

Tinton Manor: The Iron Works

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APPROXIMATELY a dozen ironworks were built in seventeenth century North America, and only one in all the area south of New England is known actually to have reached the production stage. It was situated in New Jersey at Tinton Falls, near Red Bank in Monmouth County.

The Tinton Iron Works was unique for a number of reasons. Not only was it early in the region, but it was well under construction within ten years of the first European settlement of Monmouth County. It represented the largest capital investment in any ironworks before 1700, and it probably was the first one to be equipped with machinery made in the colonies.

All the North American iron enterprises of the seventeenth and eighteenth centuries, and even of the first half of the nineteenth century, were semi-feudal in organization, labor relations, and economics, and Tinton Iron Works was no exception. One authority¹ has given the term "iron plantations" to the early works, and the suggestion of a dual nature contained in this title is apt. They were essentially combined manufacturing and agricultural enterprises that utilized slave or indentured labor, or a combination of the two under hired supervision. They were generally isolated and self-contained establishments. They produced their own food, and the company owned stores and services, and sometimes church and school as well.

The complex modern distribution system, with each step frequently handled by a different company, had not yet evolved. Many of the early ironworks operated their own ships or boats for the collection of raw materials and the distribution of the finished product. They called directly at the wharves of the

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¹ARTHUR C. Bining, *Pennsylvania Iron Manufacture in the Eighteenth Century* (Harrisburg, 1938).

settlers, whose plantations were largely confined to the borders of navigable waterways by the poor development of overland transportation. From iron ore to retail sale, the whole procedure was frequently under one entrepreneur.

In some particulars Tinton Iron Works was typical of this generality. In others it was definitely atypical. Few business enterprises have gone through as many changes in sovereignty when newly established as were involved at Tinton Iron Works. It was the only ironworks in New Jersey to be a legally recognized manor, complete with a petty civil court, although without subservient landholdings.

It was typical in enjoying the status of a strategic industry, with its workmen exempted from military service other than community defense in time of war. Its importance to the province was recognized in land subsidies and tax exemptions that had unique features. As with all other iron enterprises before 1700, its raw material was bog iron ore derived from the swamps and streams of the vicinity. Its fuel was charcoal.

It was a foregone conclusion on both sides of the Atlantic that New Netherland would capitulate to the English in 1664. Charles II anticipated the surrender by granting the territory to "our" brother, James, Duke of York and Albany, who then sent out an expedition under Richard Nicolls to see that there actually was a surrender.² A group of townspeople from Gravesend, Long Island, also anticipating surrender, sailed across New York Bay. They purchased land from the Indians near the Shrewsbury River in defiance of Dutch authority, then returned home to await the coming of the English.³

One of Richard Nicolls' first acts as victorious governor was to confirm existing land titles, and to issue a series of new patents, expanding the area of settlement in the middle colonies. He issued two patents for the New Jersey area, one known as the Elizabeth-Town Patent, the other the Monmouth Patent.

²Charles M. Andrews, *Colonial Self-Government, 1652-1689* (New York, 1904), p. 104. Both Berkeley and Carteret ". . . were deeply implicated in the plot for the seizure of New Netherland, and received a part of the conquered territory as their share of the spoils."

³Langdon E. Morris, *History of the Monmouth Patent* (leaflet, n.p., 1930).

Among the settlers under the Monmouth Patent was one James Grover.⁴

Within a few years Grover discovered bog iron ore in the vicinity and proceeded to found an ironworks. There were already a number of such works in New England and two brothers, James and Henry Leonard,⁵ had had a hand in building most of them. In 1674,⁶ Henry and his sons, including Samuel Leonard, joined Grover at Tinton Falls, while James remained in New England. The role of the Leonards at Tinton Falls is obscure, but it is likely that they were forge carpenters and millwrights.

The building of the ironworks evidently required more capital than James Grover and his unknown associates had anticipated, for shortly after the coming of the Leonards, Grover mortgaged "an equal great part" interest in the works.⁷ Cornelis Steenwyck, merchant and "second richest man" in New York, held the mortgage.⁸ The stringency of its terms suggests that the works were nearly complete, or Grover would not have risked foreclosure.

