

*New Jersey's
Revolutionary Experience*

23

*The Fine
and the Useful
Arts in New Jersey,
1750-1800*

SUZANNE CORLETTE

New Jersey Historical Commission

NEW JERSEY'S REVOLUTIONARY EXPERIENCE

Larry R. Gerlach, *Editor*

This series of publications is dedicated to the memory of Alfred E. Driscoll, governor of New Jersey from 1947 to 1954, in grateful tribute to his lifelong support of the study and teaching of the history of New Jersey and the United States. He was a member of the New Jersey Historical Commission from 1970 until his death on March 9, 1975.

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Foreword

New Jersey's Revolutionary Experience is a Bicentennial pamphlet series published by the New Jersey Historical Commission with a grant from the New Jersey Bicentennial Commission. The twenty-six numbers and two teachers' guides are intended to acquaint secondary school students and the general public with the state's history during the era of the American Revolution. Some titles treat aspects of the Revolution in New Jersey, while others show how important themes of the colonial period developed during the revolutionary years; some bring together the results of existing scholarship, while others present the findings of original research; some are written by professional historians, and others by laymen whose investigations of Jersey history exceed avocation. Because the series is directed to a general audience, the pamphlets have no footnotes but contain bibliographical essays which offer suggestions for further reading.

New Jersey's Revolutionary Experience is the product of a cooperative venture by numerous individuals and agencies. On my behalf and that of the pamphlets' readers, I accord recognition and appreciation to the individual authors for their contributions to New Jersey history, to the New Jersey American Revolution Bicentennial Celebration Commission and the New Jersey Historical Commission for their support of the project, to Hank Simon, president, Trentypo, Inc., for his invaluable suggestions and cooperation in producing the series, and to the staff of the Historical Commission: Richard Waldron, Public Programs Coordinator, who as project director supervised the series from commencement to completion; Peggy Lewis, Chief of Publications and Information, and Lee R. Parks, Assistant Editor, who edited and designed each number; and William C. Wright, Associate Director, who contributed valuable suggestions at every stage of production.

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Figure 1. This wine bottle, dated 1752, is generally believed to be a product of the Wistarburgh glassworks (see text, p. 11). Courtesy Philadelphia Museum of Art.

The arts in New Jersey during the revolutionary period included those skills which created practically any material object. A society whose economy was based on agriculture demanded utilitarian skills of its craftsmen. There was little time for the pursuit of the purely intellectual “fine arts”; the rigorous life of the eighteenth century precluded that kind of luxury. That is not to say, however, that the silversmith, glassblower, cabinetmaker and other craftsman did not find esthetic pleasure in his work or that his products lacked esthetic qualities. In the days before mass production there were fine craftsmen who indeed were artists.

The Apprentices System

The eighteenth century craftsman learned his trade by serving an apprenticeship of from three to seven years with a master craftsman whose taste and personality imposed themselves on the products of his shop.

In a country whose economy was largely agricultural, only the larger urban centers demanded merchandise sufficient to keep a sizeable number of craftsmen plying their trades on a full-time basis. In the villages and more rural areas, the craftsman who was also a farmer, made the products of his trade only as the customer ordered them. Ordinarily he did not keep a shop stocked with ready-made wares.

The economic system in colonial America was based on the family unit; the labor force consisted of master craftsmen and their families (primarily the sons). Also important to the success of the

system were slaves, journeymen, and apprentices. The apprenticeship system is an ancient one, and the established duration of the training period, regardless of the craft, was seven years. However, in the colonies, where trained craftsmen were scarce, the term of service was frequently reduced to four years and sometimes, as in northern New Jersey, to three years.

A contract bound an apprentice to his master. In return for his labors, the master taught the apprentice the secrets of his trade; fed, clothed and housed him with his family; and, usually, took responsibility for his formal education.

Both voluntary and compulsory apprenticeships existed. The former occurred when boys at about the age of fourteen were bound out, with the consent of their parents, to a master craftsman; by the age of twenty-one they would have mastered a trade. Frequently less satisfactory were the compulsory apprenticeships negotiated by colonial officials on behalf of orphans and illegitimate youths for the purpose of minimizing costs of maintaining the community's poor.

The countless advertisements concerning runaways that appeared in eighteenth century newspapers—apprentices less often than indentured servants and slaves, nonetheless of significant number—indicate the discontent that the system engendered. Trenton blacksmith George Tucker offered forty shillings reward in *The New-York Mercury* on December 10, 1764, for the return of a runaway “apprentice boy named John Gormon, about 19 years of age, dark complexion, much freckled in the face: Had on when he went away, a cloth coloured coat, with a falling cape, cloth coloured jacket, and buckskin breeches, two shirts, one white, the other check ...”

On November 9, 1775, New York shoemaker John Hancock offered three dollars reward in *The New-York Journal* for the return of “an apprentice lad, named Moses Badgely, a shoemaker by trade, about 19 years of age, five feet high It is supposed that he has gone to his father's, Moses Badgely, in Turkey [now New Providence, Union County], New Jersey”

Certainly New York and Philadelphia both supported master craftsmen in greater variety and numbers than any town in New Jersey; so it is indeed reasonable that youths from northern New Jersey served apprenticeships in New York. The same practice occurred between South Jersey and Philadelphia.

The next step toward becoming a master craftsman was the position of journeyman. Having completed his apprenticeship, an artisan hired himself out as a journeyman wherever work was available. Advertisements in colonial newspapers indicate that work for the journeyman abounded in eighteenth century America. The following notice appeared in *The New-York Mercury* on July 5, 1762:

WANTED, on George's Road, in New-Jersey, near Brunswick, a good Blacksmith, that understands shoeing of Horses, and Country Work. Whoever wants Employment, shall have a good House and some Land, with Iron, Steel, &c. and all Sorts of Tools necessary for carrying on Business

In 1764 William Foster of Burlington County needed "a Shoemaker, Taylor, and Wheelwright, who, if they come well recommended for Sobriety, Honesty and Industry, may find good Encouragement by applying to the Subscriber, where convenient Dwelling-houses and Shops may be had, at a moderate Rent"

A well trained journeyman with sufficient ambition would soon have money to purchase the tools and materials he needed to set up a business. Many artisans, of course, had neither the skill nor the inclination to go beyond the level of journeyman.

The system created many objects sought today by museums and private collectors. But which of the many preindustrial arts—or crafts—that were practiced in the colonies and the early republic were to flourish in New Jersey, and why? Which would create objects recognizable even two centuries later as peculiar to New Jersey?

Certain raw materials native to New Jersey which were, and still are, found on the surface of the land were readily accessible to Europeans who settled the area. They are clay, sand, iron and, most important of all, wood.

Pottery

Long before American-made glassware was available to the colonists, earthenware, wood and horn effectually satisfied the need for containers. Early use was made of common red brick clay deposits found in New Jersey along the Delaware River from the present Finesville in Hunterdon County to Bridgeton in Cumberland County, and northeast from Trenton to Elizabethtown (modern Elizabeth). Deposits of a finer, denser blue clay were located in

the area around the Raritan and Newark bays, and up along the Hackensack River. Because of the fine quality of New Jersey blue clay, potters in New York, New England, and even Canada used it for the manufacture of stoneware, a harder, less porous ware than the redware made from brick clay.

The potter's tools and raw materials were simple and available, and his wares were so much in demand that according to Robert J. Sim, by the time of the American Revolution, hardly a town of consequence was without its pottery, most of them worked by two to six men, aided in many places by local deposits of clay" Essential to the craft were the potter's wheel, made of wood or stone, and the kiln (oven), made of brick. The colonial potter also used wooden tubs or trays for washing the clay, sieves for screening out impurities, wooden mallets for pounding the clay to remove air, scrapers for shaping and a wire to free the finished piece from the wheel.

Decorating tools included wooden stamps and coggle wheels for impressed decoration, any sharp utensil for incised decoration and earthenware cups with one or more quills from which liquid clay, called slip, with a metallic oxide added for color, was trailed across the surface to create a simple free-hand line decoration.

