David Alling's Chair Manufactory: Craft Industrialization in Newark, New Jersey, 1801-1854

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Don C. Skemer

TO THE LEADERS OF the Newark business community in the economic boom years of the 1830s, the time-honored Calvinist virtues of their forebears seemed to be the perfect explanation for their city's sudden rise to prosperity and prominence. "The value and blessings of domestic industry are happily illustrated in [Newark's] progress," said Benjamin T. Pierson in 1835, "and it is a fact worthy of record, that while our citizens individually have been the architects of their own fortunes, so our town collectively is not indebted to any adventitious causes for its advancement, but has grown and flourished solely by industry, frugality and enterprise, and now ranks among the first inland towns in the United States." Jabez G. Goble added in 1836, "Without the great essential of manufacturing—*water power*—by the force of well directed industry, accompanied with good morals, this city has risen into an enviable consequence."[1]

This prevalent belief in the financial rewards of hard work and individual initiative is graphically illustrated in two contemporary paintings of David Alling's business establishment and house. Alling was a Newark, New Jersey, chair manufacturer who in the course of a successful business career had seen Newark grow from a provincial town to one of the nation's most important inland industrial cities, from a population of about 1,000 to 19,732.[2] Apparently executed about the same time, each painting depicts Alling's warerooms, house, and manufactory. In one version two men pause in front of Alling's warerooms, a woman and girl walk past his house, and a black worker emerges, possibly from behind the manufactory, with an empty wheelbarrow (fig. 1). In the more interesting of these two paintings, Alling posed proudly in the half-open doorway of the manufactory where, since the early years of the century, he had produced chairs and other seating furniture (fig. 2). A more elegant chair is placed beside his front stairs, the black worker has traversed the sidewalk and loaded a bundle onto his wheelbarrow, and the two men have replaced the woman and girl in front of Alling's house.

Often exhibited and reproduced as charming evocations of early city life, these paintings are revealing historical documents. Together with eleven extant volumes of Alling's business and estate records that span the years between 1801 and 1857, these artist's images allow us to step, as it were, through the doors of Alling's manufactory and study the inner workings of an ancient craft being industrialized as a result of market forces. Early industrialization in Newark has been studied, but rarely with adequate recourse to original records.

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[1] Benjamin Pierson, *Directory of the City of Newark for 1835–6* (Newark: Newark Daily Advertiser, 1835), p. 21. This confident statement in Pierson's "Historical Sketch" was repeated in subsequent Newark directories until 1840. Jabez G. Goble, "Newark, New Jersey," *Journal of the American Institute* 1, no. 9 (June 1836): 475.

[2] Joseph Atkinson, *The History of Newark, New Jersey, Being a Narrative of Its Rise and Progress* (Newark: William B. Guild, 1978), pp. 186–87. The city census of 1836 counted 3,624 "foreigners" (that is, aliens and naturalized citizens) in addition to 19,732 native-born inhabitants. The Newark Common Council, which had this census taken, discovered that the city's population had nearly doubled from 1830 to 1836 as a result of industrial and commercial expansion.

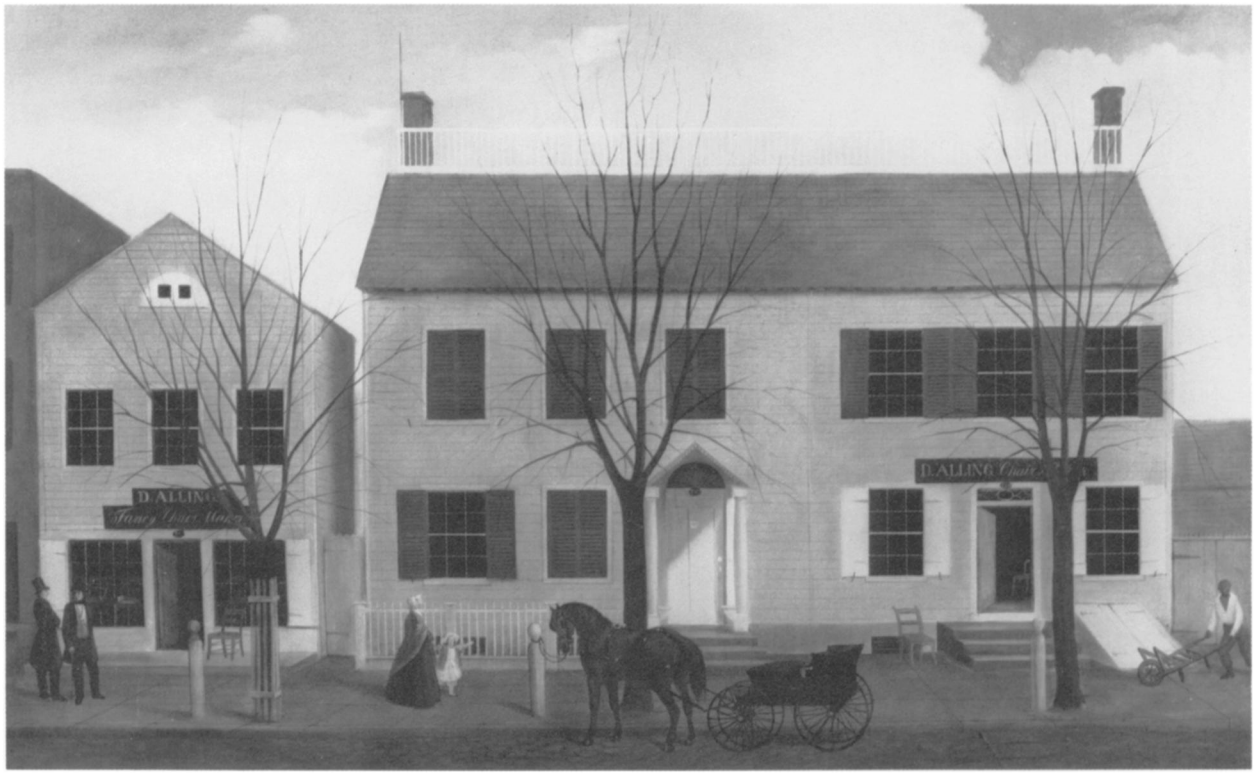

Fig. 1. Unknown artist, *The House and Shop of David Alling*, Newark, N.J., ca. 1840–50. Oil on canvas; H. 20½″; W. 30″. (Newark Museum.)

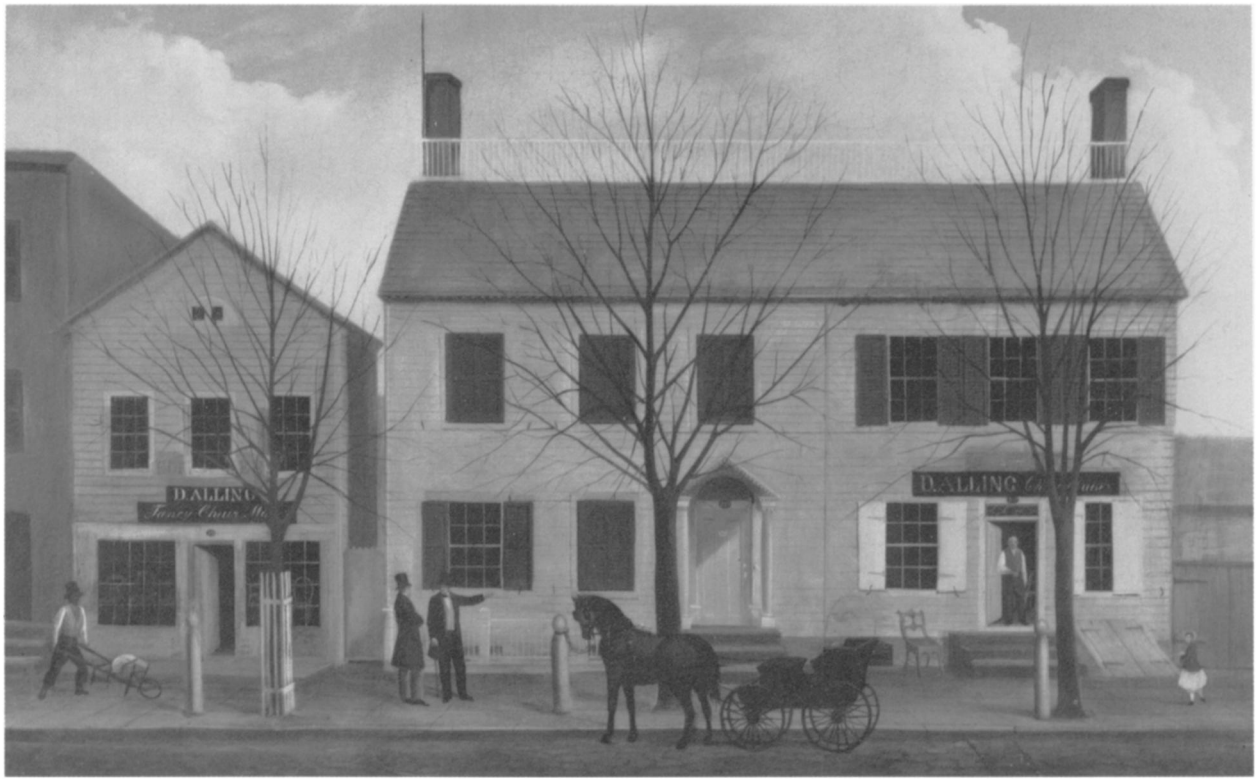

Fig. 2. Unknown artist, *The House and Shop of David Alling*, Newark, N.J., ca. 1840–50. Oil on canvas; H. 18¼″; W. 26½″. (New Jersey Historical Society.)

Based on such records, this case study will shed considerable light on dramatic changes in the production and marketing of manufactured goods, as well as on the society that produced them. Special emphasis will be placed on the role that geography and expanding markets played in the transformation of industry and labor in an emerging industrial city.[3]

Early Career

David Alling was born September 17, 1773, the son of Isaac Alling (1749–1819) and Mary Clisbie (or Clizbie) Alling (fig. 3). The Alling family, which moved from New Haven to Newark in 1698, was of Welsh ancestry and Presbyterian faith. David Alling is said to have learned chairmaking from his father and established his own shop by the early 1790s. Relying directly or indirectly on David Bruen's highly imaginative recollections of early Newark, local histories have claimed that in the 1792–95 period Alling's house was occupied by no less a luminary than Charles-Maurice de Talleyrand-Périgord, then in self-imposed exile from the perils of the French Revolution. To be sure, Talleyrand lived in the United States from 1792 to 1796, but his biographers do not report that he lived anywhere but Philadelphia and New York, or that he traveled to Newark and dabbled in chairmaking. Moreover, it is by no means certain that Alling was living in Newark at the time and quite doubtful that he had established his manufactory shop at 345 Broad Street until another decade had passed.[4] It is surely more than coincidental that Alling's earliest surviving business records show him making fancy chairs in 1803. If he did not begin making chairs in Newark until a decade after mastering the elements of the chairmaker's craft from his father, it is quite likely that he also acquired skills and perhaps worked as a journeyman in New York around the time that fancy chairs, as

[3] The eleven volumes of Alling's business records include daybooks 1 (1826–36) and 2 (1836–54); ledger (1826–53); shipping register (1827–35); receipt books 1 (1803–24), 2 (1824–43), and 3 (1844–56); and record books 1 (accounts with Linus Condit and Enoch Hopping for 1806–9, shipping records for 1833, and miscellaneous financial records for 1836–39), 2 (accounts with Moses Lyon for 1815–17, shipping records for 1819–21, and estate records for 1855–57), 3 (estate records for 1855–57), and 4 (Alling's 1855 estate inventory and estate records for 1855–57) in the manuscript collections of the New Jersey Historical Society, MG 390 (hereafter cited as NJHS).

