

THE WILLCOX PAPER MILL

(IVY MILLS)

1729 - 1866

BY JOSEPH WILLCOX

1897 :

REPRINTED FROM THE "RECORDS" OF THE AMERICAN CATHOLIC
HISTORICAL SOCIETY.

THE WILLCOX PAPER MILL (IVY MILLS),

1729-1866.

BY JOSEPH WILLCOX.

NOTE.—So many incidents of future historical interest are associated with the old Paper Mill, at Ivy Mills, that the writer has lately been induced to collect and to put on record, now, whatever data may be available at this late date; realizing the fact that, with each succeeding generation, the more difficult, and also the more incomplete, will be the undertaking of writing its history.

The few old books, letters and other papers, which could afford any information concerning the operations of the mill, have lately been examined. A few samples only of the many lots of watermarked bank-note and bond papers, made at the mill, have survived the ordeal of destruction. Even in the case of the operation of the mill, under the management of the writer, not one specimen remains, with one exception, of the various orders for watermarked bank-note papers made for foreign countries. Some of the letters and other papers, referred to, have lately been presented to the Historical Society of Pennsylvania, and have been bound in four volumes labeled "Willcox Papers." In the following incomplete history, references are made to some of these letters and other papers, by the designation of "Willcox Papers."

The writer takes this opportunity to express his indebtedness to Mr. John W. Jordan, of the Historical Society of Pennsylvania, for his valuable assistance in obtaining information from the books in the library of that Society; and also to Messrs. Alfred Sharpless and Gilbert Cope, of West Chester, for information obtained from the records in that town.

In a picturesque and fertile valley, the most widely spread among the hills of Concord, there flows a stream known as the West Branch of Chester Creek. Three miles or more above its junction with the main stream there

stands a paper-mill of former times, now idle and silent, awaiting the relentless destiny of ruin, that, in the progress of time, overhangs all the creations of human hands, which have served their purpose and outlived their usefulness.

In late years inclement frosts and tempestuous winds have already completed their destructive work among the old ivy vines, and stripped them from the stone walls over which they formerly spread their retentive branches, and appropriately supplied the motive for the name of Ivy Mills.

Among the first paper mills erected in America,* it was the last of its kind, and had persevered longest in the race of competition with more modern machinery, for manufacturing paper, at the time when it was abandoned as a hand-made paper-mill.

Early in the last century Thomas Willcox was attracted to this part of the valley, in Concord Township, Chester County, Pennsylvania, which was then covered almost wholly with primeval forests.†

His former home, in England, is believed to have been near Exeter, in Devonshire. In the church records, at Poltimore, two miles from Exeter, the name is frequently mentioned, as early as 1712, sometimes spelled Willcox, and at other times Wilcocks.

It is not known when Thomas Willcox first settled in Concord, but his name appeared among the list of taxables there in 1725.

In 1726 he and a man, named Thomas Brown, built a mill-dam on the west branch of Chester Creek, in Concord, and afterwards leased the land on which the dam was located. The following has been copied from the original paper, which is still preserved :‡

* It was probably the third paper-mill established in the colonies.

† Delaware County, in which Concord is now located, was formed in 1789.

‡ The original is in "Willcox Papers," vol. iv, p. 1.

"This Indenture made the tenth day of January anno Domini 1727 Between Joseph Nicklin of Concord in ye County of Chester & Province of Pennsylvania yeoman of ye one part, and Thomas Willcox Lawyer, & Thomas Brown yeoman both of ye same Town and County of ye other part, Witnesseth that ye said Joseph Nicklin hath & by these presents doth lease, farm & lett, unto ye said Thomas Willcox & Thomas Brown and to their heirs, Exrs, admirs, & assigns, a certain piece of land, situate lying and being in Concord & Joining to ye said Thomas Willcox & Thomas Browns Mill-dam containing by estimation Eight perches in length along ye said Dam site, & four perch broad from ye said Mill-Dam for the use of ye sd Mill-Dam, Yielding therefore yearly & for every year ye sum of one shilling of current lawful money of this province, for & during ye term & time that ye said Thomas Willcox & Thomas Brown their heirs, Exrs, admrs, or assigns shall have occasion for ye same, for ye use aforesaid." . . .

On August 4th, 1729, Thomas Willcox, having erected a paper-mill on his property, took Thomas Brown into partnership in the business of making and selling paper. In this agreement, which is still preserved, it was provided that Thomas Willcox, in consideration of his teaching the said Thomas Brown the art of paper-making, was to receive three-fifths of the profits and Thomas Brown two-fifths.* It is thus apparent that Thomas Willcox had learned the art of making paper before he came to America.

In compliance with this agreement Thomas Willcox conveyed to Thomas Brown a half interest in the mill and the two following pieces of adjacent land: One tract or parcel, lying in the Township of Concord, containing 200 acres, was "layd out on the 5th day of April, A. D. 1683, by Charles Ashcorn the then surveyor of the County of

* Copy in "*Willcox Papers*," vol. iv. p. 2.

Chester, unto Jeremiah Collet, rentor, at the yearly quitrent of one penny sterling per acre." * * * A brief abstract of the title is here given :

Jeremiah Collett	to	John Hannum,	200 acres	on	March 1st,	1686,
John Hannum	"	John Wickham	100	"	"	June 1st, 1688,
John Wickham	"	Thomas King	"	"	"	Dec. 1st, 1690,
Thomas King	"	Godwin Walter	"	"	"	_____
Godwin Walter	"	Thomas Willcox	74	"	"	March 27th, 1729.
Thomas Willcox	"	Thomas Brown,	one half interest	in	one acre	on
					August 4th,	1729.

The other tract of land included in the conveyance to Thomas Brown, is referred to as follows—"Whereas William Penn Esqr late Proprietary of the Province of Pennsylvania by his Patent bearing date July 15th 1684 did grant and confirm unto Nathaniel Park rentor a certain tract of land in the Township of Concord . . . containing 200 acres under the yearly quitrent of one penny sterling per acre." . . .

Nathaniel Park	sold to	William Clayton Jr	150 acres	on	12th mo. 10th, 1684,
William Clayton Jr	"	William Rowe	"	"	(on same date)
William Rowe	"	Thomas Moore & William Vestal	"	on	March 12th, 1694,
Thomas Moore & William Vestal	sold to	Morgan Jones	150	"	
Morgan Jones	"	Joseph Nicklin	"	"	
Joseph Nicklin	"	Daniel Ryans	74	"	July 20th, 1715,
Daniel Ryans	"	Nathaniel Newlin	"	"	Oct. 19th, 1720,
Nathaniel Newlin	"	Joshua Pennell	"	"	Jan 20th, 1724,
Joshua Pennell	sold to	Thomas Willcox	1 acre and 20 perches	"	May 20th 1720,
Thomas Willcox	to	Thomas Brown,	one half interest	in	one acre and 20 perches
					on
					August 4th, 1729.

The mill was located on the one-acre tract, and is referred to as follows, in the deed :

"The other of the s^d pieces or parcels of land to the s^d Mill belonging (being part of the first mentioned seventy-

four acres of land) contains one acre, and is two perches in breadth (viz) a perch eastward and a perch westward from the middle of the said mill races, the whole length of them in the s^d Thomas Willcox's land, and is four perches broad where the s^d mill stands, and also the one full equal undivided moiety or half part of all mill houses Headwears mill ponds mill pools mill Dams Banks streams Waters Watercourses Mill races Passages Easements profits advantages Hereditaments and appurtenances whatsoever to the s^d land mill and premises." . . .

The sum paid by Thomas Brown for the half interest in the mill was one hundred and fifty pounds.

Descendants of some of the land owners mentioned above, viz., John Hannum, Godwin Walter and Nathaniel Newlin, are still living and owning land in that vicinity.

On May 6th, 1732, Thomas Brown leased to Thomas Willcox his half interest in the mill and land, including the personal property in the mill, for the term of seven years, at the yearly rental of thirteen pounds.

The following is a copy of the list of the personal property included in the above-mentioned lease :*

"An indentured Schedule of the Vessels Tools and Implements by the annexed Indenture Demised—That is to say.