A year previous to the mortgage, a man whose career was

⁴James Grover figures in the early history of Monmouth County in a number of ways. Like many an early figure of prominence, he began as a tavern-keeper. He held a number of municipal and county offices, and was one of the negotiators with the Proprietors in 1685 for settlement of the rights of Nicolls patentees. *Minutes of the Board of Proprietors of the Eastern Division of New Jersey from 1685 to 1705* (Perth Amboy, 1949), pp. 43-45 (hereafter cited as *M.E.N.J.P.*, 1685-1705).

⁵The Leonards were originally from Pontypool, Monmouthshire, a Welsh border county. An iron-working center since 1588, its greatest development was in the eighteenth century. The Leonards settled at Taunton, Massachusetts, in 1652. William R. Deane, *A Genealogical Memoir of the Leonard Family* (Boston, 1851).

⁶*Ibid.*

⁷In addition to the half interest in the ironworks, twenty-five cattle "also at Never-sinks" were subject to seizure and sale without "protest at law" and the surplus proceeds *only* were returnable to Grover if the terms of the loan weren't met. James Grover mortgage to Cornelis Steenwyck, Dec. 8, 1674, Tinton Iron Works Papers, Monmouth County Historical Association, Freehold, N.J. (hereafter MCHA).

⁸Cornelis Steenwyck (d. 1684) was born in Holland, probably at Haarlem. He came to New Amsterdam in 1651 as mate of a trading vessel, and became the second richest man in New York, with an estate appraised at fifty thousand florins and exceeded only by that of Frederick Philipse. He was reputed "best dressed, most polite and most popular man in New Amsterdam." His associations with Lewis Morris (*B*) were close. Although active and an officer-holder under both Dutch and English, he was no opportunist, steadfastly championing the rights of the Dutch settlers. On one occasion he was jailed for his opposition to an action which he considered prejudicial to their rights. The *Dictionary of American Biography* has a more complete sketch (hereafter *D.A.B.*).

soon interwoven with that of Cornelis Steenwyck came to New York to assume the trusteeship of his orphaned nephew's estate. Both uncle and nephew were named Lewis Morris, and both were connected with Tinton Falls and Monmouth County activities. To distinguish between them, the uncle will be designated on the following pages as Lewis Morris (*B*), for "of Barbados,"⁹ and the nephew as Lewis Morris (*g*), since he afterwards became governor of New Jersey.¹⁰

Lewis Morris (*B*) arrived at New York in 1673, when the Dutch were again in control, and found his brother's effects inadvertently scattered in the confusion that accompanied the Dutch re-entrance.¹¹ Morris had been a colonel in the British army and his moves were suspiciously watched by the Dutch, who expected British reprisals, but he soon won their confidence.¹² He served with Steenwyck as an intermediary for the peaceful surrender to the Dutch of the English towns at the east end of Long Island.¹³ He was also allowed to assume the management of his nephew's inheritance, and to reclaim most of the appurtenances.¹⁴

Presumably it was through the acquaintance with Steenwyck that Lewis Morris (*B*) learned of James Grover's ironworks in New Jersey. At any rate, in 1675 he purchased Grover's half interest.¹⁵ The condition of the establishment at the time is not clear, but it most likely consisted of a single fire forge, in a partially completed building, near what is now the west end of the bridge at Tinton Falls.

Prior to this purchase, Lewis Morris (*B*) had received as-

⁹Lewis Morris of Barbados is ignored by *D.A.B.*, which is the reason for the writer's use of the mnemonic "(*B*)" and designation of the nephew as "(*g*)" since most genealogies and the *D.A.B.* designate him Lewis Morris I, consigning the uncle to an undeserved oblivion. One excellent source is a footnote by E. B. O'Callaghan, *Documents Relating to the Colonial History of the State of New York*, II, 619 (hereafter *N.Y. Col. Doc.*).

¹⁰Gordon B. Turner is the author of an article on Lewis Morris (*g*) in the New Jersey Historical Society *Proceedings* (hereafter *N.J.H.S. Proc.*) and is preparing a biography.

¹¹*N.Y. Col. Doc.*, II, 631-32.

¹²*Ibid.*, *passim*.

¹³*Ibid.*, p. 645.

¹⁴*Ibid.*, p. 664.