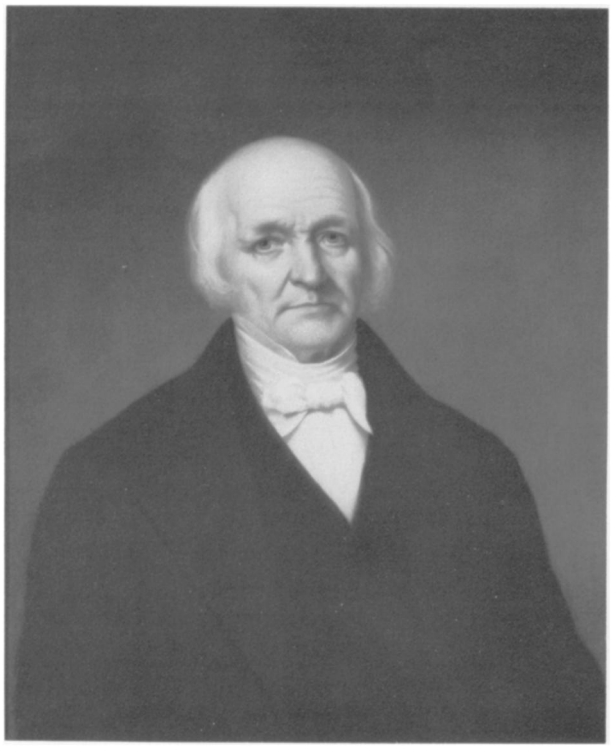

Fig. 3. Unknown artist, *David Alling*, ca. 1850. Oil on canvas; H. 30¼"; W. 25". (New Jersey Historical Society.)

[4] George P. Allen, *A History and Genealogical Record of the Alling-Allens* (New Haven, Conn., 1899), pp. 61, 63; William H. Shaw, *History of Essex and Hudson Counties, New Jersey*, vol. 1 (Philadelphia: Everts and Peck, 1889), p. 603; Margaret E. White, *Early Furniture Made in New Jersey* (Newark: Newark Museum, 1958), p. 40. Alling was married in 1803 to Nancy Ball, with whom he had three children (Mary Clizbie, Stephen B., and Isaac A.), and in 1817, after her death, to Eunice Roberts, with whom he also had three children (Joseph C., David W., and Horace). The Tallyrand tale is found in Daniel Bruen, "More Anon," *Newark Daily Advertiser* (October 27, 1863); Martha J. Lamb, "Newark," *Harper's New Monthly* 53 (October 1876): 671–72; Atkinson, *History of Newark*, p. 177; Shaw, *History of Essex and Hudson*, p. 622; Frank Urquardt, *A History of the City of Newark, New Jersey*, vol. 1 (New York: Lewis Historical Publishing Co., 1913), p. 430; *Historic Newark: A Collection of Facts and Traditions about the Most Interesting Sites, Streets and Buildings of That City* (Newark: Fidelity Trust Co., 1916), pp. 28–29; and Margaret E. White, *The Decorative Arts of Early New Jersey* (Princeton, N.J.: D. Van Nostrand Co., 1964), p. 119. For recent biographies of Talleyrand covering this period, see J. F. Bernard, *Talleyrand: A Biography* (New York: G. P. Putnam's Sons, 1973), pp. 148–66; and Jean Orieux, *Talleyrand: The Art of Survival*, trans. Patricia Wolf (New York: Alfred A. Knopf, 1974), pp. 121–35. The name David Alling appears in the 1794 ratables for Hanover Township, as the owner of an 84-acre farm. It is possible that this person was the future Newark chair manufacturer, whose brother Isaac, coincidentally, had received a farm in Hanover Township from their father in the 1790s. See Isaac Alling will, codicil, and inventory, no. 11157, Division of Archives and Records Management, New Jersey Department of State (hereafter cited as DARM). Alling's advertisement announced, "this manufactory has been conducted by its present proprietor nearly thirty years" (*American Advertising Directory for Manufacturers and Dealers in American Goods* [New York, 1832], p. 79).

will be discussed later, came into vogue there in the late 1790s.

Alling was born into a traditional economic world. For centuries local chairmakers and other craftsmen produced goods by hand for the retail market. They did not specialize in one craft to the exclusion of other economic activities. The traditional nature of the chairmaker's calling, into which Alling entered as a young man, is suggested by his father's only surviving business records. In accounts kept in Newark with Jotham Clark from 1803 to 1814 and with Luther Goble from 1805 to 1817, Isaac Alling seems to have been a fairly typical "colonial craftsman." During these years Clark's account was debited £119.5.8 for such diverse goods and services as a pint of varnish, gilding a picture frame, turning bedsteads, and painting blinds for windows. Similar items appear in Goble's £46.14.9 account, with the significant addition of 12 bamboo-style rush-bottom chairs in 1805, 11 other new chairs in later years, and 47 chairs mended, matted, and repainted. The considerable volume of nonchairmaking business in these two accounts was quite typical of the village chairmaker in New Jersey and beyond. The 1819 inventory of Isaac Alling's estate, appraised at $4,291.94, shows only $45.00 of wood and tools "in the Shop" behind his house at 288 High Street.[5]

Chairs for Wholesale Markets

In this traditional economic environment, David Alling established a shop to produce chairs in quantities unprecedented in Newark. Alling's earliest business records show him buying parts sufficient to produce chairs in quantities far exceeding local demand. He bought more than 30,000 chair parts of all sorts from supplier Linus Condit between 1801 and 1807, as well as 1,500 chair posts from Enoch Hopping from 1806 to 1808. With this quantity of parts, Alling had begun to sell chairs in batches. His first recorded sale was on July 12, 1803, when he received £97.12.0 for 170 chairs (possibly unfinished, or "in the wood") sold to William Palmer, a New York cabinetmaker who then specialized in "black and gold fancy chairs with cane and rush seats." Even clearer evidence that Alling's shop had expanded to a batch-manufacturing level comes in a detailed account of labor provided by the shop of a Newark chair ornamenter named Moses Lyon. Between April 1, 1815, and October 13, 1817, Lyon and his employees worked on thousands of chairs for Alling, "tipping" 2,053 chairs in the year 1816 alone.[6] Although modest by later factory standards, Alling's scale of production contrasted dramatically with that of his father and other traditional craftsmen who produced solely for the local market.

The great entrepôt of New York, located only 9 miles away by inland waterways from Newark, offered many models for this sort of enterprise. Thomas and William Ash, for example, had been operating a chair manufactory in New York as early as 1785, when in the *New York Packet* they thanked "the Gentlemen of this city and state and particularly . . . the Captains of Vessels, for the many favours they have received." The Ashes also noted that their firm had "now ready at the Ware-House, a great number of very neat Chairs and Settees, some of which is very elegant, being stuffed in the seat and brass nailed, a mode peculiar to themselves, and never before executed in America, and is equal to any mahogany, and comes much cheaper." In 1788 the Ashes were among the leaders of a parade of 60 Windsor and rush-seat-chair makers who participated in a "Federal Procession" in New York to honor the ratification of the United States Constitution. The chairmakers' approach to production and marketing was revealed in their banner, which depicted "a large manufactory shop, with a number of artisans at work; in front of the Shop a view of the river, several vessels bound to different parts, taking in chairs, boys carrying them to the wharves; in one corner, the American Union, in the other the Chair-maker's arms, a turning lath, and two windsor chairs properly emblazoned Motto: 'Free

[5] Alling ledger, pp. 1–6, NJHS. For a discussion of other trades pursued by local chairmakers in New Jersey, see William H. MacDonald, *Central New Jersey Chairmaking of the Nineteenth Century* (n.p., 1959), p. 8; White, *Early Furniture*, p. 1; and Harry B. Weiss and Grace M. Weiss, *Trades and Tradesmen of Colonial New Jersey* (Trenton: Past Times Press, 1965), p. 37. See also Carl Bridenbaugh, *The Colonial Craftsman* (Chicago: University of Chicago Press, 1966), p. 40. Isaac Alling inventory.

[6] Alling record book 1, NJHS; Ethel Hall Bjerkoe, *The Cabinetmakers of America* (Garden City, N.Y.: Doubleday, 1957), p. 166. Advertisements in the *New York Weekly Museum* in the late 1790s listed Palmer as an ornamental painter, japanner, and gilder. See Rita Susswein Gottesman, comp., *The Arts and Crafts in New York, 1777–1799: Advertisements and News Items from New York City Newspapers* (New York: New-York Historical Society, 1954), p. 140. Alling record book 2, NJHS. The term *tipping* probably meant gilding with a tip. On this technique, see N. Whittock et al., *The Complete Book of Trades* (London: John Bennett, 1837), pp. 117–18; and Rutherford J. Gettens and George L. Stout, *Painting Materials: A Short Encyclopaedia* (1942; reprint, New York: Dover Publications, 1966), p. 317.

Trade.' 'The federal states in union bound, O'er all the world our chairs are found.' "[7]

In 1788 clearly New York boasted easy maritime access to both domestic and foreign markets. The South and the West Indies had long offered trade opportunities for northern manufactures. By the second quarter of the eighteenth century, New England craftsmen were shipping chairs and furniture to these distant markets. In the 1750s New York cabinetmakers were shipping their products to the South. Philadelphia chairmakers were exporting to the West Indies as early as 1766; between 1783 and the 1790s thousands of Windsor chairs were shipped from Philadelphia to the South and to the West Indies. Southern demand for chairs and other northern manufactures increased at the end of the eighteenth century, as the South's cotton economy grew to meet the needs of the British textile industry. In the early years of the nineteenth century the characteristic trade routes of the "cotton triangle" were established, chiefly between the southern ports of Charleston, Savannah, Mobile, and New Orleans; the European ports of Liverpool and Le Havre; and New York, which sent ever-larger cargoes of northern manufactures to southern merchants, until the cotton triangle was destroyed by the coming of the Civil War. New York grew to be one of the nation's busiest ports and a major conduit for goods produced in both the city and its environs.[8] Through New York's incomparable port facilities, Newark thrived on trade with the South and, particularly by reshipment through New Orleans, the expanding western frontier.

Newark always had the potential to be a commercial and manufacturing center because of its proximity to New York. While colonial Newark was never designated a port of entry, small sailing vessels routinely plied the waterways that separated it from New York. By the end of the eighteenth century, Newark grew to be one of the principal towns from which the agricultural bounty of the New Jersey hinterland was shipped to New York, for either local consumption or reshipment. As a market town, Newark served as the daily meeting place for New York merchants and Passaic River valley farmers. Wagonloads of agricultural produce were transferred to small, shallow-draft schooners ("periaugers" or "pettiaugers") for the short trip to New York.

In the early nineteenth century, however, the economic life of Newark outgrew its role as a market center for agricultural commodities. As the latter role shifted to Jersey City, industrial growth took its place in the Newark economy and had its own transportation requirements. In 1818 John H. Stephens and two other Newark merchants established a shipping line of sloops and schooners that regularly sailed between Newark and New York. The well-situated town on the Passaic was thus a commercial satellite of New York.[9] Through that great port's packet fleets, Newark's artisans (despite technological limitations) could manufacture goods for distant markets. A view of Newark of about 1845, for example, shows six sloops and schooners plying the calm waters of the Passaic River and Newark Bay on their way to New York, probably after loading cargo at the Commercial Dock, which was conveniently located to receive wagonloads of Newark manufactures for shipment (fig. 4).

In the early 1820s New York merchants advertised their wares in Newark's *Sentinel of Freedom* and declared that they would discount at customary prices all southern and other bank notes held by Newark manufacturers. The Newark press began to run frequent advertisements for various packet lines to the South. Meanwhile, New York newspapers regularly carried advertisements from ship captains seeking consignments of furniture and other articles for export to southern ports. By 1826 Newark had seven vessels sailing regularly to New York from its three docks, as well as a sloop

[7] Gottesman, *Arts and Crafts*, pp. 109–10. On Thomas and William Ash, see Bjerkoe, *Cabinetmakers*, pp. 30–31.