"A mortice and . . . mmers, a Vatt and Pott, two Stuff Tubbs, a Rag knife and Block, one press paper mould and a pair of Shop paper moulds, twenty-six fulling paper felts, Seventy-seven shop paper felts, two press paper Planks and a halfting plank, two Shop paper Planks, A Press and Rag wheel, a screw and Box, A Glazeing Engine, two pairing knives, two little pails with iron hoops, one Smal ads, two pairing frames—one pairing Bench, three cocks, two troughs, one winch, a halfting

* "Willcox Papers," vol. iv.

bench, two tressels, a Iron Barr, six post and Eighteen Rails for hanging of paper, one hundred polls for hanging paper, one pad, one pair of Stilliards, a Box for Paper Hanging stool, one hundred and sixty Tap pots, twenty cogs and three washers."

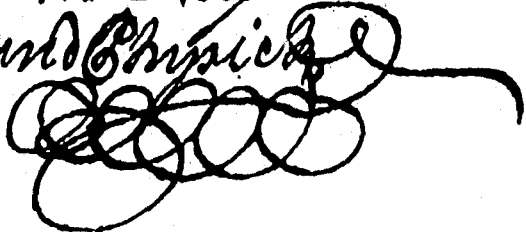
On January 23d, 1739, Thomas Brown reconveyed to Thomas Willcox his half interest in all the above-mentioned real estate. This, and all other land, which Thomas Willcox afterwards bought, in Concord, has been and is still owned by one of his descendants.

A copy of one of the receipts for quitrent is given on the next page.

This receipt refers to 100 acres of "purchase Land" which the writer is unable to account for. It was not a portion of the farm, on which the mansion house and mill were located; and the ownership of the adjacent lands is well known.

The next receipt was dated Philada., 30th Dec'r, 1766, for 27 years quitrent, and was signed by Edmund Physick "For the Hon. the Proprietaries." A copy of his signature is here reproduced.

For the Hon. the Proprietaries
Edmund Physick

A handwritten signature in cursive script, reading "Edmund Physick". The signature is written in dark ink and features a large, ornate flourish at the end, consisting of several overlapping loops.

Signature of EDMUND PHYSICK.

On November 27th, 1779, an Act of Assembly was passed for the discharge of quitrents; and an indemnity was paid to the heirs of William Penn.

Charter 18.th October. 1739.

Received of Thomas Wilson Seven pounds Seven shillings
and six pence Sterling by Pennsylvania money being for
(twenty three years quitrent of 100 acres of purchase and
65 acres of rent land in Concord. & to the last day
of March last. L

J^{no} Steel Reddy

Very little is known about the operations in the mill from its first establishment until 1775, when the first paper for the continental bills was made, excepting that Thomas Willcox made some of the paper that Benjamin Franklin used, and that he made some of the paper for the colonial bills. This is known from the statements which his son, Mark Willcox, has made; as no books of that early period have been preserved. It is believed that the first orders for the paper for the colonial and continental currency were received through the influence of Benjamin Franklin, a friend of Thomas Willcox, and a frequent visitor at his house.

In connection with this subject the following has been extracted from a letter which was written by James M. Willcox, the grandson of Thomas Willcox, and the father of the writer, addressed to Hon. Thomas Ewbank, Commissioner of Patents, and published in the U. S. Patent Report for the year 1850. The letter was written at the request of Mr. Ewbank.

"About the year 1725 my grandfather, who was brought up to the paper business in England, came over and settled where I now reside. I have documents to prove that, in 1732, he had erected a mill, and was manufacturing paper. The kind of paper then made was what is called fuller's pressboards: such as are now used by clothiers to press cloth. . . .

"As there were few books then published in the colonies, the progress of the paper manufacture was very slow, and so continued until about the dawn of the Revolution.

"My grandfather manufactured the paper for Dr. Franklin, who was publishing a newspaper in Philadelphia, and who was a frequent visitor at the mill.

"About the time my grandfather made the paper for the continental money he commenced making writing paper." . . .

The word "continental," in the above paragraph, was probably intended for *colonial* or *provincial*. In the opinion

of the present writer Thomas Willcox did not make any paper for the continental currency. When he wrote his will in January, 1772, which is on file in West Chester, he stated in it that he was then "advanced in years and weak of body, but of sound mind."

Although he owned the mill until he died in November, 1779, he probably retired from the management of it about the time when he wrote his will.*

It will be seen later that his son Mark Willcox, born in 1744, was operating the mill in 1776. He probably conducted it several years earlier, and made the paper for the first continental bills; the first issue of which was authorized by Congress on May 10th, 1775.†

In the *History of Delaware County*, by H. G. Ashmead, 1884, it is stated—"Up to the time of the Revolution the paper for the money of all the Colonies, from Massachusetts to the Carolinas, was manufactured by Thomas Willcox at his Ivy Mill; after which followed, out of the same mill, the paper for the Continental currency; and, after that, the paper for the Government issues made necessary by the war of 1812."‡

Benjamin Franklin frequently corresponded with Thomas Willcox. At one time, within the memory of a lady still living, there were many of Franklin's letters still preserved at the old homestead, in Concord; but they have been lost or destroyed.

When Thomas Willcox died, in 1779, he bequeathed his farm and paper-mill to his youngest son Mark Willcox; all the other sons having either died or moved from the ancestral home.

* In the *History of Printing in America*, 1874, it is stated that Thomas Willcox gave up his mill to his son Mark in 1767.

† *Journals of Congress*.

‡ The short history of Ivy Mills, published in Ashmead's *History*, was written by James M. Willcox, who died in 1895. It contains many personal recollections obtained from his father, of the same name, who died in 1851.

In 1776, a year of great anxiety, when our ports were blockaded by the enemy, and the importation of foreign paper rendered impracticable, an embarrassing need of that article prevailed throughout the country. More than half of the paper made in the colonies was, at that time, manufactured in the vicinity of Philadelphia;* and Congress, realizing the necessity of keeping the paper-mills in operation, on July 19th, 1776, resolved, "that the paper-makers in Pennsylvania be excused from proceeding with the associators to New Jersey."†

Action was also taken, concerning this subject, by the Pennsylvania Council of Safety. In that body, on August 9th, 1776, it was enacted that "The Honorable Congress having resolved that the Paper Makers in Pennsylvania be detained from Proceeding with the Associators to New Jersey, all officers of this State are Required to pay a strict regard to the same."‡

The following extracts from letters will show the scarcity of paper at that period of our history. From letter of John Adams dated Philadelphia April 15th, 1776.

"I send you," he writes, "now and then, a few sheets of paper: but this article is as scarce here as with you. I would send a quire if I could get a conveyance."|| . . .

On May 6th, 1776, Col. Gilman wrote to the New Hampshire Committee of Safety, "My officers here make a great complaint for the want of paper. They cannot receive the necessary orders, and make proper returns of their companies, for want of that article. By the best information I can get, the officers and commissioned officers in the Continental Army are allowed that article. I should be glad that the matter might be considered, and that you

* *Penna. Archives*, 2d Series, vol. 1, pp. 615-16.

† *Journals of Congress*.

‡ *Colonial Records*.

| *Amer. Archives* (4th Series), vol. v, p. 924.

would grant such relief as you in your wisdom may think best."*

In May, 1776, Nathan Sellers, then living in Darby Township, Delaware County, commenced the manufacture of moulds used in the process of paper-making. During the following Summer he was serving in the army in New Jersey, in Colonel Paschall's battalion.

The paper-makers, experiencing much difficulty in obtaining moulds, sent a petition to Congress praying "that Nathan Sellers may be ordered to return from service to make and prepare suitable moulds for carrying on the paper manufactory." This petition was presented on August 20th, 1776, and was favorably acted upon.† Nathan Sellers was discharged from service on August 30th, and returned to his home. He was then the only manufacturer of moulds in this country. After his return home from the army, the most urgent need for his services was in connection with the continental paper moulds, on which the paper was made for the continental currency.

On May 10th, 1775, the first issue of continental bills was authorized by Congress; and, on the following June 23d, Doctor Franklin and others were appointed a committee "to get the proper plates engraved, to provide paper and agree with printers to print the bills."‡

Another issue was authorized by Congress on November 29th, 1775; and the committee on the state of the treasury was directed to contract for proper paper, and for the printing of the bills. All these were printed on plain paper.

In September, 1776, it was deemed desirable for the Government to own the moulds, and to supply to the

* *Ibid.*, p. 1218.

† *Journals of Congress.*

‡ *Ibid.*

printers, for the future issues of its currency, a paper containing watermarks.

Nathan Sellers was instructed to make the needful moulds, and he soon proceeded with the work, in order that the necessities of the Government should be supplied first.