¹⁵James Grover deed to Lewis Morris (*B*), Dec. 29, 1675, Tinton Iron Works Papers, MCHA.

surance from the governor of New Jersey, Philip Carteret, that the proprietors of the province were willing to grant certain privileges and subsidies to foster the development.¹⁶

The matter of tax exemption required the assent of the General Assembly¹⁷ and that body agreed that, "as touching upon Colonel Morris request, the Deputies are willing the lands and works belonging properly to the Iron Works, shall or may be rate free for seven years, excepting in extraordinary cases, as war or the like."¹⁸

The list of proposals was sent to England for the consideration of Sir George Carteret (uncle of the governor), who had become, by the Quintipartite Deed and sale of West Jersey, sole proprietor of East Jersey.¹⁹ The tax concession was allowed, and its limits were defined. Military exemption in time of war was granted the workmen, except for mustering and drilling under their own officers (as appointed by the governor) and defense of the works and community if attacked. A petty civil court was established to try small causes, with no appeal under £5. The workmen were to be free from arrest for debt, but not from suit.²⁰

The "Concessions and Agreements" issued by Berkeley and Carteret in February, 1664/5, had provided for the introduction of manors as units of local government.²¹ No definition of their scope or authority was given. Tinton Manor was created in connection with the works, but it was a manor only in a limited sense compared with those of England or the Continent, or even elsewhere in America.²² A petty court had been provided for in the special privileges granted by Sir George Carteret, but it

¹⁶Proposals (contemporary copy) made by Col. Lewis Morris (B), Nov. 9, 1675, "for the encouragement of Iron Works at Nevysincks considered by Governor Carteret" (signed P. Carteret, Copia Vera, James Bollen, Secretary), Tinton Iron Works Papers, MCHA.

¹⁷Acts of the General Assembly, April 6, 1676, Aaron Leaming and Jacob Spicer, *The Grants, Concessions, and Original Constitutions of the Province of New Jersey* (2nd ed., Somerville, 1881), p. 16 (hereafter cited as Leaming and Spicer).

¹⁸Leaming and Spicer, p. 118.

¹⁹Donald L. Kemmerer, *Path to Freedom, The Struggle for Self-Government in Colonial New Jersey, 1703-1776* (Princeton, 1940), p. 6.

²⁰Sir George Carteret's grant of privileges for the Tinton Iron Works, May 1, 1677, Morris Papers, Rutgers University Library.

²¹Leaming and Spicer, p. 16.

²²Herbert Levy Osgood, *The American Colonies in the Seventeenth Century* (N.Y., 1904-07), II, 24-35.

was a very limited court of original jurisdiction, and not commensurate with the courts leet and courts baron of a "true" manor.²³ Also there were no subservient landholdings.

Tinton Manor did act as a local government unit when the Monmouth Court of Sessions directed that "the bridge over Swimming River be made new, at equal charge of the towns of Middletown and Shrewsbury and Tinton Manor," and appointed a supervisor from each.²⁴

In addition to the legal provisions and subsidies, the Tinton Iron Works was favored with generous grants of land.²⁵ Two parcels, a neck of 3540 acres between the fall river²⁶ and the Swimming River, and another tract of 150 acres between the Swimming and Hop rivers were special subsidies and not the customary grants of land to new settlers, which seldom exceeded three or four hundred acres.

When special "old settler" grants were made in Monmouth County to eradicate claims under the Nicolls Patent, in exchange for acceptance of the land terms of the proprietors,²⁷ a 500-acre tract was given to Tinton Manor because of claims accruing to Lewis Morris (B) as purchaser of several properties deriving title from the Nicolls Patent.²⁸

East of the fall river, 200 acres had been purchased from Bartholomew Applegate and 300 acres from Samuel Leonard.²⁹ Two minor purchases were also made, an ore tract of 100 acres in Mirie Bogg, about half a mile south of the falls, and a 60-acre meadow.³⁰ The total land owned by Tinton Manor at its peak amounted to 6200 acres.

²³No two manors were precisely alike, even in Europe.

²⁴Franklin Ellis, *History of Monmouth County, N.J.* (Phila., 1885), p. 31.

²⁵Extracts of deeds, 1676-1702, Tinton Iron Works Papers, MCHA; patents, Morris Papers, RUL.

²⁶Technically, this river is still unnamed. Although the names of the branches—Pine or Hockhockson are sometimes shown on modern maps, it is simply "the fall river" or "river with the falls."

²⁷Including acknowledgment of proprietary title to all land, and payment of quitrents to the Proprietors.

²⁸Return of survey (by George Keith), 500-acre tract east of fall river; and on same sheet a 500-acre "old settler" tract, 1685 (various dates), Morris Papers, RUL.