[8] Bridenbaugh, *Colonial Craftsman*, pp. 76–77; Michael K. Brown, "Duncan Phyfe" (M.A. thesis, University of Delaware, 1978), p. 24; Harrold E. Gillingham, "The Philadelphia Windsor Chair and Its Journeyings," *Pennsylvania Magazine of History and Biography* 55, no. 3 (1931): 301–32; Robert G. Albion, *The Rise of New York Port, 1815–1860* (New York: Charles Scribner's Sons, 1939), pp. 95–120, 398; Sean Wilentz, *Chants Democratic: New York and the Rise of the American Working Class, 1788–1850* (New York: Oxford University Press, 1984), pp. 24, 35, 111.

[9] Wheaton J. Lane, *From Indian Trail to Iron Horse: Travel and Transportation in New York, 1620–1860* (Princeton, N.J.: Princeton University Press, 1939), pp. 8, 50, 136–37; Albion, *Rise of New York*, pp. 124–25, 304; Atkinson, *History of Newark*, p. 154; Shaw, *History of Essex and Hudson*, pp. 188, 551; Urquardt, *History of Newark*, p. 511. "Every day," noted Moreau de St. Méry on May 24, 1794, "a stage sets out from Newark for New York, which is in every respect the metropolis of this section . . . although politically this section belongs to New Jersey. Such is the powerful influence of commerce" (*Moreau de St. Méry's American Journey, 1793–1798*, trans. and ed. Kenneth Roberts and Anna M. Roberts [Garden City, N.Y.: Doubleday, 1947], p. 114). Forty years later Thomas Gordon added, "the facilities for communication with New York, render the town a suburb of that great city" (Thomas F. Gordon, *A Gazetteer of the State of New Jersey* [Trenton: Daniel Fenton, 1834], p. 191).

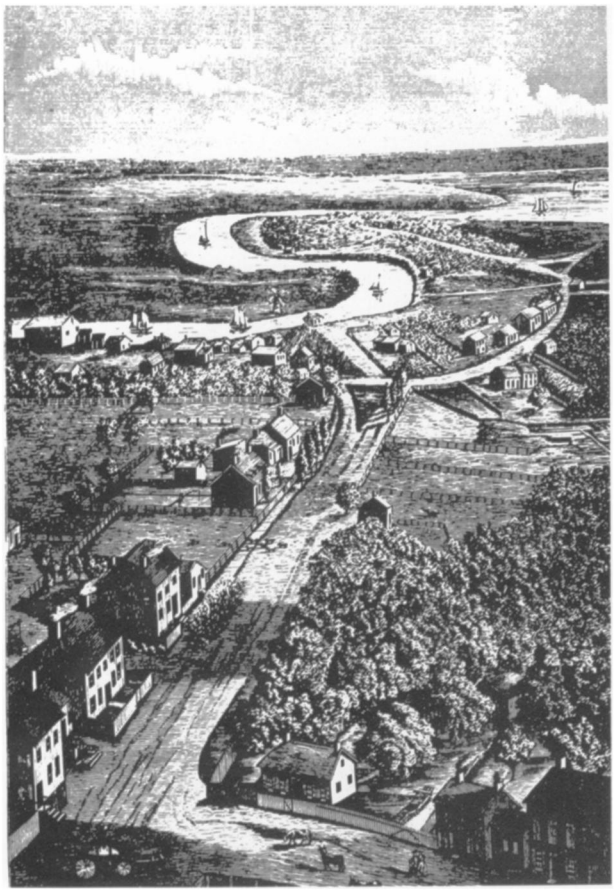

Fig. 4. *Newark East of Mulberry St. 1820–5*. Engraving, 1889, after a lithograph, ca. 1845. (New Jersey Historical Society.)

engaged directly in the southern trade. Eight years later Newark became a separate custom's district and an official port of entry, with annual domestic and foreign exports estimated to exceed $8 million.[10] The number of sailing vessels operating out of Newark grew to keep pace with the inland city's manufactures, but New York shipping interests continued to dominate its export trade. Around 1836 a New York packet was named *Newark* in recognition of the significant quantity of manufactures produced in the inland city. Canal and railroad transportation would spur Newark industrialization in the 1830–60 period, but only the Civil War would end its commercial reliance on New York and the cotton triangle.[11]

Southern Trade

The small-scale manufacture of goods for shipment to the South was arguably the cornerstone of the early industrialization of Newark and its crafts. Shoes and boots were manufactured there for the southern trade as early as 1790. Other products would follow from the workshops of Newark. "It is a manufacturing town of some importance," Henry Bradshaw Fearon said of Newark in 1817. Traveling some 5,000 miles around the United States in search of opportunities for British investment and immigration, Fearon noted, "carriages and chairs are made there on a very extensive scale, chiefly for the southern markets."[12] Already batch producing chairs for shipment and export, Alling was likely one of the manufacturers Fearon had in mind. Fortunately Alling's business records document his extensive southern trade in chairs from 1819 to 1835 and shed light on this growing market and its role in the industrialization of Newark's crafts.

On March 13, 1819, Alling shipped his first documented southern cargo: 144 ornamented fancy chairs aboard the *Hamlet* to New Orleans merchant Nathan Bolles, of the firm of Southworth and Bolles, "to sell on accompt of David Alling on Commission and to be account for." Included were chairs varying in price from a high of $50.00 per dozen (rosewood colored, gilded, and bronzed) to a low of $27.00 per dozen (yellow colored, plain spindles). The chairs were shipped for sale at the manufacturer's risk, most likely by auction in New Orleans. Whether they realized their estimated sales price of $404.00, Bolles as commission merchant was obliged to account formally to

[10] Raymond M. Ralph, "From Village to Industrial City: The Urbanization of Newark, New Jersey, 1830–1860" (Ph.D. diss., New York University, 1978), pp. 17–20; Brown, "Duncan Phyfe," p. 24; *The First Jubilee of American Independence and Tribute of Gratitude to the Illustrious Adams and Jefferson* (Newark: M. Lyon, 1826), p. 36; Forest R. Holdcamper, "Preliminary Inventory of the Records of the Bureau of Customs" (Typescript, National Archives and Records Service, 1968), pp. 105–6. Since 1789 Newark had been a port of delivery in the customs district of Perth Amboy. Pierson, *Directory* (1835), pp. 23–24.

[11] In 1836 Goble remarked: "The commerce of Newark is principally confined to coastal trade . . . the different manufactured items are mostly sent to New-York in wagons, and shipped from thence" (Goble, "Newark," pp. 475–79). Albion, *Rise of New York*, p. 117; James O. Drummond, "Transportation and the Shaping of the Physical Environment in an Urban Place: Newark, 1820–1900" (Ph.D. diss., New York University, 1979), pp. 36–81.

[12] Atkinson, *History of Newark*, pp. 147–50. Two recent British immigrants were the source of Fearon's information: "B——— (a coach-maker), who sailed in the Ann to Boston, and M——— (a chair and fancy japanner), who came in the Criterion, have got work at Newark, a town in Jersey, ten miles from the city of New York. I have been to them several times, and through their means am possessed of some information relating to mechanics and manufactures" (Henry Bradshaw Fearon, *Sketches of America* [2d ed.; London, 1818], pp. 74–75).

Alling for the proceeds of sales. In these early years payment came slowly. More than two years passed before Alling received a full accounting and payment for this consignment of chairs. Bolles's sixty-day note, dated October 11, 1821, represented full payment for 126 of the 144 chairs shipped on March 13, 1819, as well as partial payment for 488 chairs, valued at $1,460.00 in total and shipped to Bolles in 1819 and 1820. The account accompanying payment shows that Bolles sold 78 of the 126 chairs in Natchez and 24 in New Orleans, leaving 18 for sale at auction in Natchez. While Bolles sold the 126 chairs at $345.00 (98 percent of the sum they were expected to realize), he deducted a staggering $139.30 (40 percent of the prices realized) for freight, insurance, and labor, as well as $17.25 (5 percent of the prices realized) for the sales commission.[13] High charges (much higher than they would be in the 1826–35 period) and slow payment made the southern trade less than lucrative at this early date.

Virtually complete sales and shipping records for the 1826–35 period show Alling sending to the South and to Latin America as many as three-fourths of the chairs produced in his manufactory. During these ten years he shipped more than 17,000 chairs to southern ports (see Appendix). New Orleans, Natchez, and Mobile were the final destinations of almost two-thirds of the 148 shipments of chairs recorded in this period. Alling also had chairs delivered to other southern ports in Virginia (Norfolk and Petersburg), Georgia (Augusta, Columbus, Macon, and Savannah), North Carolina (Edenton and Wilmington), and Alabama (Montgomery). In 1830 Alling began exporting chairs to two Latin American ports (Buenos Aires, Argentina, and La Guaira, Venezuela), but the 10 shipments to these two ports were a minor part of Alling's trade. Alling infrequently bothered to indicate where the ships, brigs, schooners, and other sailing vessels loaded their cargoes of chairs. But when he did so, it was almost always the port of New York. The first record of Alling shipping to the South directly through the port of Newark was on August 26, 1835, aboard the brig *Juno*. Given the convenience of New York packet fleets and commercial services, this situation is not surprising.[14]

Alling generally received orders in writing from the southern merchants, who perhaps had previously examined his wares in either New York or Newark. Latin American orders came through commercial representatives in New York. Orders were filled out of existing inventory or were batch produced by Alling. A month or more usually passed before a typical order (about 120 chairs) was packed, either in bundles for domestic shipment or in crates for foreign export. On December 7, 1832, for instance, Alling consigned 162 chairs aboard the ship *Warsaw* to Mississippi merchant Robert Stewart, "pursuant to order by letter dated Natchez, 9th Nov. 1832." The *Warsaw* actually docked at New Orleans, where A. Fisk Watt and Company transshipped the cargo by steamboat up the Mississippi River to Natchez.[15]

Most of the twenty-nine merchants through whom Alling sold his chairs were regular and trusted customers. Shipments were repeatedly consigned to the same commission merchants for sale or auction at the manufacturer's risk. Alling stipulated either that chairs be sold at prices sufficient to cover expenses and net him a particular return or that they be sold "to net the prices annexed to each," with no mention of freight or expenses. However phrased, the latter costs would have been included in the sales price of the chairs rather than being borne directly by the manufacturer. Freight charges varied widely from $.20 to $.50 for each bundle of chairs, depending on its size, or an average of about 9 percent of the prices realized. Alling usually billed Latin American merchants for the shipping crates. On shipments overseas as well as to Natchez, Alling secured marine insurance, usually at the rate of 2 percent of the cargo's value, plus the cost of the printed form. In the 1826–35 period, the southern merchants customarily sold the chairs, paid expenses, took a 5 percent commission, and finally paid Alling (either in cash or in bank drafts) the net prices he expected to realize. Although payment was slow, almost every account in Alling's shipping register was settled without returns or dispute. Freight and other expenses were not as onerous in this period as they had been in 1819.

Alling's shipping records after 1835 have not survived, although he remained active in the

[13] Alling record book 2, NJHS.

[14] While this practice is not documented in the Alling shipping register, it seems to have been customary at the time. In the 1820–40 period, southern merchants frequently journeyed to Philadelphia, for example, and consigned chairs and other furniture to themselves for shipment to their home ports. See Kathleen M. Catalano, "Cabinetmaking in Philadelphia, 1820–1840: Transition from Craft to Industry," in *American Furniture and Its Makers: Winterthur Portfolio 13*, ed. Ian M. G. Quimby (Chicago: University of Chicago Press, 1979), p. 86.

[15] Occasionally orders included items other than chairs, particularly copal varnish and cushions.

southern trade. The 1850 Census of Manufactures recorded his annual product as "2,500 Fancy and Plain Chairs" at a time when he was selling just over 600 chairs per year locally and regionally (see Appendix). The difference of 1,893 chairs most likely represents production for consignment to southern merchants. In addition to direct sales, there is ample evidence that Alling supplied chairs to other Newark manufacturers and dealers who were engaged in the southern trade. During the 1830s Alling sold 257 chairs, worth $565.75, to the firm of Lemuel M. and Daniel B. Crane; 139 of those chairs, worth $361.00, were to be shipped by this firm to buyers in Alabama (Benton, Graves Ending, and Montgomery), Georgia (Macon), Mississippi (Warrenton and Woodville), and South Carolina (Edgefield Courthouse). Historically the southern demand for Newark-made chairs and furniture continued until the outbreak of the Civil War; the threat of conflict and five years of war resulted in the destruction of Newark's traditional reliance on the southern trade.[16] This market would never return, except in the most marginal way.