In connection with the manufacture of these moulds the subjoined memoranda have been supplied to the writer by Mr. Horace W. Sellers, a descendant of Nathan Sellers. They have been copied from the diary of the latter, which is still preserved.

- " 1776, Sep 24th Brassing Willcox Moulds &c.
- " " 25th ditto. Lettering Moulds.*
- " " 26th ditto
- " " 27th ditto
- " " 28th do
- " Oct 8th at Mark Willcox Moulds.
- " " 9th Made a frame for Continental Paper Mould.
- " " 12th at Continental Moulds
- " " 14th at Continental Moulds
- " " 15th to 24th at do
- " " 28th At Mark Willcox Mds
- " " 29th at do
- " " 30th at do
- " " 31st Drawing Wire & still at Moulds. M.
W. P. M.
- " Nov. 4th at M. Willcox Moulds
- " " 5th at do."

Mr. George Escol Sellers, now living at Chattanooga, Tennessee, published in the *American Machinist*, on

* This shows that the paper, made on these moulds, was watermarked with letters.

August 7th 1886, some reminiscences concerning this subject, that were related to him by his grandfather, Nathan Sellers, from which the following has been extracted :

"Nathan Sellers arrived home on September 1st, 1776. On the 3d, we find him at work on paper moulds, Brassing (this means new facing) and water-marking moulds for Willcox, of Ivy Mills, Chester County, Pa., now Delaware County, at that time making paper for Congress and for the Continental money.

"I have often listened with great interest to my grandfather's account of the straits the people were reduced to for want of paper during the revolutionary embargo. Fly-leaves were torn from printed works and blank leaves from account books for letter-writing.

"The stock of paper for printing continental money had run out, the English-made paper-moulds had worn out, and there was no wire in the country to reface them. This was the state of affairs when his honorable discharge from the army was granted by special act of Congress.

"The refacing the moulds for Willcox was undoubtedly for making paper on them for the Government."

An urgent necessity for more money was pressing in the autumn of 1776; and additional means for its supply became daily more imperative. On October 3d, in that year, it was resolved, in Congress, "that five millions of continental dollars be immediately borrowed for the use of the United States at the annual interest of four per cent. per annum. . . .

"That for the convenience of the lenders a loan office be established in each of the United States, and a Commissioner, to superintend such office be appointed by the said States respectively." * . . . This was the first loan authorized by the Continental Congress.

* *Journals of Congress*, vol. II.

Received in Philadelphia April 22^d 1777 of M^r. Mark
Wilcox. William Kings Receipt for Eight Bundles of Loan
Office Paper containing each Bundle two Thousand Sheets
in the whole Sixteen Thousand Sheets which the said
Kings received the 21st March 1777 into his waggon and
carried to Baltimore to be delivered to M^r. Isaac
Hessingburgh

John Gibson

Michael Hillegas was elected Treasurer, on July 29th, 1775, by the Continental Congress; and John Gibson was elected Auditor-General by Congress on April 9th, 1776.

Mark Willcox was authorized to make the paper for the loan-office certificates; and some of it was delivered, in March, 1777, to Mr. Hillegas through Mr. Gibson.

The original receipt of the Auditor General, in the hands of the writer, proves that one lot was loaded in a wagon at the mill and carried to Michael Hillegas in Baltimore, where Congress had been in session through the winter.

A reproduction of this receipt is given on the annexed page.

In the book "*A Statement of the Accounts of the United States*, by Robert Morris, Superintendent of Finances from 1781 to 1784," he claims credit for cash paid Mark Willcox, on December 26, 1782, for subsistence paper, \$133.30.

In the same book he claims credit for cash paid to Nathan Sellers \$103.30, on March 12, 1783, for a pair of Moulds and Box delivered to Mark Willcox for the use of the United States. It is not known to the writer what kind of paper was made on these moulds.

The currency, in which the transactions of the Revolution were carried on, was the Pennsylvania currency, in which seven shillings and sixpence were rated at a dollar.*

The paper for the currency and for the loan certificates, for the State of Pennsylvania, was also made by Mark Willcox.

The following letter, from the Pennsylvania Council of Safety, illustrated the embarrassment of the State of Pennsylvania, for the need of paper, in the year 1778. It is copied from *Pennsylvania Archives*, vol. vi, p. 355. Reference is also made to the mould on which the paper was made for the Pennsylvania bills.

* *The Financier and the Finances of the Revolution*. By W. G. Sumner, 1891, vol. II, p. 39.

" Council to Col. And'w Boyd.

" IN COUNCIL LANCASTER, March 11th, 1778.

" SIR :—Council are informed that there is a quantity of Paper at the paper mill belonging to Mr. Wilcocks in your County, this is an article so essentially necessary at this time of distress and difficulty when our ports are shut up that it is the opinion of Council it should be immediately seized and taken to some place of safety—Council therefore request you to undertake this business as it is probable that the enemy will counteract the design unless you conduct yourself with great secrecy and dispatch, as I am informed that Mr. Wilcocks is in the City of Philada. I think it necessary to caution you on this head, you are hereby authorized to call on the Waggon Master of your County for waggons as you may have occasion, and if you find a Guard of Militia to be necessary which I think is absolutely so, the powers with which you are invested they may easily be procured, but none of them should be intrusted with the secret unless it be the officer commanding the party—as it is intended that the owner shall be paid a reasonable price for the paper, you will please to leave a certificate with some of the family for the quantity you may take.

" It is the request of Council that you make particular enquiry respecting the conduct of the People that are carrying on the business at the paper mill, and what stock of raw materials is on hand, as it is hinted to Council that they are unfriendly to the American cause.* I am Sir

" Your very Humble Serv^t "

" P. S. Mr. Willcox has in his possession a mould for making paper belonging to this State, which I request you to bring away, it is marked with the word Pennsylvania

* The suggestion of unfriendliness to the American cause, on the part of Mark Willcox, was founded on a misapprehension. It may be seen elsewhere, in this paper, that, on June 23d, 1776, before the formal Declaration of Independence, the Provincial Conference, held in Philadelphia, appointed Mark Willcox one of the judges of election in Chester County, for Deputies to the Provincial Convention, to form a new government.

in twenty-four places, he did promise if the enemy came that way he would throw it into the Mill dam.

"Indorsed. To Col. Andrew Boyd sub-Lieut of Chester County."

A few sheets of the paper, undoubtedly made on the mould referred to in the above postscript, are now in the possession of the Historical Society of Pennsylvania. They were made of unbleached linen; and they illustrate the impracticability, at that time, of obtaining bleached material for the manufacture of strong paper. These sheets, though printed, have never been used. The watermark "PENS^YL VANIA" appears very conspicuously in this paper.*

The first bills of Pennsylvania, containing watermarks, were dated April 10th, 1777. Several sets of these bills were printed on the same kind of paper, containing twenty watermarks on each sheet. The denominations of Three Pence, Four Pence, Six Pence and Nine Pence were printed in sets of 24 notes on each sheet; but the denominations from one shilling to twenty shillings were printed in sets of 20 notes on each sheet; none of which contained more than 20 watermarks.

As no other issue of Pennsylvania state money was made until April 10th, 1781, the number of watermarks, mentioned in the letter to Col. Boyd, is undoubtedly an error. "Twenty-four" should have been twenty.

The paper taken by Col. Boyd, in March, 1778, from the mill, was not paid for until 1783, as will be observed by the following extracts from the Minutes of the Supreme Executive Council of Pennsylvania, in vol. 13, p. 536 of *Colonial Records*.

"March 19th 1783. An order was drawn on the Treasurer in favor of Mark Willcox for sixty-eight pounds specie, amount of his account for 48 Rms of writing paper seized in the County of Chester in the year 1777,† and afterwards made use of by Council."

* A specimen may be seen in *Willcox Papers*, vol. II, p. 1.

† This letter to Col. Boyd was dated in 1778.

Mr. Charles R. Hildeburn, of Philadelphia, lately presented to the writer a small sheet of paper, 6 x 7 inches in size, that undoubtedly was included in the lot of paper which Col. Boyd took from the mill in March, 1778, for the use of the Council of Safety. It contains the characteristic watermark of the Dove with Olive Branch, which was used by Mark Willcox. The contents of this paper are inserted here, as they show the official estimate of the amount of the depreciation of the continental money at the time when the paper was signed.

"In Council Philad^a September 8th 1780.

