 sheets; 55 × 93.5	BNF; Wolfenbüttel, Herzog August Bibliothek
1564	World	8 sheets; 87.5 × 150	BL; Basel, Öffentliche Bibliothek der Universität
1565	Holland	2 sheets; 72.5 × 54	BNF; Wolfenbüttel, Herzog August Bibliothek
1565	Flanders	2 sheets; 54 × 62.5	BNF
1565	Brabant	2 sheets; 56 × 62.5	BNF
1566	Seventeen Provinces	6 sheets; 76 × 93.5	BNF; Wolfenbüttel, Herzog August Bibliothek
1567	Hungary	6 sheets; 48.5 × 117	BNF; Wolfenbüttel, Herzog August Bibliothek
1568	Italy	4 sheets; 53.5 × 75.5	BNF; Wolfenbüttel, Herzog August Bibliothek
[Ca. 1568]	Brabant	1 sheet; 34.5 × 49	Wolfenbüttel, Herzog August Bibliothek
[1568]	Friesland	1 sheet; 43 × 53	Basel, Öffentliche Bibliothek der Universität
1569	Rhine	3 sheets; 50 × 130	Schwerin, Mecklenburgische Landesbibliothek
1571	World	2 sheets; 33 × 51	BNF; Basel, Öffentliche Bibliothek der Universität
1584	Europe	6 sheets; 92 × 116.5	Berlin, Staatsbibliothek

APPENDIX 44.3 BERNARD VAN DEN PUTTE'S WOODCUT MAPS

Year	Area Represented	Format; Size (cm)	Location
1557	France, the Netherlands, and Switzerland	12 sheets; 80.5 × 89.5	Wolfenbüttel, Herzog August Bibliothek
1558	Holland	9 sheets; 110.5 × 79	Breslau, former Stadtbibliothek (lost in World War II)
1559	Friesland	9 sheets; 88.5 × 79	Breslau, former Stadtbibliothek (lost in World War II)
1559	<i>Itinera Israelitum</i>	9 sheets; 88.5 × 101.5	BNF
1566	Europe	12 sheets; 93 × 134	BNF (one sheet missing)
Ca. 1569	World	?	London, Royal Geographical Society (one sheet only)
1570	World	12 sheets; 105.5 × 193	Wolfenbüttel, Herzog August Bibliothek
1572	Europe	12 sheets; 93 × 134	Wolfenbüttel, Herzog August Bibliothek

APPENDIX 44.4 WALL MAPS PUBLISHED IN ANTWERP (SIXTEENTH CENTURY)