Color decoration on redware might be green, brown-black, or orange, attained from oxides of copper, manganese and iron, respectively. Eighteenth century potters commonly used clear lead glaze (a mixture of lead oxide, sand and clay) to make redware impermeable. In time, acidic foods stored in lead-glazed containers reacted with the lead to become highly toxic. Although redware continued to be used into the twentieth century, fritting (melting the components of the glaze in order to make certain water-soluble materials insoluble) which made the glass inert and essentially eliminated lead poisoning, did not become common practice until the mid-1800s.

Color decoration on stoneware consisted primarily of cobalt blue, but sometimes green, purple or brown, from copper, manganese or some other metallic oxide. The clay used for stoneware became semivitreous upon firing and did not require the overall glazing that redware did. Instead, common salt thrown into the kiln when the temperature had reached 2000° F. vaporized and settled on the wares to form a pitted, glass-like surface. Unlike the glaze on

redware which formed a separate coating, salt glaze actually became part of the stoneware body. Not until the nineteenth century was Albany slip (brown clay from Albany, New York) used on interior surfaces of stoneware vessels to insure greater impermeability.

The early potteries of New Jersey were relatively small-scale family enterprises. Usually begun by one man, they were carried on by nephews, sons and sons-in-law who later might join forces with one or two other potters; in at least one instance a pottery passed into the ownership of a daughter. If a pottery were successful enough to require the services of non-family workers, they probably did not number more than three or four at any given time. By necessity if not by choice, potters, like many colonial craftsmen, were a mobile group.

The first pottery made by European settlers in New Jersey was probably redware. Daniel Coxe established a pottery in Burlington, which turned out tin-glazed redware as early as 1681. Dr. Coxe, who served as court physician to King Charles II's queen and to Queen Anne, and as governor of West Jersey from 1687 to 1692 (although he remained in London), was an absentee owner of New Jersey's first known pottery. The wares, coated with white slip, imitated the English delft that the colonists imported and displayed on their cupboards, highboys and mantelpieces, and delft attempted to imitate in pottery the more pretentious and highly revered Chinese porcelain.

The earliest dated piece of redware, believed to have been made in the vicinity of Salem, and incised on the bottom "FEB/1704/T.S.W.," is a 4-1/2 inch high pitcher owned by the Salem County Historical Society. Although there is evidence of a number of potteries in New Jersey manufacturing tiles and bricks as well as stoneware prior to the revolutionary war, the known potters invariably date after that period. Manufacturers of redware working in New Jersey in the eighteenth century include Joseph McCully and his nephew, also Joseph McCully, who worked in Trenton from about 1780 to 1852; Benjamin Seigle and his son, Jacob, who came from Pennsylvania to the Musconetcong Valley and established a pottery at the site of present Finesville in about 1795; and Phillip Durell who was associated with the Jugtown pottery near Princeton. On June 13, 1781, Durell advertised in *The New-Jersey Journal* that his establishment in Elizabethtown was producing slip-decorated redware and sgraffito ware (redware totally covered with

slip through which a design is scratched to reveal the contrasting body color).

The earliest dated piece of stoneware believed to be of New Jersey origin is a jar made either by or for a Joseph Thickson, whose name and the date "1722" were inscribed in cobalt blue on the side of the piece, most recently owned by the Monmouth County Historical Association.

Evidence of extended family interest in a particular craft exists among the complex, interrelated group of stoneware potters who worked the rich clay deposits around South Amboy, one of the busiest pottery centers in New Jersey during the late eighteenth and early nineteenth centuries. The first of the group, Captain James Morgan, established a pottery on the south shore of Raritan Bay at Cheesequake where he made cobalt blue-decorated salt-glazed stoneware mugs, jugs, jars and chamberpots from about 1754 to the early years of the Revolution. Morgan's son, James, Jr., operated the Cheesequake pottery after the war. In about 1800, in partnership with Jacob van Wickle and Branch Green, he established a pottery on the South River at Old Bridge. James Morgan & Co. advertised in *The True American* on July 22, 1805, pots and jugs from half-pint to three-gallon size, pint and quart mugs and chamber pots.

In 1785 Mary Morgan, the captain's daughter, married Thomas Warne who, by about 1800, was operating a pottery just a mile away from the Morgan pottery at Cheesequake. Thomas and Mary's daughter, Melinay Warne, married Joshua Letts. From about 1805 until Thomas Warne's death in 1813, Letts worked in partnership with his father-in-law continuing the business until he died in 1815 and Captain Morgan's granddaughter, Catherine Bowne, inherited the pottery.

Mary Morgan's sister, Sarah, married Jacob van Wickle who went into partnership with his brother-in-law, James Morgan, Jr., about 1800. Van Wickle's son, Nicholas, operated a pottery in Herbertsville on the south side of Manasquan inlet for some fifteen years starting in 1823.

As any other colonial industry, during the revolutionary war the potteries in New Jersey were subject to enemy attack, and on August 8, 1779, British soldiers destroyed a kiln of unfired stoneware at the Morgan's in Cheesequake. The inventory of goods the

enemy took and destroyed included stoneware, glassware, pewter, silver, and furniture. No doubt numerous potters failed to resume business after the war, and others left New Jersey to set up potteries where the market seemed more promising. Because few potters marked their wares much before the close of the century, this information is difficult to ascertain; but Peter Peregrine Sandford, who made stoneware marked “Barbadoes Neck” (now Hackensack) either during or soon after the war, later lived in White Plains, New York.

Despite the disruption caused by the war, in the nineteenth century pottery making developed into one of New Jersey’s major industries. Increased production accompanied the manufacture of molded wares and the development of more durable bodies, first yellowware, then whiteware, and finally, porcelain.

Glassware

Southern New Jersey’s abundant sand, forests, and navigable rivers led to the establishment of one of the first glasshouses in America. In the seventeenth century, attempts were made to produce glass at Jamestown, Salem (Massachusetts), New Amsterdam (New York), and Philadelphia; but Wistarburgh was to become the first eighteenth century glasshouse in America and the first successful commercial enterprise of its kind.

Caspar Wistar, the founder of the glassworks, was born in the lower or Rhenish Palatinate, not far from Heidelberg, Germany, in 1696. With dim prospects for a promising future in the homeland, he departed for America at the age of twenty-one, arriving in Philadelphia with practically no money, but free—he had been able to pay his own passage. Soon Wistar learned the trade of making brass buttons—in the eighteenth century an essential commodity, especially for men’s clothing. Although foreign-made buttons abounded, the business became lucrative and, along with land speculation, helped make Wistar one of Philadelphia’s wealthiest men at the time of his death in 1752. With a seven-year guarantee behind them, it is no wonder that his buttons gained popularity among the pragmatic Quaker population of Philadelphia and the lower Delaware Valley. A general store, where the manufacturer of “Philadelphia brass buttons” sold imported goods—buttons and glass included—from England and the Continent, provided a convenient

outlet for his products.

For reasons as obscure to us as those that inspired him to manufacture brass buttons, Wistar ventured into the glassmaking business. The porous quartz sand, essentially the compound silicon oxide that covers much of the coastal plain of southern New Jersey, was the source of the primary constituent of glass: silica. The forests along Alloways Creek, just east of the town of Salem, where Wistar's land was located, provided wood to heat the furnaces of his glasshouse, and potash, a second constituent of glass. The abundant clay deposits in New Jersey provided material for the large pots in which batches of glass were prepared, and the bog iron that formed in the stream beds of the swampy lowlands provided the few tools necessary to the glassblower.

Although cost of fuel was the greatest expense of the industry, the cost of tools was virtually negligible. The tools essential to a glassblower included the blowpipe, a hollow tube up to six feet long, wider and thicker at the gathering end and insulated with twine, wood or leather at the blowing end; the pontil, a hollow or solid rod of about the same length as the blowpipe, used to hold an object during finishing after it had been separated from the blowpipe; and pucellas, U-shaped spring tools used for shaping rims, handles, or stems.