For £4,000. "SIR Pay to Honorable Jacob Arndt Esq^r or his order the amount of four thousand pounds Continental Money in State money at Sixty for one, in part of his pay as a Member of this Board for which he is to account."—

"To DAVID RITTENHOUSE Esquire "W^M MOORE
 "Treasurer" Vice President."

Outside of the writing on this sheet there is no margin of paper, as the most rigid economy was practised, in its use, at that period.

Reference is made, in the following, to the paper made for the loan certificates. From Minutes of the Supreme Executive Council of Pennsylvania.*

"April 22^d 1786. An order was drawn upon the Treasurer in favor of Mark Willcox for one hundred and twenty pounds, in full of his account for the paper furnished for the new loan certificates, according to the Comptrollers report."

The accounts of other papers, made by Mark Willcox, for the state of Pennsylvania, and other states, are known from the statements which he made to his son James and his wife. The old papers or records, at Harrisburg, pertaining to such transactions, are in an inaccessible condition for reference.

* *Colonial Records*, vol. xv, p. 10.

The paper for the currency of South Carolina was made by Mark Willcox ; but no evidence of it can be found in Columbia, the capital city of that state.* After the paper was made, the mould was delivered to the agent of South Carolina. The annexed is a copy of a receipt, in the possession of the writer, concerning that transaction.

" Recv^d Dec^r 7. 1785 of Mark Willcox one paper Mould for Making paper for the State of South Carolina."

" ROB^t GILCHRIST."

Robert Gilchrist appears to have been an agent also of the United States, in the matter of superintending the manufacture of paper for official use ; as may be seen from the following, which has been copied from a letter addressed to Nathan Sellers, and supplied by Mr. Horace W. Sellers.

" Board of Treasury, Nov 7th 1785

" Having been informed that you have been long employed in making Frames * for the manufacture of certificate and Bank Paper, We have to desire that you will make a paper Frame for manufacturing a Quantity of Bank Paper on account of the United States equally to the frame which will be delivered to you by Mr. Gilchrist who is employed by this Board to superintend the making of the frames and the manufacture of the paper." . . .

" SAMUEL OSGOOD

" WALTER LIVINGSTON "

The services of Nathan Sellers were in great demand for manufacturing moulds for paper makers ; and, in 1783, Mark Willcox was obliged to import some moulds from

*Moulds.

England by Captain Falconer ; the bill for which is still preserved, and of which the following is a copy. *

" London August 2 ^d 1783			
" Capt ⁿ Falconer Bot of Peter Wynne	£	s	d
" 1 Pair Double Fools Cap Paper Moulds	5.	5.	
" 1 Pair Double Post Do	5.
" Box for Do	..	2.	..
" 2 fine Brass wire washers 24 Inch by 20 is 6-8			
at 5.	I.	13.	4
" 2 Pieces coarse Do for back wires 6. 8. ^{ad} 1.9		11.	8
<hr/>			
	£	12.	12. 0

After the above date all the moulds purchased by Mark Willcox and his descendants, in the opinion of the writer, were made by Nathan Sellers and his successors until 1866, when the hand-made paper-making was abandoned at Ivy Mills. Nathan Sellers died in 1830. His friendship with Mark Willcox, commencing in 1776, was maintained until the death of the latter in 1827.

On " 5 mo. 5—1825," Nathan Sellers wrote, in his diary, after a visit to the house of Mark Willcox, in Concord,—
 "The pleasantest feeling arising from our journey was the gratification given to Judge Willcox. He is an acquaintance of near 50 years."

A few extracts from historical books are here given concerning the Ivy Mills.

"When the old Colonies, much more than a century ago, found themselves obliged to issue paper money, the currency paper used by all of them, was manufactured by Thomas Willcox, at Ivy Mills, and mostly printed in Philadelphia. No other currency-paper was used upon the Continent than that made at the old Ivy Mill. Many years later, in the necessities of the newly confederated States, the paper for all the Continental currency was sup-

* *Willcox Papers*, vol. iv, p. 10.

plied from the same establishment. There was no other possessing experience in the manufacture; and, during the Revolutionary war, paper could not be imported. Again, in the war of 1812, the Government was obliged to issue paper money, and again recourse was had to the old Ivy Mill to supply its necessities. At that time a distinctive paper, with colored silk shreds woven through it, was made for the Government's use; and the mill was guarded by the Government, to prevent the paper from leaking out into unlawful hands." *

In the book *A Chronology of Paper and Paper-Making*, (by J. Munsell, Albany, 1857,) the following is stated, in reference to the mill at Ivy Mills. "The owner is a Mr. Willcox, whose father made paper that was used in Franklin's printing-office. Paper is still made there by hand, by the same process as was in use a century ago."

In the *History of Printing in America*, (by Isaiah Thomas, L.L.D., 1874, vol. i.)† the following statements occur.

"The second establishment of a paper mill, erected in Pennsylvania or in British America, was built of brick on the west branch of Chester Creek, in Delaware County, twenty miles from Philadelphia, by Thomas Wilcox, who was born in England and there brought up to paper making.‡

"Wilcox came to America about the year 1712. He gave up his mill to his son Mark in 1767. Wilcox, the father, died November 11th, 1779, aged ninety.

"The first purchase of land that Thomas Wilcox made, for his mill seat, was from the proprietors of Pennsylvania.|| The additional piece, for his dam, he agreed for at one shilling sterling a year forever.

* *History of Chester and its Vicinity*. By John Hill Martin, 1877.

† The first edition was published in 1810.

‡ In a foot note the statement of H. G. Jones is given, that the first two paper mills in America, were erected in Germantown, Pa.

|| There appears to be no proof of such a purchase; though the first purchase of about 100 acres is still unaccounted for.

"The paper-making business was carried on, in 1815, by the sons of Mark, who was then living, aged seventy. He made the paper for the bills, issued by Congress, during the Revolutionary war; for the bills of the first bank established in Philadelphia; for many other banks and public offices. He was undoubtedly the first who made good paper in the United States.

"The improvements in paper-making, at Wilcox's and other mills in Pennsylvania, were principally owing to an Englishman, by the name of John Readon. He was a man of great professional ingenuity; and a first rate workman. He had indentured himself to the master of the vessel who brought him from Europe. Wilcox redeemed him, and employed him several years. He died in 1806, aged sixty."

In the *Pennsylvania Magazine*, (October, 1896,) is published a paper written by Horatio Gates Jones. "A Historical Sketch of the Rittenhouse Paper-Mill, A. D. 1690." In this paper it is stated that the mill was erected in 1690, by William Rittenhouse, near Germantown. It is further stated—"As to the Willcox Mill, although entitled to consideration from having supplied Franklin with paper at an early date, and from having been the first mill in America, to manufacture bank-note paper, yet instead of being the first, I believe it was the fourth or fifth mill in point of age. The second paper mill was erected near the same place by William DeWees in 1710."

In the *History of American Manufactures*, (by L. Bishop, M.D., 1861, vol. i. p. 199,) the following is stated. "A Paper-mill was erected on Chester Creek in Delaware County, Pennsylvania, by Thomas Willcox, an early English settler. Writing and printing paper and clothiers' paste-boards were manufactured there, and Franklin was supplied with much of the paper used upon his press.

"At the same place was made, by the old hand process, bank note paper, used in the old Continental currency, at one time so abundant in the colonies. After the death of the

original proprietor in 1779, the establishment was continued by his son Mark, who improved the manufacture of bank note paper, and also carried on the business to an advanced age."

As an additional means for obtaining money the State of Pennsylvania resorted to the expediency of lotteries; in one of which Mark Willcox drew a prize, as the annexed letter from one of the managers will show. It was addressed to "Mr. Mark Willcox, Front Street near the Draw Bridge, Philadelphia." The letter reads thus:

"New York July 23, 1786.

"Sir You have here inclosed a prize Ticket of the 2^d Class of the Pennsylv^a State Lottery N^o 2872 it drew 12 Dollars—which after the deduction is neat £3.16.6 that Currency. You will please to step to the Lottery Office and get it renewed and receive the 16.6—send the 3^d Class Ticket in a letter to me which please to deliver to M^{rs} Hillegas with the 16.6 and get Joseph Plumbs name entered on the Lottery Books—Wishing you a pleasant Journey—

"Your most Obed^t Serv^t

"M^r HILLEGAS"

Michael Hillegas, B. Fuller and Matthew Clarkson were Managers of the Pennsylvania State Lottery.*

Shortly after the Bank of North America was chartered, by Congress, in 1781, an order was given to Mark Willcox, one of the original subscribers to its stock, for the manufacture of the paper for the notes to be issued by the Bank.