Year	Region Represented	Publisher/Printer	Technique	Format; Size (cm)
[1540]	World	Gemma Frisius	?	?
1544	World	Sebastian Cabot	Copper engraving	4 sheets; 125 × 218
1549	World	Joannes Baptista Guicciardini	Woodcut	? sheets; ca. 225 × 260
1553	Spain	Hieronymus Cock	Copper engraving	4 sheets; 77 × 95
1556	World	Hendrik Terbruggen	Woodcut	?
	Gelderland	Anonymous	Copper engraving	9 sheets; 93 × 79
1557	France, Seventeen Provinces, and Switzerland	Bernard van den Putte	Woodcut	12 sheets; 80.5 × 89.5
	Seventeen Provinces	Hieronymus Cock	Woodcut	3 sheets; 54 × 103.5
1557?	Vermandois	Arnold Nicolai	Copper engraving	?
1558	Oostland (Baltic)	Arnold Nicolai	Woodcut	9 sheets; 71 × 96
	Flanders	Bernard van den Putte	Woodcut	4 sheets; 75 × 99
	Brabant	Arnold Nicolai	Woodcut	6 sheets; 82.5 × 76.5
	Holland	Bernard van den Putte	Woodcut	9 sheets; 110.5 × 79
1559	Friesland, Groningen, Drenthe, and Overijssel	Bernard van den Putte	Woodcut	9 sheets; 89 × 79
1560	Europe	Gerard de Jode	Woodcut	6 sheets; 66.5 × 103
	Zeeland	Willem Sylvius	Copper engraving	4 sheets; 51 × 70
1562	America	Hieronymus Cock	Copper engraving	6 sheets; 92 × 94
	Germania	Gerard de Jode	Copper engraving	4 sheets; 68 × 88
	Northern Europe	Gerard de Jode	Woodcut	6 sheets; 75.5 × 100.5
1563	Portugal	Gerard de Jode	Woodcut	4 sheets; 55 × 93.5
1564	World	Gerard de Jode and Abraham Ortelius	Copper engraving	8 sheets; 87 × 148
	Gelderland	Hieronymus Cock	Copper engraving	6 sheets; 82 × 77
1565	Germania	Hieronymus Cock and Christiaan Sgrooten	Copper engraving	12 sheets; 130 × 158
1566	Seventeen Provinces	Gerard de Jode	Copper engraving	6 sheets; 83 × 98
	Europe	Bernard van den Putte	Woodcut	12 sheets; 93 × 134
1567	Hungary	Gerard de Jode	Copper engraving	6 sheets; 54 × 122
	Asia	Abraham Ortelius	Copper engraving	8 sheets; 101 × 145
1568	Italy	Gerard de Jode	Copper engraving	4 sheets; 53.5 × 75.5
[Ca. 1569]	Africa	Gerard de Jode	Copper engraving	11 sheets; 102 × 122
[Before 1570]	Germania	Hieronymus Cock	Copper engraving	6 sheets; ?
	Germania	Hieronymus Cock and Pieter van der Heyden	Copper engraving	16 sheets; ?
	Gelderland	Bernard van den Putte	Copper engraving?	?
1570	Holy Land	Hieronymus Cock	Copper engraving	9 sheets; 118 × 110
	World	Bernard van den Putte	Woodcut	12 sheets; 114 × 197
1571	Spain	Abraham Ortelius	Copper engraving	6 sheets; 83 × 102
1572	Europe	Bernard van den Putte	Woodcut	12 sheets; ?
[Ca. 1576]	America	Gerard de Jode	?	?
[Ca. 1577]	Asia	Gerard de Jode	Copper engraving	8 sheets; 98 × 138
1578	Seventeen Provinces	Filips Galle	Copper engraving	12 sheets; 130 × 151
1584	Europe	Gerard de Jode	Copper engraving	6 sheets; 92 × 117
1592	France	Cornelis de Jode	Copper engraving	9 sheets; 107 × 138

Source: Based on Peter van der Krogt, "Commercial Cartography in the Netherlands, with Particular Reference to Atlas Production (16th–18th Centuries)," in *La cartografia dels Països Baixos* (Barcelona: Institut Cartogràfic de Catalunya, 1995), 71–140, esp. 80, and MCN, vols. 1–5.

APPENDIX 44.5 SELECTION OF WALL MAPS—MAINLY PROTOTYPES—PUBLISHED IN
AMSTERDAM, CA. 1590—CA. 1670

Year	Region Represented	Publisher/Printer	Technique	Format; Size (cm)
1592	World	Cornelis Claesz. and Joan Baptista Vrients (Petrus Plancius)	Copper engraving	19 sheets; 146 × 233
1593	Seventeen Provinces	Jodocus Hondius	Copper engraving	[4 sheets; 73 × 91.5]
1595	Europe	Jodocus Hondius	Copper engraving	8 sheets; 133 × 165
1595/96	World	Jodocus Hondius	Copper engraving	8 sheets; 88 × 141
1598	Europe	Jodocus Hondius	Copper engraving	[4 sheets; 71 × 107]
	Africa	Jodocus Hondius	Copper engraving	[4 sheets; 70 × 106]
	America	Jodocus Hondius	Copper engraving	[4 sheets; 71 × 106]
	Asia	Jodocus Hondius	Copper engraving	[4 sheets; 70 × 105?]
[Ca. 1600]	France	Jodocus Hondius	Copper engraving	4 sheets; 75 × 100
	World	Hendrik van Langren	Copper engraving	20 sheets?; 173 × 230.5 (including decorative borders)
[Ca. 1602]	World	Cornelis Claesz.	Copper engraving	[4 sheets; 81 × 112]
	Asia	Cornelis Claesz.	Copper engraving	8 sheets; 106 × 148
	Africa	Cornelis Claesz.	Copper engraving	[8 sheets; 91 × 135]
	America	Cornelis Claesz.	Copper engraving	8 sheets; 106 × 146
1603	World	Cornelis Claesz. (Jodocus Hondius)	Copper engraving	4 sheets; 74 × 107
	World	Jodocus Hondius	Copper engraving	12 sheets; 153 × 212 (including decorative borders)
1604	Europe	Cornelis Claesz.	Copper engraving	8 sheets; 102 × 145
	World	Cornelis Claesz. (Luís Teixeira)	[Copper engraving?]	[9 sheets; ?]
	World	Cornelis Claesz. (Luís Teixeira)	[Copper engraving?]	[22 sheets; ?]
[Ca. 1604]	World	Willem Jansz. Blaeu	Copper engraving	12 sheets; 108 × 231 (excluding decorative borders)
1605	World	Willem Jansz. Blaeu	Copper engraving	20 sheets; 170 × 238
1607	Seventeen Provinces	Pieter van den Keere	Copper engraving	12 sheets; 151 × 165
	World	Willem Jansz. Blaeu	Copper engraving	14 sheets; 143 × 204 (including text borders)
	World	David de Meyne and Harmen Allertsz. (Petrus Plancius)	Copper engraving	12 sheets; 152 × 186 (including decorative borders)
1608	World (2d state of 1603 ed.)	Jodocus Hondius	Copper engraving	12 sheets; 153 × 212 (including decorative borders)
	Europe	Willem Jansz. Blaeu	Copper engraving	[6 sheets; 118.5 × 167]
	Asia	Willem Jansz. Blaeu	Copper engraving	[6 sheets; 118.5 × 167]
	Africa	Willem Jansz. Blaeu	Copper engraving	[6 sheets; 118.5 × 167]
	America	Willem Jansz. Blaeu	Copper engraving	[6 sheets; 118.5 × 167]
	Seventeen Provinces	Willem Jansz. Blaeu	[Copper engraving?]	[6 sheets; 108 × 124? (excluding decorative borders)]
1609	World	Pieter van den Keere	Copper engraving	4 sheets; 83 × 108 (excluding decorative borders)
1611	World	Jodocus Hondius	Copper engraving	20 sheets; 183 × 247
	Germania	Pieter van den Keere	Copper engraving	7 sheets; 78.5 × 105.5
[Ca. 1611]	World	Pieter van den Keere	Copper engraving	8 sheets; 151 × 197 (excluding decorative borders)