A variety of other tools, both metal and wooden, that may well have been used in eighteenth century glasshouses include dip molds and piece molds, shears, compasses, calipers, tongs, battledores, clappers and lippers. Dip molds initiate body shape or impress a pattern on a gather of glass blown into the mold. The gather is withdrawn from the mold and expanded by further blowing before finishing. Part-size piece molds made of two hinged parts work on the same principle as dip molds but require the aid of an assistant. Shears cut a portion of glass from a gather for a handle or stem, or they remove excess glass in forming a spout or rim. Compasses and calipers help maintain uniformity of shape and size. Tongs are used for less refined operations much the same way as pucellas.

The battledore, a flat rectangular paddle, flattens and smooths the bottoms of bottles, glasses or bowls. The clapper shapes the disc-like foot of a goblet or candlestick. A conical lipper helps form the lip of any pouring vessel. A forked stick would suffice for carrying finished pieces to the annealing oven where, over a period of

several days, they cool to room temperature.

The glassblower uses a polished metal slab (a marver) supported by a wooden frame when he first removes a gather from a batch of red hot glass (metal). He rolls the gather on the marver for surface smoothness and uniform thickness.

The master blower's (gaffer's) chair is made of wood and has no back. Its gently sloping, extended arms, topped with metal, enable the gaffer to roll his blowpipe or pontil and keep the hot, plastic glass in constant motion.

Colonial furnaces consisted of three chambers: the fire chamber at ground level, above it the calcar, and the annealing chamber at the top. Workmen mixed silica and potash or lime in measured proportions. Washed pieces of broken glass (frit) added to this mixture aided in the fusion process. The men shoveled batches of the mixture into pots in the calcar and, as the mixture melted down, added more until the pots were full, a process which might take from twelve to fifteen hours. As the temperature of the mixture rose, impurities surfaced forming a white scum (gall), which had to be removed to keep the batch from spoiling. At 2500° F. this work was dangerous. The complete process took from thirty to forty hours. Then the "metal" was cooled to about 1800° F. until the liquid glass thickened enough to be workable. Finished pieces placed in the annealing chamber, located furthest from the fires, cooled gradually.

As was customary, the workers at Wistarburgh were divided into groups called shops headed by a master blower. One of his assistants, a gatherer, collected a gather of glass on the blowpipe and, after rolling it on the marver, introduced the initial puff of air. The next assistant, a servitor, swung the blowpipe to elongate and expand the gather by further blowing to form what was called the parison. An apprentice might work the piece mold or perform other odd tasks.

Since there were no trained glassblowers in America, Wistar initially contracted with four glassmen from Germany whom he took in as partners to form the United Glass Company. They arrived in Philadelphia in fall 1738. At least one of the four was from a family that had been making glass since the fifteenth century. These men trained others, and by 1747 there were six master blowers at Wistarburgh.

Glassworkers are traditionally a mobile group. The names of

two Wistar employees appear in the records of William Henry Steigel's glasshouse which began operating in Lancaster County, Pennsylvania in 1763, and apparently others left Wistarburgh later for greener pastures at Steigel's Manheim factory, northwest of Lancaster.

The only other glasshouse besides Wistar's to operate in New Jersey in the eighteenth century was that of the Stangers (or Stengers). Seven members of the family, which had produced glassworkers in Germany since the sixteenth century, came to Wistarburgh in 1768, the year after the death of one of Wistar's master gaffers. Some of the Stangers came as indentured servants; one of them had run away two years after his arrival, and another joined Steigel's labor force in 1774. After the close of the Wistar operation (about 1780) the Stangers started their own factory at Glassboro, in Gloucester County.

The major products of the Wistarburgh factory were window panes and bottles of all sizes and shapes, possibly even octagonal, and for every imaginable use. Unquestionably, wine, liquor and beer bottles predominated. (See Figure 1, p. 4.)

Wistar's Alloway factory catered to the needs of the Philadelphia medical profession with retorts, phials, jars and medicine bottles, and the factory produced the tubes, globes and other scientific glassware necessary for Benjamin Franklin's electrical experiments.

The colors of the bottle and window glass manufactured in New Jersey, ranging from pale to grass green and from medium olive to nearly black, resulted from metallic substances in the raw materials. Glass in its natural color is called green glass. The addition of manganese oxide to the glass mixture created colorless glass, called white glass. This oxide, used in the decoration of pottery, was used also at Wistarburgh.

The objects the glassblowers made for their own amusement – for friends or for personal use and sometimes called end-of-day pieces – rather than those they made for profit, express the style, so collectible now, known as South Jersey type glass. These free-blown hollow pieces made of ordinary bottle or window glass with decorative crimping, applied threading and lily pad design, animal finials, and eared handles reflect the real creativeness of the German glassblowers.

After Caspar Wistar died in 1752, his son, Richard, carried on the button and glass businesses. The "to be sold" advertisement

that ran in *The Pennsylvania Journal* on October 11, 1780, about a year before Richard's death, proves the error of the British trade commissioners in their apparent belief that the glassworks would fail. Always under the watchful eye of English craftsmen, any type of colonial industry was anathema to British policy, which wanted no colonial competition for England's industries. The Trade Board's belief that Wistar's attempt would be no more successful than those that had preceded it would seem a reasonable explanation for not interfering in his undertaking. However, the advertisement listed two glass furnaces, ovens for annealing and for drying wood, two "flattening" ovens, a cutting house (for window panes), a pottery and rolling mill, ten houses for the workers and a master house with six rooms on each floor, a bakehouse, washhouse, and store, all on one thousand five hundred acres of land. Increasing labor problems and the encroaching war had forced Richard to extinguish the Wistarburgh fires early in 1778, but an establishment of those proportions, developing over a period of forty years in eighteenth century America, can only be termed a success.

Iron

The manufacture of iron from bog ore was another industry that flourished in South Jersey during the second half of the eighteenth century and well into the nineteenth. Environmental conditions peculiar to the pine barrens area produced an iron ore that renewed itself approximately every twenty years. In addition to furnishing the ore, formed by the chemical reaction between decaying vegetable matter in the swamps and iron salts in the water, the rivers and streams furnished the power necessary for smelting the ore and also served as transportation routes.

The forests, so important to the glass industry, were essential as well to the manufacture of iron; distilled (smoldered rather than burned) wood supplied the charcoal used as fuel in eighteenth century forges and furnaces. An estimated one thousand acres (approximately one and a half square miles) of woodland would keep a furnace, glass or iron, in blast for one season. Assuming that this acreage would reforest itself in twenty years, twenty thousand acres (thirty square miles) of woodland would keep a furnace in continuous successful operation. And the abundant oyster and clam shells became the chemical agent (flux) which freed the metal from the ore in the smelting process.

Like the glass furnace, the furnace which separated iron from impurities in the ore ran day and night while it was in blast — usually from seven to nine months of the year, depending on when freezing temperatures forced the waterwheel into disuse. Closing down (“blowing out”) the furnace, which usually occurred in January, occasioned riotous celebration — an apparently frequent occurrence. A diary kept by Martha Furnace clerk Caleb Earle in the early nineteenth century indicates frequent drunkenness among the workers and even alludes to occasional female inebriation. In 1765 Charles Read had petitioned Governor William Franklin and the legislature to grant no tavern licenses within three miles of any ironworks constructed in New Jersey without the recommendation of the owners of the works.

Ore, flux and charcoal in prescribed proportions were wheeled up a ramp and, from a platform that girdled the stack, fed into the furnace in layers. A constant blast of air forced into the furnace by a pair of giant leather bellows connected to a waterwheel helped produce the high temperatures that reduced the “charge” to a molten mass. Impurities in the form of slag rose to the top, and the purer iron sank into the pit (crucible) in the bottom of the furnace. After a clay dam (plug) was carefully removed, the red-hot liquid iron was drawn off into channels formed in the sand floor of the casting house. Depending on size and shape, the castings were called pigs, sows or runners.