This paper was made at his mill in Delaware County, under the supervision of an inspector named Joseph Pennell. After the paper was finished Mr. Pennell carried it to Philadelphia, having previously given a receipt for it to Mark Willcox; of which the following is a copy; the original, having been surrendered upon the payment of the money for the paper, is still preserved by the bank.

* *Penna. Archives*, vol. x, p. 513.

"November 5th 1781. Received from Mr Mark Willcox Ten thousand sheets of paper made for the use of the National Bank at his mill under my inspection by order of the Honble Robert Morris Esquire"

"JOSEPH PENNELL"

This was undoubtedly the first lot of paper, used for bank notes, that was made in the United States. The appointment of an agent to supervise the manufacture of this paper, and the fact of his carrying it away from the mill, signifies that it was a paper of an unusual character. It was watermarked with the name of the bank.

The notes were soon printed; and one of them, still preserved by the bank, indicates that the paper was unusually thin; and that it was made on a "laid-wire" mould.

Each note contained the watermark "NATIONAL BANK." This paper was not materially different from a strong, thin writing paper.

In 1791 the officers of the bank concluded to issue another form of note; and a new mould was made, on which the paper was manufactured. The bill for this mould is still preserved by the bank; of which the following is a copy.

"Tench Francis Esq. to Nⁿ & D^d Sellers Dr *

"June 18th 1791

"for a fine paper mould for Bank paper with box £4. 10. 0

"for 88 watermark letters @ 1. 10½ 8. 5. 0

"for 14 do figures 15. 0

"for 8 do private 8. 0

"Rec^d Paym^t Oct 5. 1791

"N^N & D^D SELLERS"

Among other old notes, preserved by the bank, is one that apparently was made on the above mentioned mould.

* Tench Francis was the cashier.

It is dated March 19th, 1796. The paper is similar to the notes issued in 1782; but they are smaller in size, and they contain the same watermarks, in smaller letters, probably to prevent the alteration of the notes to a higher denomination.

As early as 1783 Mark Willcox realized the necessity for a stronger paper for use as bank notes; and henceforward he used new linen stock in the manufacture of that class of paper. Russia sheeting and Irish linen were the usual materials employed in the manufacture of bank note paper, at Ivy Mills, from that date until 1846; after which time any form of clean, unbleached, new linen fibre was rendered available, by means of improved processes for bleaching, in the mill. The cost of this kind of linen often exceeded 50 cents per pound.

A few copies of some of the bills, in the possession of the writer, are here inserted to show the kind of linen and silk from which bank note paper was made.

"Philad^a June 8th 1783

"Mr Mark Willcox

Bou^t of Rob^t Barr

"To 1 ps Rushia Sheating

£5. 0. 0

"at same time Rec^d the Contents in full

"for ROB^T BARR

"H. M. McDONALD."

On June 19th, 1784, another piece of "Rushia Sheating" was purchased from Robert Barr.

"Decem^r 17th 1801. Mr Mark Willcox Bought of Thomas Shewell

"1 ps 4-4 Irish Linen—25 yds @ 6-8

£8. 6. 8

"Rec the above for Thomas Shewell

"ROB^T SHEWELL"

" Philad^a May 5 1803 "

" Mark Willcox Bo^t of Cope & Thomas

" 3 ps brown Russia Sheeting	17	51
" 3 " white " average price 20—50		61 50
" 4 " Red Bandanas* 4 50		18
		<hr/>
		\$130 50

" Received payment

" COPE & THOMAS "

On " 7 mo 19. 1805 " another bill of Cope & Thomas was paid for

" 7 ps Russia sheeting	@ \$24.	\$168.
" 2 Catties Blue silk		16.
		<hr/>
		\$184.

In a bill of Cope & Thomas, dated " 5 mo 2^d 1807," for Ravens Duck, it was stated that it was for the use of the Hagerstown Bank. Amount \$74.50.

On " 6 mo 3^d 1807," 4 Pieces Best Ravens Duck and 2 do " Bandanoes " were bought from Cope & Thomas for Cape Fear Bank.

On April 20th, 1810, the following were bought for the " Philad^a Bank."

" Five pieces best Raven's Duck	@ \$18.	\$90
" Four " Scarlet Bandan ^a	@ \$5 1/2	22
" Portage		.25
		<hr/>
		" \$112.25 "

* Silk was used in currency paper, as an admixture, at least as early as 1750. In the bills of New Jersey, dated June 22^d, of that year, the blue silk fibres are easily distinguished. The same is visible also in the bills of Pennsylvania, dated November 20th, 1775; and in the continental currency dated November 20th, 1775. India and Chinese bandanna handkerchiefs were the usual sources for the supply of red silk, that was used in the manufacture of bank note paper. It is not known to the writer when or where the custom originated of mixing red or blue silk with the paper pulp of currency and bank-note paper. Mark Willcox used it extensively; and also did his descendants.

On October 10th 1810 "4 ps best ravens Duck \$66." and "3 ps Scarlet Band" \$ 6." were purchased for "Farmers & M^e Bk," [the Farmers and Mechanics Bank of Philadelphia.]

On May 10th, 1810, a bill of Tho^s P. Cope was paid for "sundries got for Mechanic's Bank used for Charleston Bank." \$96.20.

It will be observed that, in some of these bills, the name of the bank is mentioned for which the linen and silk were purchased.

It was a common practice, at that period in the history of bank-note paper-making, for a bank to pay for the linen cloth and silk needful for its supply of paper, in addition to a certain stipulated price, per 1000 sheets, for its manufacture. As a fancied additional security, to insure the production of the best quality of paper, an agent of the bank was frequently sent to the mill where, although not a paper-maker, remained there during the progress of the manufacture of the paper ; which usually required a period of three or four weeks.

The agent locked certain portions of the mill at night and kept the keys ; and, when the paper was finished, he counted it, gave a receipt for it, and carried it to the bank, or to the printer.

It was not unusual for a bank to own its moulds ; in which case the name of the bank, or its initials, were watermarked ; so that each note would contain the design.

Mark Willcox, on account of his many business engagements connected with his mill, and also with the firm of Flahavan & Willcox, in Philadelphia, from 1783 to 1792, did not participate actively in many public affairs. He preferred the quiet life at his country home 18 miles from Philadelphia. Still his name appears to have been connected with several offices.

Although he was exempted from military duty, both by the action of Congress and of the Council of Safety, of

his own State, he was the leader of a band that was actively engaged in obstructing the efforts of the British officers in obtaining supplies for their army, after the Battle of the Brandywine. He and his band were acting under the instructions of his neighbor and friend General Robinson, who lived at Naaman's Creek, now Claymont.

He told his son James, the father of the writer, that, for this offence he was arrested at his house, at night, by the enemy, and taken to Philadelphia as a prisoner. Shortly afterwards a deputation of his neighbors, of the Society of Friends, went to Philadelphia; and, being non-combatants, they induced General Howe to release their friend the prisoner.

At a meeting of the Provincial Conference, held in Philadelphia on June 19th, 1776, it was resolved that a provincial convention be called to form a new government in this province, on the authority of the people only; and on June 23d, Hugh Lloyd, Thomas Lewis and Mark Willcox were appointed judges of election, in Chester County, for Deputies to the Provincial Convention.*

On April 3d, 1788, Mark Willcox was appointed, by the Supreme Executive Council, one of the Commissioners for the opening of certain roads in the counties of Northampton and Luzerne, in conjunction with John Nicholson, Henry Drinker, Tench Cox and Tench Francis.

On August 17th, 1791, Mark Willcox was appointed, by Governor Thomas Mifflin, one of the associate Judges of Delaware County, to hold the office, (as the commission states,) "so long as you behave yourself well." He held this office until 1824.

Mark Willcox was a member of the General Assembly of Pennsylvania, which met in Philadelphia on October 27th, 1788.

He was appointed on a committee to whom all claims of individuals against the State were referred. On November

* *Colonial Records*, vol. xv, p. 425.

4th, 1788, the report relative to the establishment of an assay-office was referred to a committee, of which he was a member.

On March 24th, 1789, "It was Resolved, That in the opinion of this House alterations and amendments of the Constitution of this State are immediately necessary." On this question Mark Willcox voted in the affirmative.