Local and Regional Trade

The four principal components of Alling's local and regional trade were shop work, or retail sales of ready-made chairs in his warerooms; custom-made work, or small-scale sales of higher quality chairs on special orders, in the tradition of colonial craftsmen; industrial and commercial work, or sales (often in quantity) of a variety of specialized seating furniture, not for use in residential homes; and wholesale work, or bulk sales of chairs to local retailers.

Alling always produced for the retail market, as his *Sentinel of Freedom* advertisements in 1808 and 1809 suggest: "DAVID ALLING, nearly opposite Roff's Tavern, Returns his sincere thanks to the public in general for his past favors he has received, and hopes he will continue to meet with encouragement by attention in his line of business. He wishes to inform them, that he has on hand a good and general assortment of CHAIRS, Cane and Rush bottom Fancy, Windsor and all kinds of d[itt]o Sofas and Rush d[itt]o On reasonable terms." Alling continued to advertise locally in the *Newark Daily Advertiser*, in 1830 and 1852, and in the Newark city directories from 1837 to his death in 1854, boasting warerooms stocked with "Rocking, Fancy, Cane Bottom and Common Sitting Chairs, made in a substantial manner and of the latest patterns."[17]

His retail trade extended throughout the rapidly growing city and its varied population. In the 1826–54 period, most of the customers listed in Alling's daybooks and general ledger were from Newark and vicinity. So unusual were retail customers from outside Newark that Alling would identify them by place. He sold to people in Essex County (Belleville, Bloomfield, South Orange, and Orange), Morris County (Chatham, Morristown, and Pine Brook), and Union County (Springfield, Rahway, and Union Township). Between 1835 and 1839 he had several retail customers in Brooklyn and New York. The most distant retail sales, probably completed in New York, were in 1841 to customers in Missouri and Michigan.[18] Alling's retail clientele was composed chiefly of Newark manufacturers, artisans, merchants, members of the professions, and others like the two respectably dressed men who pause in one of the two paintings of Alling's establishment in order to admire the chairs displayed in his warerooms at 349 Broad Street.

The local and regional market was not limited to home decorating. The growing number of factories, offices, churches, hotels, public buildings, and voluntary organizations also provided a ready market. In 1839, for example, he sold 12 "curled cane seat car settees" to Paterson Railroad Company. Four years later he furnished the grand-jury room in the city's new Essex County Courthouse with 24 plain armchairs. Factories in Newark and New York were the best of these customers in the 1830–54 period. In the 1830s he began selling stitching horses (a device used in making saddles

[16] The September 23, 1835, entry in the shipping register is marked "continued in New book page 1" (p. 118, NJHS). U.S. Census, 1850, Fifth Series: Productions of Industry, Census of Manufactures (microfilm, DARM); Alling ledger, pp. 54, 57, 59, 157, Alling daybooks 1, September 10, 1834–December 22, 1835, 2, September 18, 1838, NJHS. The Crane company had a warehouse in Mobile, Ala., in 1843 and within seven years was doing business there exclusively (White, *Early Furniture*, p. 51). On the destruction of Newark's reliance on southern markets, see Samuel H. Popper, "Newark, N.J., 1870–1910: Chapters in the Evolution of an American Metropolis" (Ph.D. diss., New York University, 1952), p. 22. William Ford noted that John Jelliff and Company and several other Newark manufacturers "fully supply the home market with the finer grades of furniture, and in addition they have an outside trade which extends to New York city and generally throughout New Jersey and even to Washington, Richmond and other cities farther South" (William F. Ford, *The Industrial Interests of Newark, N.J., Containing an Historical Sketch of the City* [New York: Van Arsdale, 1874], p. 180).

[17] *Sentinel of Freedom* (Newark) (November 8, 1808); White, *Early Furniture*, p. 40; Pierson, *Directory* (1837/38).

[18] Alling daybooks 1, 2, Alling ledger, pp. 102, 108, 130, 168, 92, 103, NJHS.

and harnesses) in several configurations and shop stools to other Newark manufacturers. In 1836, for example, he built more than 200 of them—over a tenth of items sold locally and regionally—for a dozen firms in Newark and New York, including Smith and Wright, his next-door neighbor at 343 Broad Street. Stitching horses were not elegant consumer items, but at $4.00 or so each, they were a stable and profitable local speciality during the last two decades of his career. From 1848 to 1851, Alling sold 133 shop stools to 2 india-rubber manufacturers in Newark. Oak office chairs were also a popular item in the 1840s and 1850s and were often ordered by the same manufacturers who bought stitching horses and shop stools.[19]

In addition, throughout these decades, Alling marketed chairs to local dealers for resale. In the 1830s Alling's wholesale work expanded significantly. Hundreds of chairs were purchased by Lemuel M. and Daniel B. Crane, often for shipment to the South. Another important local buyer of Alling's wholesale work was the Newark firm of Thomas L. Vantilburg and John Jelliff, which bought 41 chairs, worth $83.44, during the 1830s. In 1851 and 1852 Alling sold 174 chairs, worth $246.00, to the firm of Davis and Foster of nearby Bloomfield.[20] Even a cursory reading of Alling's business records shows a gradual division between chair production and retail sales. Specialization would eventually lead in time to craftsmen who produced and retailers who sold.

Additional revenues from retail customers appear as a vestige of the varied business activities of colonial craftsmen. The bulk of entries in Alling's daybooks and general ledger from 1826 to 1854 were for chair repairs and sales of other goods and services, although their dollar value was modest. Repairs included mending breaks and joints; touching up paint, varnish, and ornamentation; replacing cane and rush seats and cushions; putting rockers on chairs; and packing chairs for shipment. Alling sold some secondhand chairs in the 1840s and 1850s, leaving 223 such chairs, worth $99.13 in total, at the time of his death. He occasionally sold and probably also made other furniture, such as the two bedsteads, breakfast table, and marble-top table purchased by William M. Thorp of New York in 1837 and 1838.[21] Finally Alling and his workers painted furniture; ornamented window cornices; turned tool handles, vice screws, and pillars; made mallets, holster blocks, and clothespins; and dispensed small quantities of paint, turpentine, varnish, gold leaf, wood, flag (for making rush-bottom seats), and chair parts. Nonchairmaking business may appear important because of the large number of transactions, but it never accounted for more than a small portion of Alling's income. In 1835, for example, such business generated only about 5 percent of the more than $10,000 in total sales.

Production

Like other contemporary chair manufacturers, Alling specialized in the production of a variety of low- to middle-priced lathe-turned chairs, especially "common" rush-bottom, Windsor, and fancy chairs (figs. 5, 6). The manufacture of such chairs in America began in the eighteenth century and was stimulated (decades before the imposition of

Fig. 5. Side chair, attributed to David Alling, Newark, N.J., ca. 1825–35. Grained and stenciled wood, cane seat; H. 34½". (Newark Museum.)

[19] Alling ledger, p. 148, Alling daybooks 1, 2, NJHS.

[20] Alling ledger, p. 126, Alling daybook 2, NJHS.

[21] Alling record book 4, Alling ledger, p. 168, NJHS. The same was true of his southern trade. In 1834, for example, he shipped three sofas worth $205.00 in total to Robert Steward of Natchez (Alling shipping register, p. 100, NJHS).

Fig. 6. Child's side chair, attributed to David Alling, Newark, N.J., ca. 1835–40. Maple, cane seat; H. 23½". (Mrs. Sterett R. Prevost, Jr.)

protective tariffs in the early republic) by the declining importation of English chairs and furniture and the increasing local production of goods for a growing American population. Rush-bottom chairs originated in the seventeenth century as less expensive versions of fine seating furniture, such as chairs with caned, cushioned, or upholstered seats. From the second quarter of the eighteenth century, at least, urban and rural craftsmen were making rush-bottom, turned chairs such as the "crookt foot" and common slat-back chairs of the Delaware River valley and the York chairs of the Hudson River valley.[22] At about the same time, the Windsor chair was introduced to America. It was manufactured in Philadelphia at least by mid-century and in New York by 1774, spreading universally from those cities. Although always painted, Windsor chairs came to be ornamented only around 1800, under the influence of the Sheraton fancy chair, a style known in New York as early as 1797. The fancy chair was of plain design, with a rush or cane seat. While the front legs and connecting rung were attractively turned, the fancy chair succeeded because of its characteristic ornamentation rather than its lathework.[23]

Long before the American furniture industry was transformed by steam-powered woodworking machinery, such relatively simple designs were easily adapted to the batch production of inexpensive chairs. Using locally available wood and other materials, chairs could be produced cheaply from standardized, lathe-turned parts held together by bored socket joints, rather than from sawed and carved parts held together by mortise-and-tenon joints. Finishing and ornamenting techniques masked the otherwise common appearance of chairs assembled, as will be discussed more fully, from batch-produced parts supplied by outside contractors and made of different types of domestic hardwoods. In framing, chairmakers customarily used green wood for the posts, which would shrink as they dried and tightly hold the other parts, made of seasoned wood, with little if any glue.[24] The wooden, rush, and cane seats of turned chairs, moreover, were less expensive to manufacture than the upholstered seats of high-style chairs. So Alling and his contemporaries specialized in manufacturing the only chairs that could be produced in quantities despite the limited technology then available, while a rapidly expanding population and improved transportation networks allowed them to dispose of their products.

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[22] Bridenbaugh, *Colonial Craftsman*, p. 76; Patricia E. Kane, *Three Hundred Years of American Seating Furniture: Chairs and Beds from the Mabel Brady Garvan and Other Collections at Yale University* (Boston: New York Graphic Society, 1976), pp. 29–35; Benno M. Forman, "Delaware Valley 'Crookt Foot' and Slat-Back Chairs: The Fussell-Savery Connection," *Winterthur Portfolio* 15, no. 1 (Spring 1980): 41–64; Michael J. Ettema, "Technological Innovation and Design Economics in Furniture Manufacture," *Winterthur Portfolio* 16, nos. 2/3 (Summer/Autumn 1981): 199–200. Rush-bottom, turned chairs were produced in rural New Jersey well into the nineteenth century. See Deborah D. Waters, "Wares and Chairs: A Reappraisal of the Documents," in Quimby, *American Furniture*, pp. 161–73; and MacDonald, *Central New Jersey Chairmaking*, pp. 3–57.

[23] Wallace Nutting, *A Windsor Handbook* (Saugus, Mass.: By the author, 1917), p. 5; Zilla Rider Lea, ed., *The Ornamented Chair: Its Development in America, 1700–1890* (Rutland, Vt.: C. E. Tuttle Co., 1960), pp. 20, 36–40, 62–66; White, *Decorative Arts*, pp. 119–20; Ulysses G. Dietz, *Century of Revivals: Nineteenth-Century American Furniture from the Collections of the Newark Museum* (Newark: By the museum, 1980), p. 11.

[24] Robert F. Trent, "New London County Joined Chairs: Legacy of a Provincial Elite," *Connecticut Historical Society Bulletin* 50, no. 4 (Fall 1985): 31; MacDonald, *Central New Jersey Chairmaking*, p. 10; Sara C. Watson and Richard J. King, *American Craftsmen: The Ware Chairmakers* (n.p., 1971), p. 6.

Evidence of the changing patterns of production in Alling's manufactory may be gleaned from a comparison of sales statistics for his near and distant markets (see Appendix). His southern trade accounted for more of the increase than did local and regional sales. Significantly the 1826–35 period was one of rapidly rising cotton exports—in fact, 1836 boasted the highest exports of this staple before 1850.[25] From 1827 (the first year with complete records) to 1835 distant markets claimed a growing share of his output—from 56 to 68 percent of chairs produced; southern and Latin American sales increased by 546 percent in chairs sold and 327 percent in net sales, while local and regional sales, including both wholesale and retail businesses, increased by 330 percent in chairs sold and 363 percent in net sales. Although not expanding as rapidly as the southern and Latin American trade, the local and regional market accounted for a stable proportion of total sales—36 percent of total sales of $2,908.89 in 1827 and 38 percent of sales of $9,886.00 in 1835—because of a growing demand for customized chairs.