²⁹*Ibid.*, and individual bills of sale. The land papers are so complicated, a chart is deposited with the Morris Papers, RUL, and Tinton Iron Works Papers, MCHA.

³⁰Survey (certified copy signed John Barclay), 100-acre tract in Mirie Bogg, Tinton Iron Works Papers, MCHA.

This did not include the mineral rights, which extended from the Raritan River to the Whale Pond (now Lake Takanasse, Long Branch) and required only payment for damage to the property when exercised. Nor did it include the wood and mineral rights on Henry Leonard's land, where compensation was "as shall be judged ffit to be payed by 3 honist Naibors indifferently chossen."³²

In seven years of active construction and operation, £8680 was invested in Tinton Iron Works from 1675 to 1683.³³ The single-hammer forge was enlarged to a two-hammer finery and chafery,³⁴ and £100 was expended on the building of a blast furnace.³⁵ Grist mills were built, and buildings were erected for the housing of workmen and works.

The associates of Lewis Morris (*B*) in the Tinton Iron Works have not been identified, but from the accounts it is obvious that the Leonards, James Grover, Richard Hartshorne, and Richard Gardiner were most active, and possibly were investors as well.

Henry Leonard, who was nearly sixty at the time he came to Tinton, does not seem to have taken much of a part in the works.³⁶ His son Samuel Leonard³⁷ is mentioned frequently in

³¹Extracts of deeds. (See note 25 for full reference.)

³²Henry Leonard conveyance of mineral and wood rights to Lewis Morris (*B*) and the Iron Works Company, 5th 2nd mo. 1676, Tinton Iron Works Papers, MCHA.

³³Accounts, Tinton Iron Works Papers, MCHA.

³⁴A refinery forge (finery) produced anchonics—"flat thick bars with a knob on one end"—sometimes sold as such, but more often further forged from a chafery. (*Bining, op. cit.*) A forge was essentially a small furnace that heated iron until it was malleable and could be hammered.

³⁵A blast furnace, the largest of all iron furnaces, actually smelted the ore, which collected in a pool at the bottom. Periodically the liquid metal was drained and run off into sand moulds. A bloomery was a smaller furnace that generated insufficient heat to melt the iron, and produced instead a molten mass called a "loop" or "bloom."

An account published by the Proprietors of East New Jersey in 1682 stated "there is already a smelting furnace and forge set up in this colony, where is made good iron, which is of great benefit to the country." Barber and Howe, *Historical Collections of the State of New Jersey* (Newark, 1853), p. 25.

³⁶Except for the conveyance cited in note 32.

³⁷"Henry's sons Samuel, Nathaniel and Thomas contracted to carry on the works at Rowley village after their father had left, but undoubtedly soon followed him to New Jersey." Deane, *op. cit.*, p. 5. This is confirmed by *M.E.N.J.P.*, 1685-1705, p. 65, where they are represented by Samuel Leonard in a petition for land "according to warrants made them on the 20th of July, 1676." Henry Leonard, Jr., and John Leonard are also mentioned. Upon proof of Indian purchase, new warrants for survey were issued to them, July 10, 1685. *Ibid.*, p. 75.

the accounts, and in the summary of expenditures drawn up in 1683 only James Grover received more money.³⁸

James Grover received £100. How much of this sum represented payment for the purchase of his establishment isn't indicated. However, that he remained active in the management of the works is evident from the coupling of his name with that of Samuel Leonard, Lewis Morris (B), or Richard Hartshorne in entries for the expense of trips to New York and New Haven,³⁹ in connection with setting up the enterprise. Much of the actual construction work was done by Grover, and a surviving copy of his account is the principal clue to the equipment installed.⁴⁰

The amounts charged to salary in this account were £170 for Samuel Leonard, £150 for Richard Hartshorne, £150 for Richard Gardiner⁴¹ and £100 jointly for William Waldrons,

³⁸Accounts, 1676-83, Tinton Iron Works Papers, MCHA.

³⁹The frequent references to New Haven in the accounts, and the way in which they are mentioned suggest that much of the equipment for Tinton was manufactured at the New Haven Iron Works. Certainly much cast iron came from there, although its form was not detailed.