On September 26th, 1789, while he was still a member, a bill was enacted for dividing the County of Chester and to erect part thereof into a separate county.

In 1799 Mark Willcox was Lieut. Col. of 110th Regiment.*

On December 5th, 1778, an Act of Assembly was passed, by which all male white citizens (with certain exceptions) were required to take an oath of allegiance to the State of Pennsylvania. Commissioners were appointed in all the counties of the State, to administer the oath, and blank printed forms were supplied to them for use in the performance of that duty.

These blank forms were printed on paper made by Mark Willcox. They were small in size, 5x6 inches; indicating great economy in the consumption of paper.† The following is a copy of one in the hands of the writer.

"I Do hereby Certify, That Mr Mark Willcox of Concord in the County of Chester Hath voluntarily taken and subscribed the Oath of Allegiance and Fidelity, as directed by an Act of General Assembly of Pennsylvania, passed the fifth day of December A. D. 1778. Witness my hand and seal, the fourth day of March A. D. 1779."

"Pers^r Frazer Commiss^r"

This sheet of paper contains the characteristic watermark of the Dove in it, which Mark Willcox used.

* Ashmead's *Hist. of Del. Co.*, p. 241.

† They were printed by John Dunlap of 281 High Street, Philada.

Persifor Frazer, John Kinkead and John Baton were appointed Commissioners, to take the oath of allegiance, in Chester County.

The only records of paper supplied by Mark Wilcox to his brother-in-law Matthew Carey, during the last century, are contained in letters written by the former to the latter, which are still preserved by the descendants of Mr. Carey.*

On February 13th, 1792, Mark Willcox wrote to Matthew Carey—"I read your favor from Chester. Rest assured there has been no neglect on my part respecting the paper. With every exertion shall be able to send you some on Tuesday, I expect 6 or 7 Reams."

On March 14th, 1792, he wrote—"I have sent you by the bearer eight Reams of paper, the roads are so bad I cant get the waggon to go before Tuesday next."

On November 27th, 1792, he wrote—"I send by the bearer Mr Miller 4 Reams fine Demy. Expect to send more this week by Friday evening."

In letter dated Dec. 22d, 1794, he stated—"I shall in a few days begin more paper for you. Shall send some up as soon as I can."

"N. B. I have sent 10 bundles of paper for Mr. Humphries to your care. Please let him know."†

In a letter, without date, he wrote—"I have sent by stage 6 Reams fine Medium.. Shall send some seconds in 2 or 3 days."

In 1790, Carey, Stewart & Co. published an edition of the Bible, the Douay version. Among the list of subscribers the name of Mark Willcox appears, for 6 copies.

In 1791, Matthew Carey's store was at No. 22 North Front St., Philadelphia. In 1794, it was at No. 118 High Street.

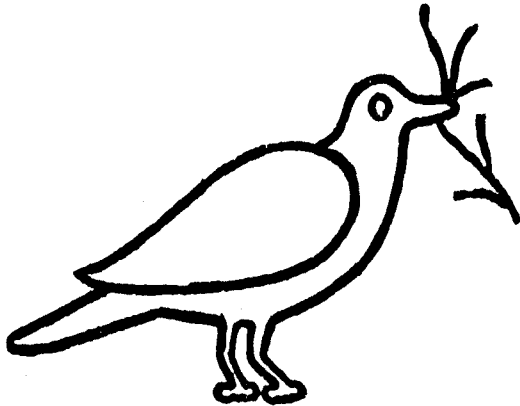
It was formerly a common practice for paper-makers to watermark their paper, in order that it might be easily

* There is one memorandum in the old work-book of the mill, in the handwriting of the foreman, dated in February, 1793, as follows, "Made 20 reams 8 quires Careys."

† Daniel Humphreys' store was at No. 48 Spruce Street.

identified as the product of their mills. In addition to their names or initials on one half of the sheet, they put some device on the other half, to which they claimed a title, as a trade mark ; and which was respected by the paper-making fraternity. Only two exceptions to this custom are known to the writer.

A writing paper containing the initials 'T M W and also a Dove with an Olive Branch, is believed by the writer to have been made on moulds owned by Thomas Willcox. Such paper was used in the office of the Supreme Court of Pennsylvania, in 1778-79, by Edward Burd, the Clerk ; and sheets of it are still on file in the office of that Court, in Philadelphia. Such paper was also used by Thomas



DOVE WATERMARK USED BY THOMAS WILLCOX.

'Taylor, Register of Wills for the County of Chester in 1779.* The paper in Will Book S. 1781, in the Register's office, in Philadelphia, also contains the same watermarked initials, 'T M W ; but not the Dove. The annexed figure of the dove was copied from a sheet of paper used by Edward Burd, in 1778.

This belief is strengthened by the fact that Mark Willcox, the son and successor of Thomas Willcox, also used the same watermark of the dove with the olive branch, in

* As the Dove is the emblem of the Willcox crest, its adoption as a watermark, by Thomas Willcox, may be due to that circumstance.

addition to his initials M W, in paper dated as early as December 5th, 1779. It is believed by the writer that some of the above mentioned papers may have been made, by Mark Willcox, on moulds formerly owned by his father ; from which the watermarks had not been removed, a custom not uncommon with paper makers. The writer has frequently made paper on moulds, formerly owned by his father, from which the watermarked name of the latter had not been removed.

Mark Wilcox also used the figure of a powder-horn, in conjunction with his initials, M W, on some of his papers, as early as August 13th, 1787.

Joshua Gilpin also used the same design in some of his paper ; a sheet of which, in the possession of the writer, is dated "Dec^r 4th 1789." It also contains the name, watermarked, "J. G. & Co. Brandywine."

On September 1st, 1808, Mark Willcox admitted his eldest son, Joseph, into partnership, giving to him one third interest in the profits of the business. The latter was born in August, 1787. On June 1st, 1811, he gave a third interest in the business to his son John, born in April, 1789.

Joseph died in January, 1815. After which date John superintended the operations of the mill until he died in July, 1826.*

At a meeting of manufacturers of Delaware County, held in 1825 or the early part of 1826, a committee, consisting of William Martin, George G. Leiper and John Willcox, was appointed to ascertain the number of mill-seats and manufactories in Delaware County ; and to make a report of the same at a future meeting. Before the report was submitted John Willcox died.

The following is an account of the proceedings of the meeting convened to receive the report of the committee.

* After Mark Willcox relinquished the active management of the mill to his sons, Thomas Amles, who manufactured paper at a mill on Mill Creek, in Montgomery County, adopted the watermark of the dove with the olive branch, for his writing papers, at least as early as 1810.

"At a meeting of a number of manufacturers and other citizens of Delaware County, convened agreeably to public notice, at the Court-house in Chester, on Saturday the 5th of August, 1826, for the purpose of receiving the Report of the Committee appointed at a former meeting, to ascertain the number of manufactories, improved and unimproved Mill-seats in the County, William Anderson, Esq., was appointed Chairman, and Dr. Samuel Anderson, Secretary.

"The object of the meeting being stated from the chair, Mr. Leiper rose and delivered the following appropriate address :

"MR. CHAIRMAN. It becomes my melancholy duty, fellow citizens, to announce to you, as chairman of your committee, and in behalf of Mr. Martin, who is absent, the decease of our respectable colleague and friend, John Willcox, Esq., of this County. When the greyheaded pilgrim, covered with honor and with years, after a life of usefulness seeks repose in the tomb from the defections of human nature, or when the infant crowing in the mother's arms, is snatched from her caresses, we yield them with submission to their God. . . . But when we behold a young man in uncommon vigor of health—in the spring-tide of life and of usefulness—the prop of a most respectable and aged parent—a tender and affectionate husband and father suddenly snatched from among us—are we stocks or are we stones, that we will not sympathize with those who are in sorrow? . . .

"I beg leave to offer the following resolutions," which were unanimously adopted by the meeting.

"Resolved, that this meeting sincerely regret the loss the County of Delaware has sustained by the decease of John Willcox, Esquire, one of the most public spirited and respectable citizens. . . .

"Resolved, that Mr. John P. Crozer fill the vacancy occasioned by the death of Mr. John Willcox, in the Committee."

After the death of John Willcox, in 1826, his brother James M. Willcox, born in April, 1791, assumed the management of the paper-mill; and, on February 17th, 1827, when his father, Mark Willcox, died, he inherited the mill from him.