Pig iron, an impure form of the metal, tends to be brittle and porous. But in the same way that it was cast into pigs in the sand, it could be cast into firebacks, stove plates, ploughshares and other farm tools, and window sash, clock and steelyard (scale) weights. Pig iron could be cast also into holloware, such as cooking kettles that hung from wooden lug poles or iron cranes in walk-in fireplaces, or huge tubs for scalding “real” pigs after slaughter.

Furnace owners could purify pig iron and often added a forge to their works for this purpose. The forge operated on the same principle as the blacksmith’s forge, but instead of the blacksmith’s arm and hammer, heavy hammers, weighing more than a quarter-ton each and operated by a water-powered tripwheel, pounded the heated pig iron into a purer, more malleable state. Tilt-hammers shaped the hot, softened mass into bars which blacksmiths fashioned into horsehoes, wagon tires, craftsmen’s tools, hinges, latches and all kinds of household utensils.

In the eighteenth century ironworkers mined the harder iron ores found in the rocky, mountainous area north of the New York-Philadelphia corridor and formed them into pig and bar iron in the same way as bog iron. When hauling ore from the mine to the furnace in the north the workmen had to contend with terrain rougher than that in the pine barrens, but steep hillsides were an advantage in loading the furnace. Connected by a bridge to the platform around the top of the stack, the hillside replaced the wooden ramp used in the southern part of the colony.

The rhythmic pounding of the forge hammers, the all-too-frequent smoking and belching of backed-up furnaces, and the aroma of smoldering wood identified the locations of the many ironworks scattered the entire length of New Jersey. Pennsylvania money supported this early New Jersey industry to a large extent. A successful ironworks with dams and sluiceways, waterwheels, furnaces, forges, rolling and slitting mills, sawmills and gristmills demanded considerable financial investment, so that often a number of men owned one operation. Wealthy men frequently invested in portions of a number of such operations.

Charles Read, for one, with well-planned land purchases he began making about 1751, initiated the development of no less than four ironworks in Burlington County. The son of a prosperous Philadelphia merchant, Read married the daughter of a wealthy planter and chief justice of the courts in Antigua while serving in the British navy. The couple settled in Burlington where Read attained political power, practiced law and, as a farmer, made a serious study of agricultural science. In 1765 he advertised four sites (probably where Taunton, Etna, Atsion and Batsto ironworks soon were built) in *The Pennsylvania Journal*, no doubt to enlist financial aid for his ambitious plans. Various associates involved with Read in the Batsto enterprise were Ruben Haines, a Philadelphia brewer; Walter Franklin, a New York merchant; John Cooper, gentleman, of Burlington; and John Wilson of Burlington County. "Before meeting with financial reverses," Charles S. Boyer tells us, "[Read] had set in motion an industry which was to extend over a period of eighty years and transform an almost untrodden forest into a hive of industry."

By 1773 the Philadelphia merchant John Cox owned Batsto. An ardent patriot, Cox played an active role in the struggle for independence, and in 1778 he was appointed assistant quartermaster



Figure 2. Matthew Egerton, Jr., of New Brunswick, made this gumwood kas around 1790(see text, p. 22). Courtesy Monmouth County Historical Association.

general of the Continental army. As ironmaster of Batsto and Mount Holly (the latter offered a forge and rolling mill which Batsto did not), in 1777 Cox contracted with the Council of Safety of Pennsylvania to make and deliver to Philadelphia several wagon loads of cannon balls. Cox also manufactured other military supplies as did ironmasters at many of the works in New Jersey. For example, Batsto supplied the pans used at the Toms River saltworks, where seawater was boiled and the salt recovered for army use.

The *chevaux-de-frise* placed in the Delaware River to protect Philadelphia from attack by British ships may well have been wrought at Batsto or some other South Jersey forge. This defense consisted of underwater obstructions made of large forged iron tips attached to a framework of timbers held in place by heavy iron chains and secured in a riverbed with anchors and stones. Workers at the Sterling Ironworks, located on the long-disputed New York-New Jersey border not far from Ringwood, forged the heavy iron chain that spanned the Hudson River at West Point to prevent British penetration upriver from New York City; and the Ringwood mines supplied the iron booms that supported wooden rafts placed in front of the chain. The 500-yard-long chain, comprised of 2 foot links of 2 1/4 inch iron, was the only successful attempt of four to block the Hudson River from 1776 to 1778. So important were the ironworks to the patriot cause as munitions depots and general suppliers to the military that ironmasters often were authorized to form military companies with some of their men, who were thereby exempt from military duty except in case of enemy invasion of the ironworks.

As with the glass industry, an entire community would build up around an ironworks. An advertisement for the sale of Batsto that appeared in *The Pennsylvania Packet* on June 26, 1783, offered a "large and commodious" furnace capable of producing one hundred tons of pigs and castings a month and of continuing in blast for two years or more at a time; brass patterns for hollowware; a rolling and slitting mill, sawmill and small gristmill. The tenants of the mansion house enjoyed a "well cultivated garden" and an orchard of two thousand apple trees. In addition to houses for tradesmen and employees, there were barns, stables, a blacksmith's shop, nailery, coalhouse, store and other dependencies. A nearby stream powered the two hammers of a recently-constructed forge that boasted four fires and a new sawmill. A coalhouse and tenements

for workmen accompanied the new structures.

The sizeable staff necessary to maintain such an operation consisted of indentured servants from Germany, England and Ireland, local inhabitants, and, more often in the northern than in the predominantly Quaker southern part of the state, negro slaves. A settlement of squatters engaged in lumbering cedar for shipment to Philadelphia and New York provided the initial labor for the ironworks that Charles Read built about 1766 on the Batsto River in Burlington County. Just three years earlier a German entrepreneur, Peter Hasenclever, formed a company with a group of affluent Londoners to develop certain industries in America. Even before purchasing the Ringwood Ironworks close to the New York border in Bergen County (now in Passaic County), Hasenclever arranged for the transportation of a number of German miners and ironworkers to operate the company's enterprise. In 1834 Thomas Gordon, in his famous *Gazetteer*, noted 60 or 70 employees at Batsto, which supported "altogether near 400 persons." Unfortunately, Gordon did not record the number of Ringwood employees.

The iron industry in New Jersey continued to flourish into the fourth decade of the nineteenth century, when coke from the Pennsylvania anthracite coal beds virtually replaced the use of charcoal for smelting. This boon to Pennsylvania's iron industry, combined with diminishing supplies of bog ore and wood for making charcoal, signaled the end of the industry in New Jersey. In an effort to bolster their faltering economies, some ironmasters introduced new industries to their establishments, such as glass and paper manufacturing. However, many ironworks simply faded into obscurity.

Furniture

Only by observation, imitation and practice could the aspiring craftsman master the art of casting an iron fireback, "throwing" a stoneware jug, making a glass bottle, or carving a claw and ball footed cabriole (curved) leg. Such information was passed along, as folk tradition, from one generation to the next by word of mouth and demonstration. By the middle of the eighteenth century though, cabinetmakers and carpenters in London had begun to publish furniture and architectural design books which almost immediately became available to craftsmen in the larger seaport cities of America.

London cabinetmaker Thomas Chippendale's publication of design ideas in *The Gentleman & Cabinet-Maker's Director* (1754) directly inspired furniture style in America during the second half of the eighteenth century. In fact, with the possible exception of Thomas Sheraton and George Hepplewhite, Chippendale probably influenced more American craftsmen than any other individual until Charles L. Eastlake published his *Hints on Household Taste* in London in 1868.