While Alling sold a wide variety of chairs to all markets, in the 1827–35 period he clearly tended to sell a rapidly growing number of more simply designed and ornamented chairs to the South and Latin America but an increasingly expensive mix of chairs in Newark and its environs. The average unit price of chairs shipped south decreased from $2.90 to $1.73, while that of new chairs sold locally and regionally increased from $1.99 to $2.20. Export chairs sold from 1819 to 1828 tended to be of more intricate design and ornamentation, which were accordingly more expensive—"large horn fret rosewood" and "ball bamboo roll top yellow bell seat" chairs at $3.25 each or "eagle fret rosewood gilt" and "Grecian curled maple" chairs at $4.00 each. By contrast, from 1829 to 1835 shipping records listed more chairs, of simpler design and ornamentation—"roll top rush seat narrow slats" and "fancy cane seat roll top gilt and bronzed" chairs at $1.50 each or "Windsor flat top or roll top" chairs at $10.00 per dozen.

This shift in production and sales was the result of changing markets, not aesthetic judgments. As ever-widening markets attracted attention from all centers of manufacture, small producers were forced to be more competitive. In order to compete with chair manufacturers from Boston to Baltimore, and in time from Cincinnati and Pittsburgh, Alling and his contemporaries shifted increasingly to the production of less expensive chairs. Meanwhile, the southern market was changed by the expansion of the American frontier; increasingly, western farmers shipped foodstuffs to New Orleans by inland waterways in return for manufactured goods imported from New York. An ever-expanding hinterland surely meant a growing rural market in the West for simpler furnishings than were in vogue in the cities. In order to speed production and meet demand, stenciling techniques for ornamented Windsor and fancy chairs generally began to decline in quality from the late 1820s and became relatively crude after 1835.[26] From descriptions of chairs in his shipping register it is clear that Alling gradually eliminated much of the expensive ornamentation (gilding, stenciling, fretting, and bronzing) on chairs for shipment, in order to produce chairs with a work force of limited skills and lower wages.

At the same time, the retail market expanded along with Newark's burgeoning population. In the 1830s Alling's output for this market began to shift perceptibly from the ornamented Windsor and fancy chair to a mix of plain chairs, industrial and office seating furniture, and customized items. While he might sell inexpensive inventory items (a stool, a child's chair, or a plain Windsor for $.75 each or painted, unornamented, rush-bottom common chairs for $1.00 each), until 1836 a growing demand for more expensive products (a stitching horse for $4.00, an upholstered rocking chair for $9.75, a writing chair with cushions and locking drawers for $14.00, or a curled-maple, cane-seat Grecian settee for $22.00) resulted in a rising average unit price for local and regional sales.[27] If there was a larger market in the South and Latin America, the local and regional trade was more

[25] Thomas C. Cochran, *Frontiers of Change: Early Industrialism in America* (New York: Oxford University Press, 1981), p. 84.

[26] Catalano, "Cabinetmaking," p. 88; Albion, *Rise of New York*, pp. 104–5, 117–20. There was also a growing rural demand in the Northeast for domestic urban manufactures as a result of increased population through migration and improved transportation that linked cities and their hinterlands. See Diane Lindstrom, *Economic Development in the Philadelphia Region, 1810–1850* (New York: Columbia University Press, 1978), pp. 9ff. Lea, *Ornamented Chair*, pp. 85–86.

[27] Similarly, the Philadelphia wareroom established and operated by the Society of Journeymen Cabinetmakers from 1834 to 1837 sold relatively expensive products to local customers; 28 chairs for sale in 1836 ranged in price from $7.00 to $11.66. See Catalano, "Cabinetmaking," pp. 88–90. Rising unit prices cannot be attributed to inflation; actually, in the first half of the nineteenth century, wholesale prices tended to decrease, despite fluctuations. See Arthur H. Cole, "Wholesale Prices in the United States, 1825–45," *Review of Economic Statistics* 8 (1926): 69–84; *Historical Statistics of the United States: Colonial Times to 1970*, pt. 1 (Washington, D.C.: Government Printing Office, 1976), p. 209 table E123-134.

predictable, stabler, and by its very nature more profitable.

The chair output from Alling's manufactory reached its high point in 1835, judging from his extant sales records. In that year Alling registered total sales of 5,246 chairs. Surely his modest-size manufactory was reaching the limit of its productive capacity. Between 1833 and 1836, perhaps to expand work space, Alling and another Newark chairmaker, John Hall, had extensive construction work done on a brick house they owned jointly on Market Street. But national economic developments put a temporary end to Newark's business boom and the need to increase industrial production. The panic of 1837 brought economic devastation to the nation. By autumn of that year some 90 percent of factories in the Northeast were said to be closed, and economic conditions showed little improvement until 1844.[28] Newark was hard hit by the panic.

Amid unprecedented business failure and unemployment, the city's population decreased by a fourth in a year—from 21,079 in 1837 to 16,128 in 1838—and did not recover until 1844. As the economic crisis cut Alling's sales dramatically—from 1,806 chairs sold locally and regionally in 1836 to 956 the next year—partnership emerged as a mechanism for survival. His manufactory and warerooms were advertised in 1837 as the firm of Hall and Alling. Hall remained in business with Alling until 1844, their partnership barely weathering the seven-year economic storm. Although sales volume declined precipitously, they continued to sell custom items to those whose prosperity was not immediately affected by the panic of 1837. The average unit price of chairs remained over $2.00 because of the custom orders. Chairs made for this market began to be made of finer varieties of wood, such as black walnut and mahogany, despite the hard times. Alling remained in business alone from 1845 to 1854, but production and sales never rivaled prepanic levels. Inexpensive chairs and factory stools became his principal products, and the average unit price of items sold in Newark and its environs was $1.76 (or a total of $5,761.00 for 3,270 chairs and other items sold over ten years).[29] The average unit price declined, perhaps, as he began to produce more to meet the needs of a growing population of urban factory laborers and backcountry farmers, whose ability to buy manufactured goods grew along with the state's economy. While Alling's shipping records do not survive after 1835, between that year and 1850 (assuming, as previously discussed, that the difference between total chairs manufactured and those sold in Newark and vicinity in 1850 were shipped to the South and possibly also to Latin America) there was a 278 percent drop in local and regional sales but only a 53 percent drop in shipments to the South and Latin America. If this assumption is correct, the distant markets proved stabler than the local and regional ones toward the end of Alling's career, or perhaps the latter markets became more competitive.

Labor

On July 4, 1821, a patriotic parade of forty horse-drawn floats traversed Newark, confidently proclaiming the city's economic vitality to all its inhabitants. "David Alling's fancy chair establishment" was "represented by two dozen ready made chairs, and workmen making rush bottom and Windsor chairs, together with painting and ornamenting." How large was the manufactory shop that this float represented? In 1826 city assessor Isaac Nichols counted 79 chairmakers, including manufacturers, independent masters, journeymen, and apprentices. Six years later Thomas F. Gordon recorded 29 chairmakers, probably including proprietors and journeymen, but not all employees.[30]

[28] The year 1835 was characterized as the most prosperous one in American history by Harriet Martineau, *Society in America*, vol. 2 (New York, 1837), pp. 270, 274. Alling receipt book 2, December 24, 1833–May 28, 1836, NJHS; Samuel Rezneck, "The Social History of an American Depression, 1837–1843," *American Historical Review* 40, no. 4 (July 1935): 662, 665.

[29] Atkinson, *History of Newark*, pp. 193, 233; Pierson, *Directory* (1837/38); White, *Early Furniture*, p. 58. In the 1845/46 city directory Hall is listed as being in business with John R. Tillou, and in the 1847/48 directory Hall appears as an independent chair manufacturer. While Alling manufactured the most popular varieties of ornamented Windsor and fancy chairs in a business life spanning six decades, in the 1840s and 1850s such chairs became unusual. Significantly no such chairs appear in the 1855 inventory of his estate.

[30] *Sentinel of Freedom* (July 5, 1821). The city hosted other industrial parades of this sort, not very subtly underscoring the connection between local enterprise and national prosperity. On July 4, 1788, an unspecified number of chairmakers had marched in a grand procession in Newark (*New Jersey Journal and Political Intelligencer* [Elizabeth] [July 9, 1788]), and thirty years later chairmakers participated in another parade, with "a number of hands busily engaged in turning stuff, bottoming chairs and painting" (*Sentinel of Freedom* [July 7, 1818]). In neither case is Alling mentioned. On July 4, 1826, the chairmakers of Newark marched in a parade celebrating the fiftieth anniversary of American independence, "Bearing a neat stan-

More revealing figures come near the time Newark became an incorporated city in 1836. An 1835 canvass enumerated 4 chair and 3 trunk manufactories. Goble's private 1836 census of Newark manufactures recorded a total of 106 people employed in the production of chairs and trunks, valued in total at $90,000 per year. Col. James Miller's official city census, taken between June and August 1836, counted 27 makers of fancy chairs and 35 trunkmakers. On the basis of Newark industrial statistics for 1835–36, Goble's 106 figure might break down as 7 chair and trunk manufacturers and 55 self-employed makers, with 44 employees in total. That would mean that an average chair or trunk manufacturer had 5 or 6 employees. But hard figures come only in 1845, when the official city census reported 3 chair manufactories with a total of 24 employees, or an average of 8 each.[31] By any standard, chair and other woodworking manufactories were among the smallest in Newark.

Although Alling left no personnel records, the 1855 inventory of his estate suggests the magnitude of his work force and operations at their prime in the 1830s. Found in various places on his property were sixteen work stations, including a writing desk (where Alling no doubt kept his records), a bench with a wooden vise, and two other benches in the front shop (directly behind Alling in one of the paintings of his manufactory); three other benches with wooden vises and a long bench "where the lathe stands," possibly in the front shop; four framing benches (for assembling chairs from premade parts) and a bench with a wooden vise in the back shop, which was upstairs at 345 Broad Street; a bench in the paint shop and two tables in the "ornament room," both probably in the cellar; and a framing bench in the shed and a bench in the barn, in both of which outbuildings wood was stored and cut. While not all the sixteen work stations listed in the estate inventory would have been in use at any one time, their number does imply the size of his work force. In addition, Alling would have needed other employees, such as the black man with the wheelbarrow depicted in the paintings of Alling's house and shop. Most important, work was compartmentalized—there were different areas for cutting, turning, framing, painting, and ornamenting—although his employees may have worked at different tasks serially. In 1850, when Alling's manufactory was producing less than half the number of chairs produced fifteen years earlier, the census recorded 8 male employees in his shop.[32]

The bulk of Alling's employees were journeymen. Like other artisans, they had first been compensated at an agreed piece rate, assigned in local price books. Inspired by British prototypes, the price books' very existence suggests that journeyman chairmakers and cabinetmakers were seeking a stable, uniform system of compensation at a time of expanding production and price competition. Where there are no extant Newark price books for chairmakers and cabinetmakers, as there are for New York and Philadelphia, there is every reason to believe that journeymen in these trades were paid at a piece rate. This system of compensation was used by Alling from 1815 to 1817 for Moses Lyon, a Newark artisan who, with his own employees, ornamented chairs for him as an outside contractor. Lyon might receive piece rates of anything from 10*s*., or $1.25, for bronzing (ornamenting freehand) a "Wide Top Scroll Back Cornucopia fancy chair"—perhaps like the chairs in figures 4 and 5—to 8*d*., or $.08, for striping (painting the turnings of legs and posts) a slat-back sewing chair.[33]

dard representing the trade. Motto, 'Rest to the weary' " (*First Jubilee*, p. 8). Significantly the motto of New York chairmakers in 1825 was Rest for the Weary, which emphasizes "both pride in craftsmanship and a collective sense of public service" (Wilentz, *Chants Democratic*, p. 91). *First Jubilee*, p. 34; Gordon, *Gazetteer of New Jersey*, p. 190.