APPENDIX 44.5 (*continued*)

Year	Region Represented	Publisher/printer	Technique	Format; Size (cm)
1612	Spain	Hessel Gerritsz.	Copper engraving	4 sheets; 112.5 × 142
	Germania	Willem Jansz. Blaeu	Copper engraving	6 sheets; 107.5 × 123.5 (excluding decorative borders)
[After 1613]	Europe	Jodocus Hondius Jr.	Copper engraving	[6 sheets; 103 × 124]
[1614–17]	Italy	Willem Jansz. Blaeu	Copper engraving	6 sheets; 137.5 × 194 (including decorative borders)
1617	Italy	Hessel Gerritsz. and Jodocus Hondius Jr.	Copper engraving	4 sheets; 119.5 × 167.5
1619	World	Willem Jansz. Blaeu	Copper engraving	8 sheets; 154 × 248 (including decorative borders)
1621	Holland and West Friesland	Willem Jansz. Blaeu	Copper engraving	17 sheets; 114 × 170 (including text borders)
1632	Brabant	Henricus Hondius	Copper engraving	4 sheets; 90 × 103
[Ca. 1635]	Scandinavia	Henricus Hondius	Copper engraving	6 sheets; 107 × 122
1632	Germania	Henricus Hondius	Copper engraving	12 sheets; 122 × 141
[Before 1638]	Flanders	Henricus Hondius	Copper engraving	[7 sheets; ca. 100 × 125]
1638	Flanders	Willem Jansz. Blaeu	Copper engraving	6 sheets; 108 × 124.5
[Ca. 1638]	Brabant?	Willem Jansz. Blaeu	Copper engraving	[6 sheets?; ?]
	Spain	Willem Jansz. Blaeu	Copper engraving	6 sheets; 100 × 122
	France	Willem Jansz. Blaeu	Copper engraving	6 sheets; 108 × 126
1639	Germania	Joan Blaeu	Copper engraving	[? sheets; 144 × 181.5]
	Holland and West Friesland	Jacob Aerts. Colom	Copper engraving	40 sheets; 162 × 302
1644	England	Cornelis Danckerts	Copper engraving	12 sheets; 132 × 166
1647	Dutch Brasil	Joan Blaeu	Copper engraving	9 sheets; 101 × 161
1648	World	Joan Blaeu	Copper engraving	20 sheets; ?
1651	United Provinces	Cornelis Danckerts	Copper engraving	9 sheets; 129 × 160
1652	Southeast Asia	Hugo Allard	Copper engraving	9 sheets; 128 × 157
1654/55	Zeeland	Nicolaas I Visscher (Zacharias Roman)	Copper engraving	9 sheets; 142 × 162
[Ca. 1655]	Holy Land	Joan Blaeu	Copper engraving	8 sheets; 87 × 178
1656	Brabant	Nicolaas I Visscher (Zacharias Roman)	Copper engraving	12 sheets; 140 × 161
	Flanders	Nicolaas I Visscher	Copper engraving	12 sheets; 148 × 160
1657	British Isles	Hugo Allard	Copper engraving	6 sheets; 103 × 122
1658	China	Joan Blaeu	Copper engraving	6 sheets; 100 × 125
1659	America (I)	Joan Blaeu	Copper engraving	6 sheets; 103 × 124
	America (II)	Joan Blaeu	Copper engraving	6 sheets; 103 × 124
	Asia (I)	Joan Blaeu	Copper engraving	6 sheets; 103 × 124
	Asia (II)	Joan Blaeu	Copper engraving	6 sheets; 103 × 124
	Africa	Joan Blaeu	Copper engraving	6 sheets; 103 × 124
	Europe	Joan Blaeu	Copper engraving	6 sheets; 103 × 124
?	France	Joan Blaeu	Copper engraving	6 sheets; 102 × 123
	Northern Europe	Joan Blaeu	Copper engraving	6 sheets; 107 × 122
[Ca. 1670]	Seventeen Provinces	Frederick de Wit	Copper engraving	9 sheets; 132 × 168
1682	Seventeen Provinces	Nicolaas II Visscher	Copper engraving	13 sheets; 172 × 163.5 (including decorative borders)