By 1760 the Chippendale style was in full bloom in the American colonies. The smooth curving lines of the Queen Anne style (anachronistic terminology as the queen had died in 1714) had given way to Chippendale's exaggerated curves and flamboyant carving and piercing. A distinctive Chippendale style developed in Philadelphia, the undisputed center of furnituremaking in the colonies before the Revolution, and more is known about Philadelphia cabinetmakers and their work than about any other group of cabinetmakers in America at that time. By contrast, in spite of their proximity to Penn's great town, remarkably little is known about the New Jersey craftsmen emulating the style of Thomas Chippendale. Interestingly, Benjamin Randolph, one of Philadelphia's finest furniture makers during the 1700s, was born in South River, New Jersey, in 1737/1738; in 1784 he was a merchant in Burlington County, where he built the Speedwell Furnace and where he lived until his death in 1791.

Primarily newspaper advertisements have identified at least thirty-four cabinetmakers working in New Jersey during the second half of the eighteenth century. Three of them advertised that they made chairs also (sitting chairs, not carriages). In addition, at least twelve other chairmakers and twenty-nine clockmakers were at work. The latter, actually silversmiths, are noted because they worked so closely with the cabinetmakers who made the tall cases for their clockworks.

New Brunswick-Elizabethtown-Newark and Burlington-Mount Holly-Salem were two major cabinetmaking centers in New Jersey. Furniture made in the East Jersey center characterizes the tastes of the Hudson Valley Dutch and the New Englanders who settled there, whereas furniture from the West Jersey center shows Quaker influence. For example, the Matthews Egerton, father and son who worked in New Brunswick from about 1760 to about 1830, continued to make the Dutch kas which had been popular as a wardrobe

at least a century earlier. (See Figure 2, p. 18.) Although the Eger-tons, John Scudder and others often used cherry or mahogany for tall clock cases, artisans in southern New Jersey continued to use walnut, as did craftsmen in Philadelphia. There, prices were quoted for furniture styles in both walnut and mahogany as late as 1796 when, in most places, mahogany had long since surpassed the walnut of the Queen Anne period in popularity.

The seven generations of the Ware family who made rush-bottom ladderback chairs in South Jersey from about 1785 until 1938 may best exemplify that the family apprenticeship system was in practice among furnituremakers. Family relationships as complex as those of the Cheesequake potters existed among cabinet- and clockmakers of New Jersey.

Burlington clockmaker Joseph Hollinshead may have displayed unusual loyalty toward Isaac Pearson with whom he apprenticed, served as journeyman, and formed a partnership from 1740 until Pearson's death in 1749; but Pearson's daughter, Sarah, may have occasioned Hollinshead's steadfastness, for the two were married in 1740. Of the seven Hollinsheads making clocks in South Jersey during the eighteenth century, two—John and Joseph, Jr., the sons of Joseph and his second wife, Martha Howe—learned the trade from their father.

John Scudder of Westfield, who made cases for Isaac Brokaw's tall clocks, married Susanna Miller, sister of Isaac's son's wife, Rebecca. Her husband, John Brokaw, like his father, was a clockmaker. Isaac's father-in-law, Aaron Miller (no known relationship to Susanna and Rebecca) worked as a clockmaker from 1747 to about 1778 and made compasses and chains used for surveying, and church bells; he left his clockmaking tools to his son, Cornelius, and to his son-in-law, Isaac Brokaw. Indeed, there were no less than seven clockmakers connected with the Miller family in the two generations that succeeded Aaron.

Although American craftsmen depended largely on English manufacturers for their tools until at least the middle of the nineteenth century, there were toolmakers working in America. New York City became a center for toolmakers in the eighteenth century, and Philadelphia developed a specialization in planemaking.

Cabinetmakers used tools fundamental to all the woodworking crafts. Because of that and an absence of specialization in the cabinetmaking profession, New Jersey could boast a generally versatile

group of woodworking craftsmen. Turners and carvers and other specialized craftsmen did piecework for cabinetmakers' shops in such urban centers as Philadelphia and New York; Newport, Rhode Island; and Charleston, South Carolina. However, the hammers and saws, chisels and gouges, files, floats, planes and lathes, the drills, dividers, calipers, clamps, vises, gauges and squares that the cabinetmaker used would enable him to do the work of a carpenter, wheelwright, patternmaker, carriagemaker, or any other woodworker for that matter, especially in rural areas where specialized craftsmen could not survive. Therefore, it is not surprising to find mantelpieces in the Westfield area that suggest the hand of cabinetmaker John Scudder. Neither should it be surprising that a cabinetmaker frequently served as his community's undertaker, for he also supplied coffins.

Most woodworking craftsmen in New Jersey farmed as well; many held public and church offices; some invested in ironworks; and frequently a craftsman aspired to the higher social status of merchant. In that type of endeavor, Elizabethtown silversmith-clockmaker Aaron Lane sold earthenware from John Durell's pottery, and when they were in season, cabinetmaker Ichabod Williams offered clams for sale.

If the rural aspects of New Jersey demanded versatile craftsmen, they also supported the loose form of payment with which craftsmen in all of the colonies, outside the larger cities, had to contend. Produce from the farm or in-kind service were equally acceptable in the prevailing credit and trade system.

Honduras and San Domingo mahogany from the West Indies were the most desirable woods of the eighteenth and nineteenth centuries. Accordingly, in 1807 Abraham Marsh Mulford and Abraham Rosett offered mahogany for sale at their shop in Elizabethtown.

Most often, however, native woods were used in the manufacture of furniture: walnut, sweetgum (often called bilsted), maple and cherry for primary woods; white pine, ash, and whitewood (poplar, also called tulip) for secondary woods which, as drawers, shelving, bracing or backboards, did not show. Although occasionally imported from New England or the South native wood generally came from the local sawmill as planks or boards. A good cabinetmaker preferred well-seasoned wood, and often the inventory of a cabinetmaker's estate included stock of various woods.