In 1829, the old mill, which had been running 100 years, without interruption, was torn down; and a new building was erected on the same site: which was put in operation in December, in that year.*

The use of bank-note paper rapidly developed; and, in the course of a few years, in 1836, additional machinery was introduced to increase the production.

While the paper-mill was operated by John Willcox he received orders, from several of the South American states, for watermarked bank-note paper.

Among the papers of the latter, in the possession of the writer, is one, in his handwriting, stating that from Sept. 14th, 1825, to the following Oct. 24th, the mill was making bank paper for the Bank of Buenos Ayres. James M. Willcox also supplied many orders for watermarked paper for South American countries; and several lots of the same character, were manufactured by the writer.

The following statement, referring to Ivy Mills, has been copied from Ashmead's *History of Delaware County*, (page 494), "For a long period not only were the Banks of the United States supplied with their paper from this mill, but its lofts were, at times, piled with peculiar-looking papers, of various tints, bearing the ingrained watermarks of most of the Governments of South America. Nearly the whole of the western continent drew its supplies of Bank paper from this mill."

* The name of Ivy Mills is believed, by the writer, to have its origin at the time when the Post Office of that name was first established there in April, 1822. The walls of the mill were covered with ivy vines, that were planted by the founder, Thomas Willcox. A bed quilt, with an ivy leaf embroidered by his daughter Mary in 1761, is still preserved in the family. She told her children and grand-children that Benjamin Franklin when at her father's house, designed the ivy wreath for her.



VIEW OF IVY MILLS IN 1865 LOOKING SOUTH.

After the year 1832 the mill was engaged almost wholly in making bank paper, until the death of James M. Willcox, which occurred on March 4th, 1854.

From that time the mill was operated by his sons Mark, James and Joseph Willcox, under the firm name of J. M. Willcox & Sons, until November, 1859; when it passed into the possession of his youngest son, Henry B. Willcox. The latter continued to manufacture paper there until March, 1866, when the business of manufacturing hand-made paper was abandoned.

On October 20th, 1850, James M. Willcox sent a printed circular, with samples of bank paper, to all of the banks in the United States. In it he stated that he had made the manufacture of bank-note paper, for the last twenty years, almost an exclusive business. This referred only to the department of hand-made paper; as he, at that time, owned two mills (in which paper was made on Fourdrinier machines), one erected in 1837, and the other in 1845, at Glen Mills, $2\frac{1}{2}$ miles from Ivy Mills.

Soon after the mill came into the possession of James M. Willcox, in 1827, he adopted the watermark of the ivy leaf, in addition to his name, J M WILLCOX PHILAD^A. As his business was chiefly confined to the manufacture of bank-note paper, he did not make large quantities of other paper in the hand-made paper mill.

The following has been copied from Ashmead's *History of Delaware County*. "At the time of the death of Mark Willcox, in 1827, two men, of two generations, had conducted the mill ninety-eight years. The ponderous machinery, however, of modern times, silenced it long ago; but it still stands, a silent relic of its early time. Its wheel has long since decayed. Its stone gable is thickly covered with the venerable ivy vine, whose root came over the ocean, in 1718, from near the old Ivy Bridge in Devonshire."

As a general rule the bonds of the United States were printed on plain, strong paper; but in the year 1843, when

the maturity of a national loan was approaching, a bill was passed by Congress, which was approved on March 3d, authorizing the issue of new notes to replace others that might be redeemed by the treasury, or received in payment of dues.

In July, in that year, James M. Willcox supplied to the Treasury Department two classes of watermarked paper. One class consisted of large sheets, for bonds, containing the name U. STATES in large letters. The other class, amounting to 35,000 sheets, was intended for treasury notes, each sheet containing the name and figures ^{UNITED STATES} in three places.

By an act of Congress, approved March 31st, 1848, the President was authorized to borrow a sum not exceeding \$16,000,000.

In the following summer James M. Willcox supplied 26,000 sheets of bond paper, for this loan, which required three classes of paper; presumably for three series of bonds, of as many denominations of value. Two of the classes were watermarked with the words UNITED STATES, and the design of an eagle, in sheets of two sizes. The other class consisted of plain paper. All of this paper was sent to Messrs. Rawdon, Wright, Hatch & Edison to be printed in New York.

After the last mentioned date all of the bond paper supplied to the Treasury Department, from Ivy Mills and from Glen Mills, consisted of plain paper, without watermarks.

It has been previously stated that, in former times, it was a common practice for a bank to own its moulds, and to pay separately for the linen and silk used, in addition to the cost of manufacturing the paper.

In connection with this custom the following has been copied from a letter addressed to James M. Willcox.*

* Willcox Papers, vol. iii, pp. 2 to 7.

" PLANTERS AND MECHANICS BANK OF CHARLESTON,

March 28th 1827

" MR. JAMES M. WILLCOX

" Near Chester Pennsylvania

" Sir

" A letter received from you in the course of the last Summer informed us of the death of your Brother John Willcox, manufacturer of Bank paper ; and that the business would be carried on by you . . .

" All the paper which this Bank has used for its notes was made by your predecessors ; and we are desirous of obtaining a further supply from an Establishment, from the conductors of which we have experienced a disposition to meet our expectations. I am therefore instructed to engage you to make Eight thousand sheets of Bank paper of the best quality, and as nearly resembling our former supplies as possible . . .

" It appears by our Books that the paper hitherto used by us was made at your Establishment ; one parcel in 1811, another in 1814, and another in 1825 . . .

" The paper we use is made on moulds of our own, which are deposited in the Farmers and Mechanics Bank in Phil^a, and which you will readily obtain by presenting the enclosed letter to Mr. Ruhl, the Cashier. We wish the moulds returned to that Bank when you shall have completed the work " . . .

" I am respectfully yours &c

" DANIEL RAVENEL, Cashier."

For information concerning the material of which the first lot was made by Joseph and John Willcox, in June, 1811, Mr. Ravenel enclosed in his letter to Jas. M. Willcox a copy of their bill of that date, which included—

" 4 ps Russia Sheeting for making paper	\$86.
" 2 ps Scarlet persian	22.

\$108.

Mr. Ravenel, the cashier, when ordering another lot of paper, in February, 1831, stated that Mr. Patton was cashier of the Farmers and Mechanics Bank; and that he would deliver the moulds. He also stated that the watermark "P & M B" appeared on each bill. The box, containing these moulds, is still in the possession of the Farmers and Mechanics Bank in Philadelphia; although it is not likely that it has been opened during the last 50 years. There is probably no person now living who has ever seen the moulds.

Among other institutions, which owned their moulds, the Bank of Chester County, in this State may be included. This bank was chartered in 1814. Its paper was made at Ivy Mills; and its initials, "B C C," were watermarked in each note. In order to enlighten the holders of its notes, concerning the geographical position of the bank, the following was printed on each note—"The Bank of Chester County, between Philadelphia and Lancaster, promises to pay . . . dollars on demand."

The paper for the Bank of The United States was made at Ivy Mills; the first mention, concerning which, that has been observed by the writer, was dated in September, 1809, which will be referred to later, in this paper. Nicholas Biddle, the President of this Bank, devoted much consideration to the subject of various devices for the prevention of counterfeiting the notes of the Bank; and Mr. George Escol Sellers conducted some experiments, at Ivy Mills, to demonstrate the practicability, or impracticability, of some of Mr. Biddle's contrivances; soon after the latter was elected president of the bank.

The orders for paper for this bank were sometimes given by Mr. Biddle; at other times by the cashier. The paper contained the name of the bank, in full, watermarked in each note. In 1829, the bank increased the size of the paper for its twenty-dollar bills; as may be observed in the annexed letter addressed to James M. Willcox.*

* Willcox *Papers*, vol. III, pp. 25 to 31.

" Bank U. States, October 28th 1829

"Sir The Bank will soon have occasion for twenty or thirty thousand sheets of your best Bank note paper of a size suitable to our largest plate, say of 20.\$'s denomination. Please call soon and receive a specific order, from

" Your obd^t Serv^t

" W. MCILVAINE Cash "

In November, 1829, the Bank of the United States had a plate engraved for its hundred dollar bills, which required a still larger paper ; which was a plan adopted to prevent the alteration of notes to a higher denomination. The following has been copied from a letter of the cashier, Mr. McIlvaine, dated Nov. 7th, 1829.