Source: Based on MCN, vols. 1–5.

APPENDIX 44.6 MULTISHEET MAPS OF THE LOW COUNTRIES, 1557–CA. 1700

Year	Publisher/Printer	Title	Number of sheets
1557	Hieronymus Cock (Antwerp)	[<i>Description du Pays Bas</i>]	3
1566	Gerard de Jode (Antwerp)	<i>Totius Galliae Belgicae</i>	6
Ca. 1574	Frans Hogenberg (Cologne)	?	8?
Ca. 1578	Filips Galle (Antwerp)	<i>Nova et emendata totius Belgi, sive Inferioris Germaniae</i>	12
1602	Joan Baptista Vrients (Antwerp)	Idem	12
1605	Joan Baptista Vrients (Antwerp)	Idem	12
Ca. 1653	Joannes Galle (Antwerp)	Idem	12
After 1593	Jodocus Hondius (Amsterdam)	<i>Germania Inferior</i>	4
1630	Henricus Hondius (The Hague)	Idem	4
1671	Hugo Allard (Amsterdam)	Idem	4
1594	Joannes van Doetecum (Haarlem)	<i>Germania Inferior/Nova XVII Provinciarum Germaniae Inferioris descriptio</i>	9
1636	Claes Jansz. Visscher (Amsterdam)	Idem	9
1594/98	?	<i>Geographica XVII Inferioris Germaniae regionum tabula</i>	4
1602	Pieter van den Keere (Amsterdam)	Idem	4
After 1603	?	Idem	4
1607	Pieter van den Keere (Amsterdam)	<i>Nova et accurata geographica descriptio Inferioris Germaniae</i>	12
1608	Willem Jansz. Blaeu (Amsterdam)	<i>Nieuwe ende waarachtighe beschrijvinghe der Zeventien Nederlanden</i>	8
1622	Willem Jansz. Blaeu (Amsterdam)	Idem	12
After 1638	Joan Blaeu (Amsterdam)	Idem	12
1658	Joan Blaeu (Amsterdam)	Idem	12
Before 1616	Johannes van Doetecum (Haarlem)	<i>Belgium sive Inferior Germania</i>	2
1616	François van den Hoeye (Amsterdam)	Idem	2
1647	Michael Florent van Langren (Brussels)	Without title	2
1647	Michael Florent van Langren (Brussels)	<i>Status Belgicus</i>	6
1647–56	Michael Florent van Langren (Brussels)	Idem	6
1675–77	François Foppens (Brussels)	Idem	6
After 1692	François Foppens (Brussels)	Idem	6
Ca. 1650	Nicolas I Berey (Paris)	<i>Carte generale des Dixet Sept Provinces des Pays bas</i>	4
Before 1661	Frederick de Wit (Amsterdam)	<i>Belgii XVII Provinciarum tabula</i>	9
1661	Frederick de Wit and Hugo Allard (Amsterdam)	<i>Tabula nova XVII Belgi Provinciarum</i>	9
Ca. 1710–20	Pieter van der Aa (Leiden)	<i>Belgii XVII Provinciarum tabula/Les XVII Provinces du Pais-Bas avec les Terres Contigues</i>	9
Ca. 1735	Covens and Mortier (Amsterdam)	Idem	9
1672	Alexis-Hubert Jaillot (Paris)	<i>Les Dix-Sept Provinces des Pays-Bas / Les Pays-Bas divisés en Dix-Sept Provinces</i>	2
1675	Alexis-Hubert Jaillot (Paris)	Idem	2
1676	Alexis-Hubert Jaillot (Paris)	Idem	2
1680	Alexis-Hubert Jaillot (Paris)	Idem	2
1689	Alexis-Hubert Jaillot (Paris)	Idem	2
[1690–92]	Pieter Mortier (Amsterdam)	Idem (copy)	2
1696	Pieter Mortier (Amsterdam)	Idem (copy)	2
1696–1711	Pieter Mortier (Amsterdam)	Idem (copy)	2