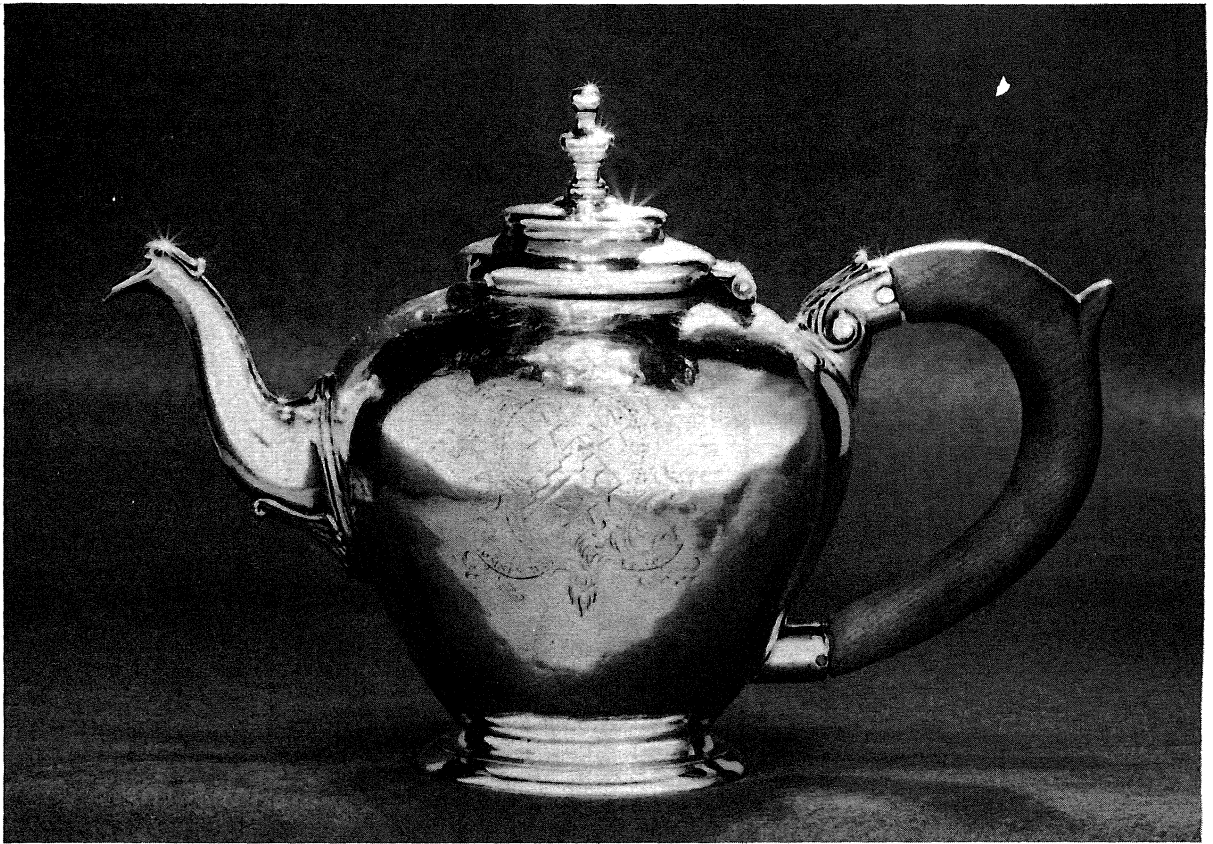


Figure 3. Teapot made c. 1750 by Elias Boudinot (father of the New Jersey delegate to the Continental Congress) of Princeton. Customarily, wooden handles such as this were fashioned by cabinetmakers (see text, p. 27). Courtesy New Jersey Historical Society.

Some of New Jersey's more prosperous citizens purchased their household furnishings from Philadelphia or New York. Jonathan Odell, who became minister of St. Mary's Anglican Church in Burlington in 1767 and practiced medicine there after 1771, imported a block-front claw-and-ball foot slant-top mahogany desk from Newport. In addition to the Rhode Island desk, Odell owned a sugar bowl and coffee pot made by New York silversmith Simeon Soumain. Aided by Governor William Franklin, Odell, a Loyalist, escaped to New York in 1776. During the evacuation of that city in 1783, he and his family departed for England, returning the following year to settle in the Loyalist province of New Brunswick, Canada. Other furniture came to New Jersey as did Dinah Van Bergh's looking glass: she brought it with her when she came from Holland in 1750 as the new wife of John Frelinghuysen, minister to the Dutch churches in the Raritan Valley.

Descriptive terminology defined the uses to which furniture was put in the eighteenth century. Price lists, ledger books and inventories list elbow chairs, lolling chairs, circular and square easy chairs, slipper chairs; dressing-, card-, gaming-, tea-, breakfast- and dining tables; looking glasses; chests of drawers, tall chests, and chests-on-chests; tall and dwarf tall clocks, shelf and wall clocks; desk-and-bookcases; pole (fire) screens; candlestands, basin stands, plant stands; work tables (for sewing); and, of course, there were sofas, and beds with bed hangings, and many other specialized forms.

Although printed and inscribed paper labels as well as stamps and brands were in use during the eighteenth century, of the thirty-odd cabinetmakers known to have been working in New Jersey, labels identify the work of only half a dozen: John Scudder of Westfield; Mulford and Rosett of Elizabethtown; Matthew Egerton, father and son, both of Elizabethtown; and John E. Leigh who worked in Trenton about 1785. Increasing population and expanding sea trade along the coast and with the West Indies provided new markets for furniture which, in turn, led to enlarged shops and increased specialization. By the early years of the nineteenth century, when Federal furniture with classical lines accentuated with veneer and inlay—styles inspired by Robert Adam in the 1760s and recorded by Hepplewhite and Sheraton in 1788—had come into vogue, the major craft divisions were cabinet- and chairmakers, inlay makers, carvers and gilders, turners, and upholsterers.

The increased use of identifying labels, stencils and brands, accompanied the nineteenth century trend of combining various crafts in one establishment.

Accessibility of raw materials permitted even greater mobility among cabinetmakers and other woodworkers than among glass-makers, ironworkers, and potters who were dependent on water transport if the raw materials they needed were not close at hand. And, indeed, woodworking craftsmen followed the market for their wares.

Silver and Pewter

Just as some crafts by their very nature allowed the craftsman a measure of mobility, some provided greater financial return to the craftsman willing to move about; and at least one craft forced the artisan to keep on the move if he were to continue to find an open market. The silversmith and the painter—the latter being the one who had virtually no choice in the matter—were probably the most mobile of all the colonial craftsmen. On occasion, silversmiths had no choice in the matter either; with inevitable frequency, silver-smithing in colonial America led to counterfeiting.

The silversmith's tools were readily transportable. Like the artist's, they were hand tools, with the exception of lathes which few silversmiths owned. For silver the craftsman depended largely on coinage and existing flatware and hollowware, as virtually no native ore was available; therefore, he gravitated toward centers of growing population and bustling commerce.

Until the founding of the first Bank of the United States in 1791, silversmiths provided security for the wealthy by melting down their coins and fashioning them into tankards, teapots, and other useful forms more easily identifiable than coins should they be stolen.

Prior to the revolutionary war, Philadelphia and New York supported many more silversmiths than any town in New Jersey. Only sixteen silversmiths worked in the entire province of New Jersey during the third quarter of the eighteenth century; whereas, Philadelphia and New York each supported three times that number. Imprecise as they are, the figures help explain why so much of the silver owned in New Jersey during the eighteenth century bears the marks of New York and Philadelphia craftsmen.

The actual war years brought to New Jersey refugees who fled British occupation of the towns and cities where they worked. Silversmith Cary Dunn, who was made a freeman of New York in 1765, moved with his family to Morristown, New Jersey, when the British entered New York in 1776. He worked in New Jersey until the British evacuated New York in 1783. On the other hand, Charles Oliver Bruff worked as a silversmith in Elizabethtown from about 1750 until he moved to New York in 1762, remaining there throughout the British occupation until 1783 when, as a Loyalist refugee, he went to Shelburne, Nova Scotia, where he was working as late as 1787.

Postwar prosperity in New Jersey attracted increasing numbers of silversmiths, especially to Newark, New Brunswick, Princeton and Trenton, so that by the last decade of the century there was a silversmith and clockmaker in practically every town of any size, and the more populous centers supported three or four. During this time, refugees from the yellow fever epidemics in Philadelphia often fled to New Jersey. One of them, silversmith Abner Reeder, settled in Trenton where he was a leading silversmith and banker for more than a quarter of a century.

Judging from current availability and according to eighteenth century ledger books and inventories, spoons were made in greater quantities than any other type of object; not only were they signs of wealth, but they required only small amounts of silver and served as solitary eating utensils when knives and forks were unavailable. Spoons and forks made from a rectangular block of silver called a blank were comparatively simple to make. More challenging to the craftsman were the pear-shaped tea-, coffee-, and creampots, the sugar bowls, footed salts, tankards, mugs, two-handled cups, basins, bowls, porringers, candlesticks and many other items that enhanced the eighteenth century home. (See Figure 3, p. 24.)

Before the close of the century, the introduction of rolled sheet silver led to changes in technique which greatly facilitated the silversmith's work. Instead of painstakingly raising a teapot from a single piece of metal, he could cut out an appropriate pattern, shape it over a stake, and solder the single vertical joint. This method suited the straight-sided shapes of the classical designs of the Federal period.

Knowledge of pewterers in New Jersey is virtually nonexistent. Although Carl Williams indicates that some pewterers worked in

Burlington and Trenton before 1800, the only positive reference is to Francis Bassett II who advertised his presence at Horse Neck (now Caldwell) in *The New-Jersey Journal*, summer 1780. Having come to New Jersey when the British took over New York, Bassett was working in Crane Town (present Montclair) in 1782. He probably returned to New York after the British evacuation of that city in November 1783.

Because the physical properties of pewter, composed largely of tin with varying amounts of copper and lead, differ considerably from those of silver, pewter objects were cast in copper or brass molds and finished on a lathe. For this reason, although pewter and silver objects were made in similar forms, pewter pieces lacked the refined elegance of their more costly silver counterparts.