The New Haven Iron Works Company was organized Feb. 13, 1656. The "undertakers" included John Winthrop, Jr. (the principal) and Stephen Goodyear, both represented by John Cooper, and all of New Haven. There was also a group from Branford with Jasper Crane as agent. In 1657 the works opened and Stephen Goodyear—who seems to have been the active manager—purchased a vessel at New Amsterdam capable of carrying twenty or thirty tons of bog ore.

The hearthstones sent from England by Goodyear proved unsatisfactory, and the importation of stones from Quarry-Hill near London was advocated as cheaper than the stones a Milford merchant could bring from the Isle of Wight.

"After more than six years of endeavor, the founder of the New Haven Colony was able to inform Winthrop that they had been blowing at the iron works, and produced five sows of iron, and would undertake the manufacture of pots on the morrow." Isabel McBeath Calder, *The New Haven Colony* (New Haven, 1934).

James Moore Swank, *The History of the Manufacture of Iron in All Ages* (2nd ed., Philadelphia, 1892), states that it was still in operation in 1669, and that it consisted of a blast furnace and a refinery forge. The Tinton Iron Works accounts show it in operation as late as 1681.

⁴⁰His occupation is given as "millwright" in the James Grover deed to Lewis Morris (B), Dec. 29, 1675, Tinton Iron Works Papers, MCHA. The copy of his account is on page 14 of the Tinton Iron Works accounts (note 28).

⁴¹Richard Gardiner was granted a warrant to lay out a hundred acres within the bounds of Middletown, Sept. 10, 1685. He was overseer for the Manor of Tinton on the joint road-and-bridge-building with the towns of Middletown and Shrewsbury. Ellis, *op. cit.*, p. 31. A court action of Oct. 9, 1692, referred to William Winter of Middletown, successor to Richard Gardiner, "lately deceased." *Ibid.*; *M.E.N.J.P.*, 1685-1705, p. 86; Monmouth County Minutes, 1688-1721 (miscellaneous unindexed bound MSS.), Monmouth County Court House, Freehold, N.J., p. 9.

Monkhouse, and Langley.⁴² Waldrons, Monkhouse, and Langley may have been foremen. The fact that they are lumped together suggests this, and they do not appear to have owned land.⁴³

The labor force for the works cannot be established accurately. The entry for "25 Mens Work 7 years at 20 £s p man p annum, £3500" presumably covered hired labor.⁴⁴ The slave labor force was "sixty or more . . . as early as 1680."⁴⁵ It is likely that the hired labor was construction labor, possibly assisted by the slaves.

The principal building was the "mill or forge." Undoubtedly this building contained the iron-working equipment. Here was the forge, probably both in the single-hammer⁴⁶ and two-hammer stages.⁴⁷ The blast furnace⁴⁸ that was added as the work progressed may have been incorporated into a wall of the building, as was later done at Atsion, N.J. Several entries for the purchase of cast iron at New Haven appear in the accounts, and it is quite likely that they represented equipment for the works, since the cost per pound was unusually high.⁴⁹

⁴²Accounts (see note 38).

⁴³There are no references in the *M.E.N.J.P., 1685-1705*, although this is not conclusive evidence.

⁴⁴Since £20 per annum was a good salary. As late as 1754, laborers at Ancram Works on Livingston Manor, N.Y., were paid from £40 to £60 per annum. Philip Carteret's salary as governor was only £50 per year, payable in country produce. Council and Assembly received 3s per diem while sitting. Taxes were 2s for each male head over fourteen years of age. Thomas Pownall, *A Topographical Description* [mid-eighteenth century] of the United States of America (Pittsburgh, 1949); Barber and Howe, *op. cit.*, p. 26n.

⁴⁵Henry S. Cooley, *A Study of Slavery in New Jersey* (Baltimore, 1896), p. 11, citation from J. P. Snell, *History of Sussex and Warren Counties, N.J.* (Phila., 1881). It also appears in Ellis, *op. cit.*, p. 587: "The iron-works were described in 1680 by Secretary Nichols, when speaking of Colonel Morris' plantation, as 'his iron-mills, his manours and divours other buildings for his servants and dependants, together with sixty or seventy Negroes about the mill and husbandry.'"

Diligent search has failed to unearth the original source for these quotations. Presumably Ellis referred to Mathias Nicolls, secretary of the Common Council of the City of New York, who in 1680 accompanied Governor Andros to England.

⁴⁶⁻⁴⁸See notes 34 and 35. Grover's account mentions finery, chafery, and furnace in those terms (see note 40).