[31] Shaw, *History of Essex and Hudson*, p. 561. Four Newark chair manufacturers (Alling, S. B. Brown and Son, John J. Camp, and John Lee and Co.) were listed in *The American Advertising Directory* for 1832; 2 chair manufacturers (Alling and Samuel B. Brown, Jr.) and 11 chairmakers (including Hall) are listed in Pierson, *Directory* (1835/36). Goble, "Newark," pp. 475–79; Atkinson, *History of Newark*, p. 188; *Newark Daily Advertiser* (September 15, 1836); "Late Official Census of Newark," *Journal of the American Institute* 2, no. 8 (May 1837): 417–19; *Newark Daily Advertiser* (January 6, 1846). The 8 employees per chair manufactory may be compared with 8.1 per cabinetware manufactory, 14 per sash-and-blind manufactory, and 7.3 per trunk manufactory. The 3 chair manufacturers may be identified from the Newark city directory for 1845 as Alling, Abraham S. Fuller, and John Lee.

[32] Alling record book 4, NJHS. According to Alling's estate inventory, materials and finished goods were also stored in the garret of the house and in the "wood house." Most of the chairs listed in the inventory without location would have been stored in the warerooms at 349 Broad St. 1850 Census of Manufactures.

[33] The earliest known American price book to be published was issued in Hartford, Conn., in 1792, although earlier manuscript versions are known. Among other price books issued for these crafts are editions published in Philadelphia in 1794 and 1828 and in New York in 1796, 1810, and 1817. See Martin E. Weil, "A Cabinetmaker's Price Book," in Quimby, *American Furniture*, pp. 175–79; Catalano, "Cabinetmaking," p. 88; and

Generally, the very existence of a piece-rate system implied that task differentiation was beginning to alter the traditional economic world of urban artisans, in which a journeyman mastered every skill known to his trade and could fashion products in their entirety. Task differentiation, known to some degree since the seventeenth century, began to increase for a variety of reasons. Journeymen who excelled in the more demanding and better-paid skills such as gilding or carving would seek to practice them to the exclusion of lesser skills such as sawing or painting. A natural division of the workplace also contributed to task differentiation. Chair stretchers were turned on a lathe, and backs sawed at a bench; chairs had to be finished in isolation from the rest of the shop so that the oil-base paint or varnish could dry without being ruined by flying wood chips and sawdust. Of course there is no direct evidence of the specific division of tasks in Alling's shop.

In the expanding American economy of the first half of the nineteenth century, tasks and workplace became permanently differentiated. For employers, economies of scale could only be achieved if journeymen could set up production of a particular part and then produce a batch of virtually identical parts, to be assembled with other standardized parts made by other workers. A journeyman whose skills were increasingly limited to repeating simple tasks would in time be no more than an unskilled or semiskilled laborer who would find it difficult to penetrate the ranks of masters or employers.[34]

The documented decrease in the average sale price of chairs shipped to distant markets from 1819 to 1835 and of chairs sold locally and regionally after the panic of 1837 was symptomatic of the declining economic fortunes of Newark journeymen. Although there is no evidence of labor organizing and strikes among hard-pressed chairmakers and cabinetmakers in Newark, as there is for New York and Philadelphia, it is certain that they were becoming no more than semiskilled wage earners. Typical perhaps was one of Alling's few identifiable employees, Elias C. Robertson (1819–95), a young, native-born journeyman. In 1840 and 1841 he is mentioned in Alling's ledger as having received woodworking tools in partial compensation for his labor. Like traditional journeymen, he owned some tools, but in those economically troubled years he had difficulty affording them. His work address was listed in the 1842/43 and 1843/44 city directories as 349 Broad Street (Alling's warerooms). In the 1840s and 1850s he moved every two or three years, worked nearby at a succession of jobs in chairmaking and later varnish manufacturing, married a local woman and had four children in eight years, and accumulated relatively little property or wealth.[35] Robertson's wages could afford his family only a meager existence, for journeyman chairmakers were not well paid. The only chair manufacturer listed in the 1850 census, Alling paid his 8 employees average wages of $24.00 per month. At the same time, the average monthly wages of 117 employees of 9 cabinetware manufacturers (all unmechanized) was $26.68. Judging from Alling's example, the average monthly wage of journeyman chairmakers was similar to male shoemakers ($22.10), trunkmakers ($21.17), and hatters ($24.73) in Newark's most mechanized industries and was far less than carpenters ($31.20).[36] Robertson was little more prosperous than a dollar-a-day laborer. A half century of change in the production and marketing of chairs and other seating furniture spelled an end to an ancient craft decades before the process of mechanization was complete.

Wilentz, *Chants Democratic*, p. 29. For an example of a British prototype, see *The London Chair-Makers' and Carvers' Book of Prices for Workmanship as Regulated and Agreed to by a Committee of Master Chair-Manufacturers and Journeymen* (London, 1802), with supplements published in 1808 and 1811. Alling record book 2, NJHS. Alling recorded rates in British currency but compensation in American money.

[34] Closely related to this was the decline of apprenticeship, discussed in Susan E. Hirsch, *Roots of the American Working Class: The Industrialization of Crafts in Newark, 1800–1860* (Philadelphia: University of Pennsylvania Press, 1978), pp. 8, 44–45. There is no evidence that David Alling had apprentices. In fact, on September 1, 1819, George Ryerss of Saddle River received $25.49 from Alling "as a full Compensation for Instructing Lewis Plum in the art of ornamenting and also for work done in full of all other demands whatever" (Alling receipt book 1, NJHS). Although Alling needed these skills enough to pay for them, he was not about to offer young Plum an apprenticeship.

[35] For Newark labor organizing and unrest, see Frank T. de Vyver, "The Organization of Labor in New Jersey before 1860" (Ph.D. diss., Princeton University, 1934). Journeymen cabinet- and chairmakers struck or protested wages in Philadelphia in 1796, 1825, and 1834, and in New York in 1802 and 1835. See Richard B. Morris, *Government and Labor in Early America* (New York: Columbia University Press, 1946), p. 203; Catalano, "Cabinetmaking," pp. 87–88; and Wilentz, *Chants Democratic*, pp. 41, 232. Alling ledger, pp. 146, 222, NJHS; Pierson, *Directory* (1835/36 to 1854/55); *Sentinel of Freedom* (May 17, 1842); U.S. Census of Population, 1850, Essex County, p. 284; inventory of Elias C. Robertson, 1895, no. 26118, DARM.

[36] 1850 Census of Manufactures. Hirsch, *Roots of the Working Class*, p. 31, table 9; see also the discussion of the adequacy of industrial wages in Newark, pp. 66–67.

Contracting

Outside contracting for parts and labor was one of the principal characteristics of American manufacturing during the first half of the nineteenth century. Alling and his contemporaries relied heavily on the division of manufacture between in-shop work and outside contracting, and this contributed to the economic decline of journeyman chairmakers. Arrangements of this sort were commonplace as early as the second quarter of the eighteenth century and perhaps known earlier. Solomon Fussell of Philadelphia, for instance, bought thousands of chair parts from other master craftsmen in the 1738–51 period for assembly in his shop. Philadelphia in the revolutionary era offers examples of independent artisans providing parts to other manufacturers. In order to expand or diversify his business or to secure the specialized skills of other masters, an entrepreneur could subcontract work rather than hiring journeymen. Younger chairmakers found the manufacture of chair parts a way to launch their careers without considerable capital investment. Famous chair manufacturer Lambert Hitchcock began his illustrious career in the 1818–25 period by making chair parts for shipment from the inland port of Hartford, down the Connecticut River, and on to southern ports.[37]

In 1839 Edward Hazen presented as an industry standard the division between urban manufactories that assembled and finished chairs and rural woodworking shops that supplied parts turned and sawed from local timber. As long as the parts were made by the outside contractor to the buyer's specifications, probably using his templates (or wooden patterns), and could fit more or less interchangeably with each other as well as with parts from other sources, this system offered quick "start-up" and economies of scale to the buyer. This division of manufacture allowed relatively economical specialized production of simple, standardized parts with less skilled labor than was required of master or even journeyman chairmakers. This system contributed to the decline of urban crafts. In New York, where the process of subdivision and subcontracting had begun before 1825, the city's principal trades turned by midcentury into something less than their proud old names continued to suggest.[38]

The regular purchase of chair parts throughout his long career allowed Alling to expand rapidly to meet market demand without having to increase the size of his payroll or plant any more than necessary. Chair parts from contract suppliers may have accounted for as much as 60 percent of the cost of producing a chair. In 1830, for example, Alling calculated the cost of producing 12 curled-maple chairs with rounded front and back posts: seats, tops, posts, and rungs came to $28.80; the labor of joining the parts, staining, and varnishing came to $19.00.[39]

His earliest suppliers were from rural Morris County. Linus Condit of Hanover Township supplied Alling with more than 30,000 chair parts between 1801 and 1807. A sawmill owner, Condit likely produced spindles and stretchers on a human-powered treadle lathe, and benders (or bent back posts) were steamed and bent in a frame. Alling paid Condit in cash, paint pigments, flag for making rush seats, oil, turpentine, and other supplies. Similarly, from 1806 to 1808 Enoch Hopping of Chatham supplied Alling with 1,500 sets of plain and "bamboo stuff" posts, which were, of course, turned on a lathe, and was paid in cash, flag, and other supplies.[40] Producing large numbers of standardized parts from raw materials available in nearby woodlots, with the use of both human and possibly nonhuman power sources (animal or waterpower), these two rural woodworkers could make chair parts more economically than could Alling himself.

Alling bought parts for specific types of chairs

[37] Forman, "Delaware Valley Chairs," pp. 41, 45; Charles S. Olton, *Artisans for Independence: Mechanics and the American Revolution* (Syracuse, N.Y.: Syracuse University Press, 1975), p. 9; Bjerkoe, *Cabinetmakers*, pp. 124–25; Lea, *Ornamented Chair*, p. 82; John T. Kenney, *The Hitchcock Chair: The Story of a Connecticut Yankee, L. Hitchcock of Hitchcocks-ville and an Account of the Restoration of His 19th-Century Manufactory* (New York: Clarkson N. Potter, 1971), pp. 53–54.

[38] "A great proportion of the chair-maker's stuff is brought to the proper form by means of the lathe; and this machine is used for this purpose in every practicable case: but this part of the work is not performed in the cities, since it is found to be less expensive and more convenient, to purchase the timber turned in the country. Slats for the back, bent to the proper shape, are also obtained from the same source" (Edward Hazen, *The Panorama of Professions and Trades; or, Everyman's Book* [Philadelphia, 1839], p. 227). Design meant "working out each individual part and creating patterns, jigs, or whatever instructions or aids were necessary to enable a craftsman, who might well never see the chair in its completed form, to make each of those parts so that the design would be realized in the actual chair or a set of identical chairs" (Forman, "Delaware Valley Chairs," p. 51). For illustrations of templates, see Charles F. Hummel, *With Hammer in Hand: The Dominy Craftsmen of East Hampton, New York* (Charlottesville: University Press of Virginia, 1968), pp. 96–99. Wilentz, *Chants Democratic*, p. 113.

[39] Alling daybook 1, note on front flyleaf, NJHS.