Architecture

The great fire that virtually destroyed London in 1666 made way for Sir Christopher Wren to rebuild the city in an architectural style that eighteenth century American builder-carpenters adapted, on a relatively diminished scale, to the colonial craftsman's ability and to the materials at hand.

The drawings of Andrea Palladio, Italian architect of the sixteenth century, inspired Wren's designs which, unlike the rambling informality that preceded, express controlled balance and symmetry. High arched windows and doorways with fanlights and flanking carved pilasters serve as central focal points; molded bricks, decorative cornices, pediments and roof balustrades emphasize structural details of Georgian architecture, a style named for the three kings who ruled England during most of the eighteenth century.

Philadelphia carpenter-builder Robert Smith (there were no "architects" in America in the mid-eighteenth century) had access to a number of London design books when he planned the new building — Nassau Hall — for the College of New Jersey (now Princeton University) in 1754. John Notman changed the original design considerably when he restored the building after it burned in 1855, but the steps leading to the central doorway in the slightly protruding pavillion and the three tiers of windows with keystone lintels (seventy-two on the main facade alone) retain an essentially Georgian appearance. No doubt many a Princeton student would agree

that Smith showed real empathy for the student's life when he adapted the design of Nassau Hall to the Walnut Street jail he built in Philadelphia twenty years later.

The Dey Mansion, west of Paterson in what is now Passaic County, illustrates the flexibility of eighteenth century classical architecture and its adaptability to regional ethnic traditions. This mid-eighteenth century upper class residence retains the gambrel roof and flaring eave of many earlier Jersey Dutch houses, but the balance and formality of the Georgian period are evident in the central doorway and symmetrically placed windows of the five-bay main facade, framed by sandstone quoins set in a brick wall. No doubt for reasons of economy, the materials were used in reverse on the side and rear facades where brick quoins are set in stone walls.

The frame mansion that Colonel Jacob Ford, Jr., built in Morristown in 1774 expresses a more mature form of classical architecture with Ionic pilasters flanking the palladian doorway, a hip roof and molded cornice with carved modillions which emphasize the horizontal lines of the building and evoke a feeling of solid comfort. Colonel Ford's father conveyed two Morris County ironworks to his son in about 1773; in addition, the colonel owned a powder mill on the Whippany River north of Morristown. He was active during the war and participated in the battle of Trenton before dying of pneumonia in January 1777. His younger brother, Judge Gabriel H. Ford, justice of the supreme court of New Jersey, married Frances Gualdo who had become the ward of Philadelphia cabinet-maker Benjamin Randolph following the death of her father at Randolph's home in 1772. After their marriage in 1790, Frances and Gabriel moved into the mansion that had served as headquarters to General Washington during the second encampment of the Continental army at Morristown in the winter of 1779-1780.

Painting

Without the aid of British publications for their design ideas or master craftsmen to teach them, the early painters in America relied almost entirely on their own inspiration. Until the establishment in the 1760s of Benjamin West's school in London, few aspiring American artists benefited from professional training. Those who served apprenticeships learned the trades of house and sign painting, heraldry, japanning (lacquer decoration on furniture) and



Figure 4. William Dunlap painted The Dunlap Family portrait in 1788(see text, p. 30). Courtesy The New-York Historical Society.

guilding . During most of the eighteenth century, the major source of information about art in Europe was the mezzotint engraving imported in quantity for use as inexpensive wall decoration. Influenced also by the designs on firebacks and stoveplates, early American artists (or limners) painted in the same flat two-dimensional style inherent to the engravings and decorative iron castings. The limners emphasized outline and pattern and used simple color schemes.

John Wollaston and Joseph Blackburn introduced rococo painting to America when they came from England about 1750. Theirs was a livelier and more decorative style of painting than the baroque which preceded. Although artists were painting city views, landscapes, and genre scenes (scenes of everyday life) as well as historical and imaginative views, a stiff and somber form of portrait painting prevailed in the colonies at midcentury. It followed the baroque tradition brought from Europe in the seventeenth

century and established in New Jersey by John Watson, a Scottish immigrant who settled in Perth Amboy by 1714. Watson's much younger contemporary, Mrs. Patience Lovell Wright of Bordentown, introduced the art of wax sculpture to New Jersey in the 1750s. She began modeling portraits, first in bread dough for the amusement of her children, and later in wax. After the death of her yeoman husband in 1769, a year after Watson's death, Mrs. Wright moved to New York and, subsequently, to London.

For the remainder of the century, New Jersey was peculiarly devoid of artists. However, lawyer, statesman, author, and musician Francis Hopkinson, who lived in Bordentown during Mrs. Wright's last year or so of residency there, drew a number of pastel portraits. A friend of Benjamin West, he may have studied with the artist in London for a brief period. Hopkinson designed, or at least aided in the design of the Great Seal of New Jersey, and in 1777 he designed the American flag.

Although some of New Jersey's better-known citizens sat for their portraits in Philadelphia or New York, more often the wealthy and socially prominent, who could afford so frivolous an expenditure, commissioned portraits from itinerant painters. As untrained professionals, they may have begun their careers as sign or house painters.

Dr. William Bryant of Trenton may have sat for Matthew Pratt while in Philadelphia to attend meetings of the American Philosophical Society or to visit his niece. The Bryant portrait that hangs in the Trent House (located on Warren Street, Trenton) is attributed to Pratt. However, Annis Boudinot Stockton may well have sat at Morven for her portrait (now owned by Princeton University) by an itinerant painter traveling through Princeton. The pastels of the awesome Dr. Lawrence Vanderveer, with set mouth and furrowed brow (owned by The Medical Society of New Jersey and by Princeton University), were surely drawn by untrained artisans who roamed the country in search of commissions. As Edgar P. Richardson says in *Art in America*, "The eighteenth century was an age of wandering artists. The motive of their travels was not a search for inspiration ... but a search for patrons and commissions."

Although there seems to have been an army of painters throughout the country eager to immortalize George Washington, most are unknown to us today, and few would be called "artists." Among them Joseph, the son of Patience Wright, spent his youth

in Bordentown, studied painting in London and France, and returned to America in 1783. That autumn he arrived at Rocky Hill, just north of Princeton, with a letter for General Washington from Benjamin Franklin. (During the war years when Franklin was in Paris, Patience Wright had served as a spy for him in London.) While at Rocky Hill, Wright painted both General and Mrs. Washington. Commissioned to take a plaster cast of the general's face for a European sculptor, Wright proceeded to carry out the disagreeable task. Writing in 1834, William Dunlap explained that as the artist was removing the hardened mask, "in his anxiety and trepidation, probably hurrying to release the general from thralldom, he let it fall and it was dashed to pieces on the floor." Washington would not agree to a second try, so the matter was postponed until Franklin brought Jean Antoin Houdon from Paris in 1785. Houdon took a life cast at Mount Vernon in October and was back in Paris by the end of the year, so the bust probably was modeled in France.

In 1783 William Dunlap was a seventeen-year-old youth. A native of Perth Amboy, at the age of eleven he moved with his family to New York. Dunlap met Joseph Wright at Rocky Hill where he too availed himself of the opportunity to paint portraits of the Washingtons. The following year Dunlap went to London to study painting with Benjamin West. When he returned after three years — "wasted in frivolous living" — he settled in his hometown, Perth Amboy, next door to Joseph Wright's studio. (See Figure 4, p. 30.) Soon, discouraged by his inability as an artist, Dunlap went into business with his merchant father. After trying his hand at poetry and speculation in the theater, which bankrupted him by 1805, he turned his attention to painting miniatures. Intermittently during the next twenty-five years, he traveled up and down the coast painting miniatures, and later portraits in oil. To raise money to support his family, Dunlap painted large religious canvases which, like Thomas Sully, Rembrandt Peale and others, he exhibited throughout the East. He is probably best known, however, for his history of the American theater and his later history of design in America (published in 1832 and 1834), both of which record enlightening and entertaining information that would otherwise have been lost.