⁴⁹Chartley Bloomery, at Taunton, Mass., built in 1698, has been regarded generally as the first ironworks to be equipped with machinery made in America. It was made by Taunton Bloomery, at Taunton, Mass., built in 1652, whose hammers and heavy machinery came from abroad. Taunton Bloomery made from twenty to thirty tons of iron annually, which brought the equivalent of one hundred dollars per ton. It continued in operation for over two hundred years until about 1865. Swank, *op. cit.*, pp. 14ff.

Grover's account specifically refers to "ye Corn Mill at Plantacon [plantation]"⁵⁰ and "ye Corn Mill at Iron Works," indicating that there were two grist mills.⁵¹ The latter undoubtedly was in the "mill or forge," since Grover's account lumps together work on the finery, chafery, and corn mill wheels.

A map of Tinton, made by Robert Vauquellin, has been preserved.⁵² On it is marked a "stone house." It is not clear whether this was a storage place for "stone," the bog iron ore which is still popularly called ironstone, or merely a house built of stone.

No coalhouse, for the storage of charcoal, is shown or mentioned, although conical piles labeled "cordwood and coles," are drawn on the map. This method of stacking cordwood is still in occasional use in New Jersey. The "coles" were charcoal, the universal fuel for iron-smelting and refining at this time. Since "coaling" the wood took from three to ten days, depending on the wood, weather, and skill of the collier,⁵³ charcoal houses were used in later works to provide a ready three months' supply.

"Ye Negro house & carpenter shop" and "ye white men's house" indicate the bunkhouse type of accommodations usually provided, in sharp contrast to the homes of the ironmasters in the later works. At Tinton Manor, in spite of the title, the manor house was quite unpretentious. Even fifty years after the development of the ironworks, when three additions had been made to it, the house was still modest in comparison with the homes of ironmasters elsewhere.

⁵⁰The word "plantation" requires qualification. The concept of outlying agricultural establishments to supply the home country, as the primary purpose of colonization, was so strong in British thinking that the body that dealt with the colonies was called the Lords of Trade and Plantations, and the parliamentary acts of the time are indexed under "plantations" not "colonies."

Special meaning has been given the word in America by the development of the "plantation system of agriculture" in the South, with its emphasis on slave labor and large landholdings. New Jersey at this time had true "plantations" in both senses.

See also Charles M. Andrews, *The Colonial Period of American History* (New Haven, 1938), particularly Vol. IV, "England's Commercial and Colonial Policy."

⁵¹"Corn," when not qualified by the word "Indian," meant grain of any kind, as it still does in England. The verb meant "to grind." *Dictionary of American English on Historical Principles* (4 vols., Chicago, 1938-44), and James A. H. Murray, ed., *New English Dictionary on Historical Principles* (10 vols., Oxford, 1888-1928).

⁵²Sketch map, "Landskip of Tinton & ye 1500 acres," Morris Papers, RUL.

⁵³Label, charcoal-making exhibit, Hopewell Village National Historic Site, near Birdsboro, Pa.

Accounts covering the years between 1676 and 1683 reveal a fascinating picture of Tinton Iron Works, as the entries are not confined to building materials. In an enterprise that *owned* a large part of its labor,⁵⁴ they necessarily deal with everything from knitting needles, curtains and valences, to shirts, shoes, and ladies' unmentionables.

The produce of the plantation was supplemented with purchases of salt, butter and cheese, and sugar.⁵⁵ Molasses and rum were purchased by the barrel, month after month. The animal husbandry of the plantation was apparently developing at this stage, as the last large purchase of beef and dairy goods was in 1679.

Little can be said about products. They might be inferred from what is known of other works, but only facts for which there is local evidence have been included here. There is positive indication that the works actually produced, which takes the form of an account of "Goods in Shop," to which £376.9.3 was charged "till 29th 8br 83." Whether the production was during eight months only, or longer, is uncertain. It seems likely that this was an eight-month summary, since the total of "debts standing out" was "about 500 lbs."

The surviving accounts continue on until 1683, when a rough balance sheet was drawn up. What happened after that date is open to question. There is nothing to indicate definitely that

⁵⁴Oddly there are no entries for the purchase of slaves, although in addition to the references cited in note 45, the inventory of the estate of Lewis Morris (*B*) indicates that he owned over 130 slaves, although the distribution between Tinton Manor and the "plantation over against Harlem" (afterwards Morrisania) is not shown. The body of the will makes references to a number of them by name. Most of the will, and the inventory in full, are printed in Robert Bolton, *A History of the County of Westchester* (New York, 1848).