[40] Alling record book 1, NJHS.

as well as common parts like stretchers that could be used in a wide variety of chair designs. He often resold to other chairmakers parts bought in large quantities from contract suppliers. In 1830, for example, he purchased 135,000 chair parts and then resold 58,000 of them to other self-employed local craftsmen. No chair manufacturer, of course, could rely totally on contracted parts, especially for customized items. Alling's manufactory was capable of producing chair parts in volume, for it was equipped with the standard human-powered woodworking tools: wheel-operated lathe, with chucks and bands; augers, planes, and wedges; saws, drawing knives, and adzes; and hammers and mallets. Alling always maintained an inventory of chair parts, either purchased from outside suppliers or manufactured in his shop, as well as wood and other materials. The 1855 inventory of his estate listed 94 lots of chair parts of every description, valued at $143.55, in addition to 20 lots of boards (maple, cherry, oak, hickory, and pine), 180 bundles of flag, and 2 lots of fine veneers.[41]

As the production of chair seats became a manufacturing specialization in the 1830s and 1840s, Alling began to subcontract this sort of work, mostly to a half dozen New York suppliers. Adam Stumpf was the principal supplier between 1834 and 1849. On April 27, 1836, for example, Stumpf caned 132 seats "had of Mr. Goodwin" for $46.75. In 1841 Alling paid Stumpf $113.66 in cash for 8 loads of caned chair and settee seats. Other New York suppliers in the 1829–42 period included William M. Thorp, Smith Ely, Richard Tweed, Hezekiah W. Bonnel, and George Nutman. Meanwhile, Alling had New Jersey suppliers, such as Richard G. Wood of Newark, who made 72 chair seats in 1835, and Johnson Barber of Newark, a harnessmaker and trimmer, who made $275.63 worth of chair cushions in 1834 and 1835. These urban contractors were probably very much like the "debased artisans, garret-shop hands, or outworkers" who, according to Sean Wilentz, perfomed much of the labor for New York furniture manufacturers.[42]

When demand for his chairs was peaking in the 1830s, Alling occasionally bought both finished and unfinished chairs from other makers. Chairs were either sold outright or offered in payment for supplies. In 1830 Alling bought 144 fancy chairs "in the wood" for $102.00 from John Collins of Hackensack. John J. Camp and Abraham S. Fowler of Newark provided Alling with chairs in the years 1835–39 in return for wood. Alling also had several New York chairmakers.[43] All chairs would have been finished, if they had been purchased in the wood, and sold along with the products of Alling's shop, much as chair parts from different sources were mixed together. It is important to observe the intraregional flow of materials and services—chair parts from Morris, Passaic, and Bergen counties; seats from New York; and whole chairs from Newark and New York, among other places—for it underscores the economic interdependence of craftsmen in this period, the complexity of craft production, and Newark's relationship with both its rural New Jersey hinterland and industrial and commercial New York.

The most interesting evidence is provided by Alling's principal outside contractors, who were located in the highlands of northern New Jersey, with their ample wood resources and waterways. In 1818 he bought $18.00 of "fancy Chair Stuff" from Jacob Van Riper of the town of Saddle River. From 1822 to 1829 he was supplied with thousands of chair parts (or "stuff") by Ezekiel, Isaac C., and Alpheus C. Miller of the Passaic County town of Little Falls, situated about 10 miles north of Newark. From 1827 to 1852, Thomas R. Hill of Pompton Township, now in Bergen County, located about 25 miles north of Newark, regularly supplied turned chair parts to Alling. The most frequent supplier of turned chair parts was Gilbert M. Cooper of Saddle River, which was in

[41] Alling daybook 1, note on front flyleaf, Alling record book 4, NJHS. In all, the chair parts and materials in his shop at the time of his death were worth about $450, or a quarter of the value of movable property in the shop. Only "hand machinery," as the 1850 Census of Manufactures recorded, was used in Alling's manufactory, as was the case in other Newark chair- and cabinetmaking establishments.

[42] Goodwin was probably Thomas Goodwin, the New York chairmaker, who on July 31, 1835, had received $40.00 from David Alling for 72 "flush curl chair seats" (Alling receipt book 2, NJHS). For Stumpf's work, see Alling receipt book 2 and Alling ledger, p. 191, NJHS. Cane was imported from England through New York. Thorp supplied 420 chair and stool seats worth $248.00 between August 19, 1837, and September 14, 1838 (Alling ledger, p. 168, NJHS); Ely provided 1,224 cane, plain, box, and curled flush chair seats worth $400.50 and mentioned $175.65 for seats delivered to Alling in 1837 (Alling ledger, p. 172½, NJHS); up to September 6, 1835, Nutman supplied 255 seats (Alling daybook 1, NJHS); Tweed and Bonnel supplied 500 Windsor chair seats in 1832. Alling receipt book 2, September 17, 1835 (Wood), November 15, 1834, April 2, 1835 (Barber), NJHS. Wilentz, *Chants Democratic*, p. 113.

[43] Alling receipt book 2, September 18, October 16, 1830, Alling ledger, pp. 27, 147, 195, NJHS. Camp provided 50 chairs and Fowler 24 "grecian" chairs and a Windsor settee. James Walton supplied chairs on February 19 and September 23, 1836 (Alling receipt book 2, NJHS), and in 1839 Alling bought a total of 48 mahogany chairs from Jesse Ellis, Abial W. Swift, and Tweed and Bonnel (Alling record book 1, NJHS).

Pompton Township. Between 1828 and 1854 Cooper delivered countless wagonloads of parts to Alling's manufactory. In 1834, for instance, Cooper provided Alling with 3,760 parts, worth $269.19 in total, spread over 7 shipments. Cooper filled orders for turned parts that were either for specific types of chairs (such as back posts for Grecian-style curled-maple chairs) or for universal parts (such as stretchers, spindles, and posts) that might be used in a variety of chair types. Cooper was paid in cash, promissory notes, chairs, and chairmaking supplies.[44]

While many contract suppliers were poor urban workers laboring thanklessly in small outshops and garrets, Alling's major New Jersey suppliers of turned parts were reasonably prosperous local entrepreneurs. Both Thomas R. Hill and Gilbert M. Cooper are listed in the census as proprietors of waterpowered wood-turning establishments. Hill had 6 employees, with average monthly wages of $20.83; Cooper employed 4, with average wages of $24.50. In a year the two produced $5,000 of "turned stuff" out of $800 worth of logs. It is not known how long their turning mills had used waterpower—in 1850, by contrast, Newark had four steam-powered turning shops and one steam-powered sawmill, while all its chair and cabinet manufactories still relied on human power. Clearly the abundance of upland woodlots, waterpower sources, and semiskilled laborers (perhaps including farmers and other seasonal laborers, who worked for less on average than Newark artisans), as well as other factors such as lower rent, made possible the economical production of turned parts for Alling and other urban chairmakers and manufacturers. Competition between the multitude of potential suppliers that were spread across rural New Jersey kept chair parts coming into Alling's manufactory at prices that could not be equaled in Newark. As in the late eighteenth century, products of the Passaic River valley were funneled, in a sense, through Newark on their way to New York.[45]

In addition to parts suppliers, Alling contracted for outside labor services, especially in Newark. The earliest and most complete records of urban outwork are found in Alling's accounts with Lyon from 1815 to 1817. His schedule varied widely. In 1816 he was paid $740.69 for work completed in 173 days, or an average of 14.4 days per month, but he might work from as many as 25 days in October or as few as 6 in June, depending on both Alling's labor needs and his own available time. In that year Lyon tipped 2,053 painted chairs, bronzed 434, ornamented 248, gilded 143, and striped 56. On a piecework basis, Lyon could receive $3.75 one day for 24 Windsor chairs or $7.50 the next day for bronzing 12 slat-back chairs. That Lyon had employees is strongly suggested by his having received an average of $4.28 per day at a time when journeyman cabinetmakers were receiving a fraction of that figure for similar work. Alling, moreover, paid Lyon in cash as well as in supplies, such as a book of gold leaf or a pint of turpentine, items that Lyon would have used in his shop.[46]

Although contract labor is difficult to identify because Alling's business records usually did not explain disbursements, from the late 1820s through the 1840s, Alling clearly used contract laborers in Newark, New York, and rural New Jersey. In 1829 and 1830, for example, Newark coachmakers Campfield and Hedenburg were paid for sawing 440 chair tops out of maple (probably supplied by Alling) at a $.01 piecework rate. Alling's New Jersey and New York contractors were self-employed artisans who provided labor in their own shops at agreed-to rates and were paid in

[44] Alling receipt book 1, November 20, 1818, June 8, 1822–January 9, 1829, Alling receipt books 1–3, October 27, 1827–October 1, 1852, Alling daybook 1, bound receipt, March 27, 1833, Alling receipt books 1–3, October 22, 1829–March 18, 1854, Alling ledger, pp. 181, 213, 232, Alling daybook 1, bound receipts, October 27, 1828–October 4, 1834, NJHS.

[45] The turners were Michael Burrage, George Hawes, Elias Norwood, and John C. Turner; the sawyer was Joseph Dalrimple (1850 Census of Manufactures). As long as chair production was restricted to "stick" designs, country woodworkers could expand into manufacturing. Tunis R. Cooper of Schraalenburgh (now Bergenfield), Bergen County, began manufacturing chairs about 1850 in a shop built next to his waterpowered sawmill; using local workers and wood, he flourished in the years 1859–63. See Betty Schmelz et al., *T. R. Cooper's Chair Factory: Early Industry in Rural Schraalenburgh* (Bergenfield: Bergenfield Museum Society, 1984), p. 5. Steam power was also possible in such rural workshops. In 1840 Hunterdon County chairmaker John Volk acquired a steam engine for turning wooden chair parts. See Hubert G. Schmidt, *Rural Hunterdon* (New Brunswick: Rutgers University Press, 1945), p. 226. For the history and geography of the rural areas from which Alling was supplied with chair parts, see John Whitehead, *The Passaic Valley, New Jersey, in Three Centuries*, vol. 1 (New York: New Jersey Genealogical Co., 1901).

[46] Alling record book 2, NJHS. For the period 1795–1810, the average journeyman cabinetmaker was paid an estimated 7*s*.7*d*. (about $1.00) per day. See Charles F. Montgomery, *American Furniture: The Federal Period* (New York: Viking Press, 1966), p. 23. In the 1815–20 period, the average daily wage of Philadelphia artisans was about $1.76 and of laborers about $1.00. See *Historical Statistics*, p. 163 table D715-17. The entry for June 26, 1815, in Alling's account with Lyon mentions work done by the latter for Jacob Allen and Abraham Cross from September 1813 to April 1815, NJHS. Allen and Cross were Newark cabinetmakers (White, *Early Furniture*, pp. 40, 51).

cash and supplies. Unlike parts contractors, they supplied labor but no materials. Their availability resulted in an increased division of labor and in an outside pressure on journeymen's wages, much as was the case in New York.[47]

Craft Industrialization

The process by which Newark's crafts were industrialized is illuminated in Alling's business records. Based in large part on these unusually full records, this case study both complements and modifies previous work on the subject. In her study of Newark trades from 1800 to 1860, Susan E. Hirsch presented the social history of craft industrialization as a "transition between two ideal states": the traditional craft, in which workers learned all aspects of production through apprenticeship and then, either as journeymen (employed) or masters (self-employed), used their own hand tools to fashion in their entirety products intended for the local retail market; and the modern factory-based industry, producing for distant wholesale markets, with production divided into a series of simple tasks, each performed by a worker with limited skills and bleak prospects for advancement, who used the owner's hand tools as well as machines driven by nonhuman power sources. Within this continuum, there were three discernible stages: task differentiation; introduction of machinery, at first human powered; and factory mechanization by the use of machines using nonhuman power sources. Hirsch studied eight crafts (carpentry, blacksmithing, shoemaking, saddlemaking, jewelrymaking, trunkmaking, leathermaking, and hatmaking) and showed that the rate of industrialization varied widely and the process was incomplete by 1860.[48]

Alling's manufactory shows conditions that do not neatly fit Hirsch's typology. The traditional craft of chairmaking was already breaking down in the eighteenth century. The principal characteristics of the transitional economy, visible in Alling's business records, can all be found before 1800, especially in New York and Philadelphia: manufactories producing inexpensive chairs for distant markets; chairs designed to be less labor- and materials-intensive; standardized parts turned on human-powered machines; task differentiation that allowed economies of scale to be achieved with less skilled labor; and the division of manufacture between specialized in-shop workers and outside contractors. In the early years of the century Alling almost certainly introduced these elements to the traditional world of Newark chairmaking on a "proto-industrial" New York model.[49] His achievements over the next half century were much more incremental than revolutionary. The output of his manufactory expanded to meet growing markets. The first two transitional stages, to use Hirsch's typology, were achieved at the very beginning; the third stage (mechanization with nonhuman power sources) was achieved at least as early as the 1840s by the use of outside contractors, a decade after Alling's manufactory had achieved maximum size, division of labor, and production. In craft industrialization, Alling and a few other members of his trade were decades ahead of the eight crafts studied by Hirsch.