Benjamin West's early interest in historical painting and his studies in Rome prior to settling in London contributed to the important role he played in the development of the neoclassical style of painting. By the close of the eighteenth century, painting in

America had taken many new directions: still life and genre painting competed with the portraiture of the baroque and rococo periods; and, following the success of America's second stand for independence in the War of 1812, public commissions for historical murals and portraits of American heroes gained wide popularity.

The revolutionary war witnessed the transition of the fledgling arts in America from the flamboyant rococo of the Georgian-Chippendale period to the restrained classicism of the Federal era. The country entered the battle as an irascible, outraged dependent and emerged as a self-conscious new nation. As the young republic gathered strength, the people developed a unique American style which they expressed in their arts and in their society. As they struggled to define a national culture, they borrowed from the Old World and adapted to the new environment. Gradually a new and truly American culture evolved, in which the arts played a significant role.

For Further Reading

Perhaps the most comprehensive study of craftsmen in eighteenth century America is *The Colonial Craftsman* by Carl Bridenbaugh (New York: New York University Press, 1950). Since 1961 a paperback edition has been available from the University of Chicago Press. Bridenbaugh looks separately at the rural craftsmen of the North and South and at urban craftsmen as workers and as citizens. Firsthand accounts of colonial craftsmen in New Jersey appear in newspaper extracts published in several volumes of the first and second series of the *New Jersey Archives* (Various Places: State of New Jersey, 1880-1949).

The best sources on early ceramics in New Jersey are catalogs of exhibitions held at The Newark Museum and the New Jersey State Museum. Newark's 1947 exhibition, *The Pottery and Porcelain of New Jersey, 1688-1900*, was followed in 1956 by *Early Arts of New Jersey: The Potter's Art, c. 1680- c. 1900* at the State Museum. The former catalog is fairly well illustrated and both offer important information. In 1972 the State Museum published *New Jersey Pottery to 1840*, which includes updated information lacking in the earlier, more extensive publications.

For information about the technical aspects of manufacturing glass see Helen and George S. McKearin, *Two Hundred Years of American Blown Glass* (Garden City, N.Y.: Doubleday, 1950).

Another useful book covering more than two centuries of glass-making in New Jersey is Adeline Pepper's *The Glass Gaffers of New Jersey* (New York: Charles Scribner's Sons, 1971).

One of the first chroniclers of New Jersey's early ironworks was Charles S. Boyer, who wrote *Early Forges & Furnaces in New Jersey* (Philadelphia: University of Pennsylvania Press, 1931). A decade later Henry C. Mercer compiled *The Bible in Iron* (Doylestown, Pa.: Bucks County Historical Society, 1941), a collection of notes relating to his outstanding collection of iron firebacks and stove plates housed in the Mercer Museum, Doylestown, Pennsylvania. Arthur D. Pierce's *Iron in the Pines* (New Brunswick: Rutgers University Press, 1957) tells the story of the bog iron industry in New Jersey. The story of iron mining in northern New Jersey is available in James M. Ransom's book, *Vanishing Ironworks of the Ramapos* (New Brunswick: Rutgers University Press, 1966). Useful for understanding the tools of the ironworker is H.R. Bradley Smith's booklet, *Blacksmiths' and Farriers' Tools at Shelburne Museum*, Shelburne Museum Pamphlet Series, No. 7; (Shelburne, Vt.: The Shelburne Museum, Inc., 1966).

Henry Francis du Pont's collection of American decorative arts, at the Henry Francis du Pont Winterthur Museum, Winterthur, Delaware, has occasioned much scholarly research in the field of American furniture. Joseph Downs, the first curator of du Pont's collection, wrote *American Furniture, Queen Anne and Chippendale Periods* (New York: MacMillan Co., 1952), in which more than three hundred objects from the collection are described and illustrated. Charles F. Montgomery wrote the companion to Mr. Downs's book, *American Furniture, The Federal Period*, and illustrated nearly five hundred objects (New York: Viking Press, 1966). When the latter book was published so many resources had become available—wood identification methods, previously unknown manuscripts and documents, pieces of furniture, and new publications—that Montgomery was able to offer invaluable insight into the business of cabinetmaking in late eighteenth and early nineteenth century America. Another useful Winterthur publication is Charles Hummel's article, "English Tools in America, the Evidence of the Dominys," in *Winterthur Portfolio II* (Winterthur, Del.: Henry Francis du Pont Winterthur Museum, 1965). For further information about cabinetmakers' and other woodworking craftsmens' tools, see Frank H. Wildung, (comp.), *Woodworking Tools at Shelburne*

Museum (Shelburne Museum Pamphlet Series, No. 3: Shelburne, Vt.: Shelburne Museum, 1957).

For sources specific to New Jersey cabinetmakers, see the alphabetical listing at the back of *Early Furniture Made in New Jersey, 1690-1870*, the catalog of an exhibition at the Newark Museum, October 10, 1958—January 11, 1959 (Newark: Newark Museum Association, 1958). See also William E. Drost's book, *Clocks and Watches of New Jersey* (Elizabeth: Engineering Publishers, 1966), which offers an alphabetical listing of clockmakers who worked in New Jersey from 1710 to 1966.

Carl M. Williams presents a biographical listing by town of *Silversmiths of New Jersey, 1700-1825* (Philadelphia: G.S. MacManus Co., 1949), an extremely useful book in need of updating. The most complete study of American pewterers and their work is Ledlie I. Laughlin's *Pewter in America, Its Makers and Their Marks*. Published originally in two volumes in 1940, the books were reprinted in one volume (Barre, Mass.: Barre Publishers, 1969), and in 1971 volume three followed with supplementary information accumulated since the 1940 publication.

For an understanding of the silversmith's and pewterer's crafts, see the well and clearly illustrated books by Henry J. Kauffman: *The American Pewterer, His Techniques & His Products* (Camden: T. Nelson, 1970) and *The Colonial Silversmith, His Techniques & His Products* (Camden: T. Nelson, 1969).

Hugh Morrison's *Early American Architecture* (New York: Oxford University Press, 1952) continues as a standard source on architecture in America from the first colonial settlements to the federal period. In volume six of *The New Jersey Historical Series*, Alan Gowans gives an all-encompassing but all-too-cursory picture of *Architecture in New Jersey* (Princeton: D. Van Nostrand Co., 1964) from earliest settlement to the twentieth century. W. Jay Mills wrote more of the history of the people who inhabited the *Historic Houses of New Jersey* (Philadelphia: J.B. Lippincott, Co., 1902) than about the architecture. Also useful is *Pre-Revolutionary Dutch Houses and Families in Northern New Jersey and Southern New York* by Rosalie Fellows Bailey (New York: William Morrow and Co., 1936) and unabridged, in paper (New York: Dover Press, 1968). More recently Sibyl McC. Groff has written a guide to homes open to the public, *New Jersey's Historic Houses* (Cranbury, N.J.: A.S. Barnes & Co., 1971), which includes illustrations, information

about the early inhabitants and the origins of the names of some of the houses and lists the significant furnishings.

A standard reference on American art, Edgar P. Richardson's *Painting in America* (New York: Thomas Y. Crowell, 1956), offers more than the necessary information in a readable style. William H. Gerds, Jr., deals specifically with *Painting and Sculpture in New Jersey* (Princeton: D. Van Nostrand Co., 1964) in volume twenty-four of the New Jersey Historical Series. Like the other volumes in the series, Gerds's book is a broad survey, but it contains a useful bibliography of art in New Jersey. William Dunlap's writings on art and artists in the eighteenth and early nineteenth centuries were published originally in New York in 1834 and reprinted in three volumes, *History of the Rise and Progress of the Arts of Design in the United States* (New York: Benjamin Blom, 1965).

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