APPENDIX 44.6 (*continued*)

Year	Publisher/Printer	Title	Number of sheets
1701	Alexis-Hubert Jaillot (Paris)	Idem	2
1721–50	Covens and Mortier (Amsterdam)	Idem (copy)	2
1785	Louis Denis (Paris)	Idem	2
1680–90	Frederick de Wit (Amsterdam)	<i>Belgicarum XVII Provinciarum descriptio</i>	4
Ca. 1682	Nicolaas II Visscher (Amsterdam)	<i>Tabula nova XVII Belgii Provinciarum</i>	9
Ca. 1690	Hugo Allard (Amsterdam)	Idem	9
1689	Giacomo Cantelli da Vignola (Rome)	<i>Le Diecisette Provincie de Paesi Bassi</i>	4
1689	Herman Moll (London)	<i>A New Mapp Giving a True Discription of Germany and the XVII Provinces</i>	2
1689–93	Johannes de Ram (Amsterdam)	<i>Belgium Foederatum/Belgicarum XVII Provinciarum delineatio</i>	6
1689–93	Johannes de Ram (Amsterdam)	<i>Foederatum Belgium / Belgicarum XVII Proventiarum nova delineatio / Belgii Omnium Proventiarum tabula</i>	4
1689–1702	Gerard Valck (Amsterdam)	<i>Nieuwe en Seer Naaukeurige Kaarte vande XVII Provincien in Neerland / Novissima XVII Provinciarum tabula</i>	4
1731–67	Leonard Schenk (Amsterdam)	Idem	4
1690	Henri Sengre (Paris)	<i>D.O.M. Carte general des Dixsept Provinces des Pays-Bas</i>	6
1695	Ambrosius Schevenhuysen (Haarlem)	<i>Nieuwe en Seer Naaukeurige Kaart vande XVII Provincien in Neerland</i>	4
1728–56	Hendrik de Leth (Amsterdam)	Idem	4

Sources: Compiled from MCN and H. A. M. van der Heijden, *Oude kaarten der Nederlanden, 1548–1794: Historische beschouwing, kaartbeschrijving, afbeelding, commentaar / Old Maps of the Netherlands, 1548–1794: An Annotated and Illustrated Cartobibliography*, 2 vols. (Alphen aan den Rijn: Canaletto/Repro-Holland; Leuven: Universitaire Pers, 1998).

APPENDIX 44.7 GLOBES PUBLISHED IN AMSTERDAM, CA. 1596–CA. 1605

Year	Type (Celestial [C]/ Terrestrial [T]), Diameter	Maker
Ca. 1596/97	T, 14 inches (35.5 cm)	Jodocus Hondius
Before 1597	T, 3.5 inches (8 cm)	Jodocus Hondius
Before 1598	C, 3.5 inches (8 cm)	Jodocus Hondius
Ca. 1598	C, 13.5 inches (34 cm)	Willem Jansz. Blaeu
Ca. 1597/98	C, 14 inches (35.5 cm)	Jodocus Hondius and Petrus Plancius
1599	T, 13.5 inches (34 cm)	Willem Jansz. Blaeu
Before 1602	C, 4 inches (10 cm)	Willem Jansz. Blaeu
Before 1602	T, 4 inches (10 cm)	Willem Jansz. Blaeu
1600	C, 14 inches (35.5 cm)	Jodocus Hondius
1600	T, 14 inches (35.5 cm)	Jodocus Hondius
1601	C, 8.5 inches (21 cm)	Jodocus Hondius
1601	T, 8.5 inches (21 cm)	Jodocus Hondius
1602	C, 9 inches (23 cm)	Willem Jansz. Blaeu
1602	T, 9 inches (23 cm)	Willem Jansz. Blaeu
1602	C, 4 inches (10 cm)	Jan van den Broucke
1603	C, 13.5 inches (34 cm)	Willem Jansz. Blaeu
Ca. 1601/5	T, 13 inches (32.5 cm)	Arnold van Langren

Source: Derived from GN, 429, 463–76, and 488–505.