This transitional manufactory system was successful and adaptable enough that artisans in eastern cities were loath to abandon it. American chairmakers and cabinetmakers were remarkably slow to embrace the new woodworking technology conceived in England from the late eighteenth century and perfected in the nineteenth century. Steam-powered turner's lathes and innumerable other woodworking machines were displayed at the New York Crystal Palace Exhibition of 1853. While midwestern furniture manufacturers began to use this technology to reduce labor costs and expand operations, small shops with human-powered machinery continued to dominate in the

[47] Alling daybook 1, bound receipts, July 16, 1829–April 26, 1830, NJHS. Many other examples may be added. In 1831 George and Amos K. Carter (Newark shoemaker and coachmaker respectively) sawed 561 chair backs, tops, and slats at a $.01 piecework rate (Alling daybook 1, August 15, November 1, 1831, NJHS). Francis Cellar of New York caned 66 chairs, stools, and a settee in eleven days between December 9, 1841, and June 21, 1842, and received in return $25.25 in cash, a lathe wheel, and tools (Alling ledger, p. 238, NJHS). Among New Jersey contractors for matting rush-bottom seats in the 1830s were Jackson Place of Raritan Township, Hunterdon County, and Solomon Jenning of Hope, Warren County (Alling receipt book 2, September 16, 1831, October 28, 1835, NJHS). In 1840 and 1841, Newark carver Robert W. Alcock upholstered 12 chairs at a $1.50 piecework rate (Alling ledger, p. 198, NJHS). Wilentz, *Chants Democratic*, p. 127.

[48] Hirsch, *Roots of the Working Class*, pp. 21–36. Her study is based largely on census records, directories, and newspapers, rather than business records, which, although available, were not used.

[49] For a discussion of the proto-industrial model, see Wilentz, *Chants Democratic*, p. 113. For a view of specialization and levels of production in cabinetmaking, see Benjamin A. Hewitt, Patricia E. Kane, and Gerald W. R. Ward, *The Work of Many Hands: Card Tables in Federal America, 1790–1820* (New Haven, Conn.: Yale University Art Gallery, 1982).

eastern cities into the 1870s. Newark was no different. As long as Alling and others could manufacture for the low end of the market and could buy standardized parts from country turning mills (which in New Jersey by the 1840s were using both steam and waterpower) more cheaply than he could have made them in the city, there was no inducement to invest in capital-intensive machines, to say nothing of the physical plants, power sources, fuel, and maintenance that they required. Those manufacturers who would expand to modern factory proportions, of course, had integrated operations and a far broader product line than did Alling. In 1850, for example, William B. Douglas's eight-year-old manufactory and its 35 employees hand produced $25,000 worth of furniture. But within a decade after the Civil War ended, it had expanded to a larger facility (fig. 7). With steam-powered machinery, a slightly larger work force of 40 men manufactured $50,000 worth of furniture per year for sale in Newark and its suburbs and in New York. The factory was "provided with machinery and convenient arrangements . . . to cheapen the cost of fine furniture."[50]

Craft manufactories slowly gave way in Newark to workplaces that in the second half of the nineteenth century increasingly began to resemble modern mechanized factories. John Jelliff, Newark's most renowned cabinetmaker, employed 40 in 1850 and 49 a decade later in the manufacture of chairs, bureaus, sofas, tables, bedsteads, and mattresses, which were all made and finished by hand (fig. 8). There was a slow process of "vertical integration," whereby all processes were brought under one roof, a radical departure from the sort of divided manufacture seen in the workshops of Alling and his contemporaries. Of Jelliff's 40,000-square-foot establishment it was said in 1874: "All the processes necessary for completing

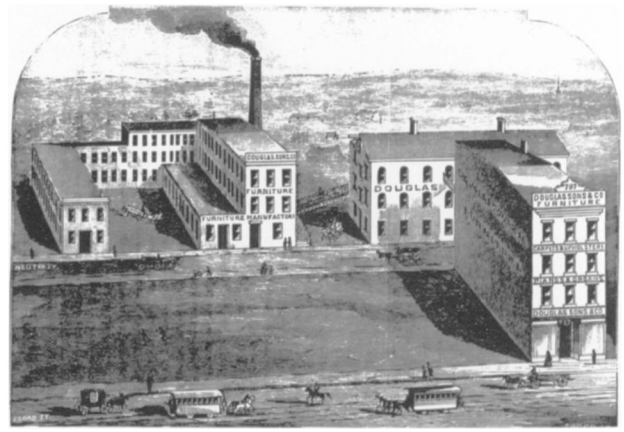

Fig. 7. Douglas, Sons, and Company factory and warerooms, 1874. From William F. Ford, *The Industrial Interests of Newark, N.J.* (New York: Van Arsdale, 1874), p. 167. (New Jersey Historical Society.)

the finest furniture are carried on in their own factory under the immediate supervision of Mr. [Henry H.] Miller. Thus is full assurance given that only the best material and methods are employed." A decade after the end of the Civil War, Newark chair and furniture manufacturing was becoming mechanized, surely in order to compete with both local and western producers in the New York market, which had replaced the South as the principal outlet for Newark products. Small craft shops and manufactories survived in Newark and New York well into the second half of the century. Their output, however, paled in comparison with that of fully mechanized factories. True mass production would never come to furniture manufacturing in the eastern cities, but there was less and less room for the transitional forms of manufacturing that had been the lifeblood of the Newark economic life in the first half of the century.[51]

Conclusion

Alling's world was one of elaborating on and perfecting forms and methods of production and

[50] For an overview of woodworking machinery, see Ettema, "Technological Innovation," pp. 207–23. David A. Hounshell, *From the American System to Mass Production: The Development of Manufacturing Technology in the United States* (Baltimore: Johns Hopkins University Press, 1984), p. 129; Polly Anne Earl, "Craftsmen and Machines: The Nineteenth-Century Furniture Industry," in *Technological Innovation and the Decorative Arts*, ed. Ian M. G. Quimby and Polly Anne Earl (Charlottesville: University Press of Virginia, 1974), pp. 316–18. In Philadelphia, for example, no chairmakers used steam power until 1880, when but a fifth of furniture manufacturers were employing the new woodworking technology. See Page Talbott, "Philadelphia Furniture Makers and Manufacturers, 1850–1880," in *Victorian Furniture: Essays from a Victorian Society Autumn Symposium*, ed. Kenneth L. Ames (Philadelphia: Victorian Society of America, 1983), p. 89. 1850 Census of Manufactures; Ford, *Industrial Interests*, p. 182.

[51] 1850 and 1860 Census of Manufactures. Ford, *Industrial Interests*, pp. 180–84. Of the 8 furniture manufacturing firms described by Ford, 5 were said to sell mainly to the local and regional market—New York, Newark, and nearby towns in New Jersey. Alfred Chandler argued that in the woodworking industries, factories grew by adding more men and machines, but beyond a point such growth would not result in significant gains in productivity (Alfred D. Chandler, *The Visible Hand: The Managerial Revolution in American Business* [Cambridge, Mass.: Harvard University Press, 1977], pp. 247–49).

Fig. 8. John Jelliff factory and warerooms, 301 Broad St., Newark, N.J. Photo, ca. 1850. (New Jersey Historical Society.)

marketing that were already in place by the revolutionary era. In an important recent article, Charles Sabel and Jonathan Zeitlin described such an early industrial economy emerging in western Europe and North America at the end of the eighteenth century. Providing a craft alternative to mass production (defined by Sabel and Zeitlin as "the combination of single-purpose machines and unskilled labor to produce standard goods"), this type of economy was characterized by small work forces of varying skills, flexible use of technology, manufacturers closely attuned to changing market forces, and cooperation between communities of small producers in manufacturing centers.[52]

In the context of antebellum industrial development, Alling and his contemporaries illustrate the concept of "flexible specialization" explored by Sabel and Zeitlin. Making use of limited technology and the available, largely native-born work force, Alling was able to industrialize the chairmaker's craft. In order to accommodate the rapidly expanding markets (the result of a burgeoning population, the transportation revolution, the health of the South's cotton economy, and westward expansion), Alling introduced production methods and chair styles from New York to Newark, dramatically modified the local organization of production, coordinated a complex and

[52] Charles Sabel and Jonathan Zeitlin, "Historical Alternatives to Mass Production: Politics, Markets and Technology in Nineteenth-Century Industrialization," *Past and Present*, no. 108 (August 1985): 133–76. The thesis of craft production as an alternative to mass production has also been developed in Michael J. Piore and Charles F. Sabel, *The Second Industrial Divide: Possibilities for Prosperity* (New York: Basic Books, 1984).

geographically extended network of labor and parts subcontractors, continually varied the volume and style of his output, marketed his products in new and ambitious ways, and was able to compete successfully on both a local and a national level with other chair manufacturers. Responding to market forces, relatively small independent producers like Alling used currently existing elements to produce a system of production and marketing perfectly suited to its time and place. Entrepreneurship and market expansion combined to change the face of Newark and other northeastern cities almost beyond recognition, decades before steam-powered factory mechanization spelled the end of the transitional economic world of craft manufacturers like David Alling.

Appendix

Sales of Chairs and Other Seating Furniture from David Alling's Manufactory, 1819–1855

	Southern and Latin American sales			Local and regional sales		
Year	Items sold	Net sales	Average price	Items sold	Net sales	Average price
1819	488	$1,479.00	$3.03	...	...	...
1820	144	385.00	2.67	...	...	...
1821	232	666.00	2.87	...	...	...
1826	674	2,120.00	3.15	62*	$ 131.88	$2.13
1827	652	1,888.75	2.90	511	1,020.14	1.99
1828	804	1,965.75	2.44	522	1,116.88	2.14
1829	774	1,528.00	1.97	620	1,165.56	1.88
1830	1,038	1,696.50	1.63	613	1,120.59	1.97
1831	1,145	1,903.63	1.66	765	1,388.65	1.81
1832	1,830	2,972.25	1.62	1,042	2,011.39	1.93
1833	4,161	7,059.25	1.70	1,270	2,866.78	2.26
1834	2,569	5,119.25	1.99	1,368	3,091.34	2.26
1835	3,559	6,182.75	1.73	1,687	3,703.25	2.20
1836	...	...	...	1,807	5,248.52	2.90
1837	...	...	...	956	2,752.45	2.88
1838	...	...	...	676	1,580.84	2.33
1839	...	...	...	727	1,712.45	2.36
1840	...	...	...	490	1,200.11	2.45
1841	...	...	...	464	1,014.38	2.19
1842	...	...	...	406	650.91	1.60
1843	...	...	...	368	602.71	1.64
1844	...	...	...	493	810.12	1.64
1845	...	...	...	181	285.77	1.58
1846	...	...	...	268	525.20	1.95
1847	...	...	...	239	452.75	1.89
1848	...	...	...	369	652.35	1.77
1849	...	...	...	241	355.82	1.48
1850	1,893†	...	...	607	1,009.70	1.66
1851	...	...	...	611	1,034.78	1.69
1852	...	...	...	371	596.89	1.61
1853	...	...	...	222	495.93	2.23
1854	...	...	...	161	352.77	2.19
1855‡	...	...	...	630	1,094.96	1.74

SOURCE.—Shipping register and scattered accounts in record books 1 and 2 (southern and Latin American sales); daybooks 1 and 2 and two New York accounts in shipping register (local and regional sales).

* The initial entry in daybook 1 is dated September 13, 1826.

† This figure is the difference between the 2,500 chairs and other items manufactured by Alling (U.S. Census, 1850, Fifth Series: Productions of Industry) and the 607 that he sold locally and regionally.

‡ Compiled from the estate inventory and records in record book 4, this represents the estimated prices of finished and unfinished chairs in Alling's manufactory at the time of his death; these chairs were sold individually and at auction from 1855 to 1857.