⁵⁵There is only one purchase of sugar in the entire account book. Evidently it was quite a luxury. In Barbados, at the time, currency was quoted in terms of Muscovado sugar, and "A General Acco'tt of the whole produce Made off from the Plantation This Year, 1677" (Morris Papers, RUL) is apparently an accounting for a Barbadian sugar plantation, possibly still owned by Lewis Morris (*B*), although according to O'Callaghan, in *N.Y. Col. Doc., loc. cit.*, he visited Barbados in 1675 "for the purpose of winding up his affairs." The entire account for "Muscovado Sugar, Claid Sugar, Refined Sugar, Rum, and Molasses" is reckoned in terms of Muscovado sugar for a grand total of 444,712 pounds.

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the works remained active,⁵⁶ and there is nothing to indicate definitely that iron manufacture ceased.⁵⁷ The preponderance of evidence, however, favors the theory that the works became inactive.

The investment of £8680 over a seven-year period, on an ironworks, in a land where the first few non-aboriginal settlers had arrived only ten years before, took a great deal of planning, political maneuvering, and good management. Whether the reward ever equaled the risk, may never be known.⁵⁸

⁵⁶The evidence suggesting continued activity is as follows: (a) There is a reference to "Col. Morris' Iron Works" in a warrant for survey, July 16, 1687, *M.E.N.J.P.*, 1685-1705, p. 161. (b) John Oldmixon, *History of the British Settlements in America* (publ. 1708, quoted in Salter and Beekman, *Old Times in Old Monmouth* [Frechold, 1887]): "Between this town and Middleton is an Iron Works, but we do not understand it has been any great Benefit to the Proprietors. Col. Morris is building a Church at the Falls . . ." Although Oldmixon was of sufficient stature as an historian to still warrant a two-paragraph essay in the *Encyclopaedia Britannica*, the probable weakness of his evidence is betrayed by the use of "understand." (c) A letter of Saml Dennis of Shrewsbury to Lewis Morris, July 9, 1708 (Morris Papers, RUL), informs him that he sent 45s 9d "for your Iron plate by Jos: Haviland Junr:." (d) Lewis Morris writes to John Morris, April 22, 1730 (Morris Papers, RUL): "You tell me of the mine Webley shewd you, and that its shallow, but you do not tell me how deep it lyes, nor where it is. You would do well to search it a little deeper; but if tis not in my land be secret in it."

⁵⁷There is also evidence suggesting that iron manufacture ceased. The quotation next above is the only reference in all the Morris Papers, RUL, that could be construed as referring to iron, and there is some doubt in regard to that, as the next paragraph implies that it was believed to be copper (although we know today that was geologically impossible in that part of the state). A few years later the Morris family was interested in the Rocky Hill Copper Mine, probably in Somerset County. (The fact that this mine is unreported in the comprehensive and competent study by Herbert P. Woodward, "Copper Mines and Mining in New Jersey" [Trenton, 1944], *Bull.* 57, *N. J. Dept. of Conservation and Development Geologic Series*, probably indicates that the entire documentary evidence is confined to the Morris Papers, RUL, in which are over one hundred pertinent items.) There is detailed reference to nearly every other aspect of Tinton Manor, but no mention of iron or the iron works in fifty years of correspondence. Not even the overseer's contract mentions these, although detailed in other respects. (Overseer's contract with William Clarke, Dec. 14, 1728, Morris Papers, RUL.) No mention of the iron works is made in a letter of Chief Justice Robert Morris to the Earl of Stirling, describing a British raid near Shrewsbury, dated May 5, 1779, at Trenton (Shrewsbury Folder, MCHA), although the letter is quite detailed on Tinton Falls. The letter is printed in *N.J.H.S. Proc.*, N.S., V (1920), p. 174.

⁵⁸Acknowledgment is due the history librarians, without whom no history would be written. My thanks especially to Miss Laura M. Flanders, Monmouth County Historical Association; Messrs. D. A. Sinclair and S. Sheppard, Rutgers University Library; Miss Marie Becker of the New York and Mrs. Maud H. Greene of the New Jersey historical societies who led me to the Morris Papers at Rutgers.