APPENDIX 44.8 PRODUCTION OF DUTCH GLOBES, CA. 1606–1648

Year	Type (Celestial [C]/ Terrestrial [T]), Diameter	Maker/Publisher
1606	T, 6 inches (13.5 cm)	Willem Jansz. Blaeu
1606	C, 6 inches (13.5 cm)	Willem Jansz. Blaeu
Ca. 1610	T, 4.5 inches (11 cm)	Jodocus Hondius
[?]	[C, 4.5 inches (11 cm)]	Jodocus Hondius
Ca. 1612	C, 10.5 inches (26.5 cm)	Pieter van den Keere
1613	T, 4 inches (9.5 cm)	Pieter van den Keere
1613	C, 4 inches (9.5 cm)	Pieter van den Keere
1613	T, 21 inches (53.5 cm)	Jodocus Hondius; published by Jodocus Hondius Jr. and Adriaen Veen
1613	C, 21 inches (53.5 cm)	Jodocus Hondius; published by Jodocus Hondius Jr. and Adriaen Veen
1614	T, 10.5 inches (26.5 cm)	Pieter van den Keere
1614	T, 6 inches (14.5 cm)	Pieter van den Keere
1614	C, 6 inches (14.5 cm)	Pieter van den Keere
1616	C, 26 inches (68 cm)	Willem Jansz. Blaeu
1617	T, 26 inches (68 cm)	Willem Jansz. Blaeu
1620	T, 4 inches (9.5 cm)	Pieter van den Keere; published by Johannes Janssonius
1621	T, 6.5 inches (15.5 cm)	Johannes Janssonius
[?]	[C, 6.5 inches (15.5 cm)]	Johannes Janssonius
1622	T, 26 inches (68 cm)	Willem Jansz. Blaeu
1622	C, 26 inches (68 cm)	Willem Jansz. Blaeu
1623	T, 17.5 inches (44 cm)	Jodocus Hondius Jr. (Johannes Janssonius)
1623	C, 17.5 inches (44 cm)	Jodocus Hondius Jr. (Johannes Janssonius)
1627	T, 10.5 inches (26.5 cm)	Pieter van den Keere; published by Johannes Janssonius
After 1630	T, 26 inches (68 cm)	Willem Jansz. Blaeu
After 1630	C, 26 inches (68 cm)	Willem Jansz. Blaeu
Ca. 1630	C, 13.5 inches (34 cm)	Jacob Aertsz. Colom
Ca. 1630	T, 13.5 inches (34 cm)	Jacob Aertsz. Colom
Ca. 1635	T, 8 inches (20 cm)	Jacob Aertsz. Colom
[Ca. 1635]	[C, 8 inches (20 cm)]	Jacob Aertsz. Colom
[Ca. 1635]	[T, ca. 6 inches (10 cm)]	Jacob Aertsz. Colom
[Ca. 1635]	[C, ca. 6 inches (10 cm)]	Jacob Aertsz. Colom
1636	T, 17.5 inches (44 cm)	Jodocus Hondius; published by Jodocus Hondius Jr. and Johannes Janssonius
Ca. 1640	T, 13.5 inches (34 cm)	Jacob Aertsz. Colom
1640	T, 21 inches (53.5 cm)	Jodocus Hondius; published by Henricus Hondius
1640	C, 21 inches (53.5 cm)	Jodocus Hondius; published by Henricus Hondius
1645	T, 10.5 inches (26.5 cm)	Pieter van den Keere; published by Johannes Janssonius
1645/48	T, 26 inches (68 cm)	Joan Blaeu
1648	T, 17.5 inches (44 cm)	Jodocus Hondius; published by Johannes Janssonius
1648	C, 17.5 inches (44 cm)	Jodocus Hondius; published by Johannes Janssonius

Source: Derived from GN, 477–83, 506–23, 525–37, and 539–44.