"I received yesterday your letter of the 5th instant covering a sheet of Bank note paper, which I find will not answer for our hundred dollar plate, or even for the twenty —Be pleased therefore to take as early steps as possible to furnish the Bank with twenty thousand sheets of a larger description." . . . In January, 1830, the mill book shows that 22,500 sheets of the large size, and the same number of the small size, were made for the bank.

On April 18th, 1838, the legislature of the state of New York passed an Act to Authorize the Business of Banking. The comptroller was empowered to make contracts for the bank-note paper, for engraving the plates and for printing the notes. The notes were to be issued to the banks upon the deposit, with the comptroller, of state and municipal bonds, and of mortgages on real estate, in New York, to be approved by him. *

The contract for the paper was awarded to James M. Willcox ; and for the engraving and printing to Messrs. Rawdon, Wright & Hatch, of New York ; to Draper, Toppau, Longacre & Co. of Philadelphia ; to Danforth, Underwood & Co. of New York, and to Hall, Packard & Cushman of Albany, by the comptroller, Bates Cooke.

* *Laws of the State of New York for 1838, p. 245.*

New moulds were made for watermarked paper; and thick paper was used; as the notes were printed on each side.

After that date the custom of printing both sides of bank-notes became more popular; and a greater demand was made for a thicker and more opaque paper than formerly.

In September, 1851, 50,000 sheets of paper were made for the Ohio State Stock Bank, by James M. Willcox. In this paper the name of the bank, in full, was watermarked in each note. The accompanying portrait of James M. Willcox (born 1791—died 1854) was engraved and printed, by the American Bank Note Company, on a specimen of this paper.*

The last lot of watermarked bank paper, manufactured at Ivy Mills, was made for the Bank of Montreal, in 1861, 100,000 sheets. Each note contained the letters B M.

A large number of letters, from officers of banks, and from bank-note engravers and printers, written prior to 1840, have been presented to the Historical Society of Pennsylvania, where they may be seen bound in the form of a book. From an inspection of these old letters the capriciousness of bank officers is frequently manifested, in the discussion concerning the characteristics of the desired paper.

Since the establishment of the National Banks their officers have had no choice in the selection of the paper for their notes; which has been of a uniform quality and thickness; but, prior to their organization, on account of the diversified fancies of bank directors, the paper-makers were obliged to manufacture a great variety of bank paper, representing many shades of color; and many degrees of thickness, of length of fibre and of transparency or opacity. In the matter of silk there was also a great diversity of opinion; not only in the proportion to be used, but in the amount of grinding, to which it should be subjected.

* The signature, under the portrait, was copied from a check dated in 1830.



James C. Willcox

The signature, under the portrait of James M. Willcox, is a fac-simile taken from a check dated in 1830.

The range, in the thickness of bank paper, in former times, varied from 12 to 18 pounds per 1,000 sheets ; each sheet making 8 notes. As a general rule the banks, in the Southern States, preferred thin paper for their notes.

In March, 1825, Messrs. Fairman, Draper, Underwood & Co., bank-note engravers and printers, ordered a pair of moulds to be made with their initials so watermarked as to appear in each note. On November 14th, in that year, they wrote to John Willcox—"The paper you are about to make us we wish to be on *our own moulds*. The texture and thickness of that of the Philadelphia Bank will be quite satisfactory." . .

The severe ordeal, to which bank-notes, in this country, are subjected, soon obliterated the watermarks in the paper ; and that plan in a few years practically passed into disuse for bank notes.

It is true that the Bank of England still employs an elaborate watermark, as a safeguard against the counterfeiter, with success ; but the notes of that institution are not exposed to severe usage ; and they are not reissued after they have once been returned to the bank for redemption.

In 1853, Messrs. Toppan, Carpenter, Casilear & Co., and Wellstood, Hanks, Hay & Whiting, bank-note engravers and printers, concluded to use a paper with their initials watermarked, to appear in each note, in a manner so conspicuous that they would not easily be effaced by moderate usage. This plan required the use of large wire for the letters on the moulds ; but the paper, made on them, did not prove to be satisfactory. The film of paper on the letters was too thin, in proportion to the paper in the body of the sheet ; and these thin portions were soon ruptured by hard usage.

Shortly after the issue of \$50,000,000 of "Demand Notes" had been authorized by the Acts of Congress, in

July and August, 1861, the Secretary of the Treasury, Hon. Salmon P. Chase, ordered the needed paper from Messrs. J. M. Willcox & Sons. The hand-made paper-mill at Ivy Mills, was not able to supply the sudden and unprecedented demand for bank-note paper; and the business was transferred to one of the mills owned by Mark, James and Joseph Willcox, at Glen Mills, two and a-half miles distant from Ivy Mills; where the paper was made on a Fourdrinier machine. At a later date, when large quantities of bond paper were also ordered by the Treasury Department, two machines were required to manufacture the necessary paper.

When the Secretary of the Treasury ordered the first lot of paper, for the "Demand Notes," he concluded upon the weight of twenty pounds per thousand sheets, to make the proper thickness for the paper, against the advice of the paper-makers, and especially against the protest of the writer. The chief purpose of the Secretary, when selecting such heavy paper, appeared to be to prevent the printing from showing through the paper.

When the next lot of paper was ordered, for the "Legal Tender Notes," authorized by Act of Congress on Feb. 25th, 1862, a thinner grade weighing eighteen pounds per thousand sheets was selected; which proved to be satisfactory; and which was subsequently adopted as the standard of thickness for all national notes.

After the adoption of the so called "localized fibre" * paper, in 1870, all of the paper for bonds, notes and fractional currency were printed on such paper.

Before Messrs Jay Cooke & Co. were appointed the agents for the sale of the so called, "seven-thirty" and "five-twenty" bonds, these bonds were sold so slowly that the expenses of the war were chiefly paid with the Legal-Tender notes; which were issued as fast as the paper could be made and printed.

* Patented by James M. Willcox.

The correspondence from the Treasury Department to the paper-makers, at that period, has been accidentally destroyed by fire; but the writer remembers a letter sent by the Secretary, Hon. S. P. Chase, to J. M. Willcox & Sons, in which he stated substantially as follows.

"I urge you to take all possible precautions to prevent accidents to the machinery of your mills; as we are, in a great measure, dependent on your paper for money to meet the daily expenses of the Government."

The following statements made by Mr. Jay Cooke, in a late letter from him addressed to the writer, give some of his personal recollections concerning the financial embarrassment of the Government, at the time just referred to.

"It is well known that the condition of our army and navy and also our Treasury was left by those, who had planned to go into Rebellion, in a most demoralized plight. I will speak of the Treasury, which was depleted & dishonoured, so much so, that the credit of the nation was in great danger of a collapse. In one instance, that I recall, 12 per ct interest was required for temporary loans, and the Bonds and Treasury obligations sank to 88° on the dollar. Mr. Chase deserves the lasting gratitude of this nation for his great efforts at that time to sustain its credit and to recuperate the Treasury. Various Treasury notes, Bonds, Certificates etc—were resorted to, & I know that one of his great anxieties was the speedy preparation of the Bonds, notes &c., and the pressure he brought to bear upon your firm, who had so much to do with the furnishing of suitable paper. Mr. Chase was very anxious to avoid all delay, as the demands upon the Treasury could not be met unless Bonds & notes were available.

"I remember full well those dark days of trial & witnessed the deep anxiety of Mr. Chase, as so frequently an empty Treasury stared him in the face—& rapidly increasing requisitions were made upon him for untold millions.

"It was my fortune under God to be instrumental in aiding Mr. Chase all through the days of his secretaryship, and afterwards during the secretaryship of Mr. Fessenden & McCulloch—I am glad to bear witness to the great service rendered by your honored firm & to attest your patriotic devotion to Mr. Chase's wishes on behalf of the Treasury.

"The story of the finances of the great war has yet to be written. When it is written it will show, on the part of those who sustained the credit of the nation & furnished the 'sinews of war,' such services as never were eclipsed by even the grandest events of the fields of Battle."

Shortly after the termination of the late civil war the Government concluded to make the paper for its notes and bonds, and for the notes of the National Banks; and machinery, for manufacturing such paper, was erected in Washington, at a great expense. But, after a trial of two or three years, the results proved to be unsatisfactory; and the contract was renewed with the same paper-makers, who had the experience of three generations in the manufacture of that class of paper.

The annexed letter, in the handwriting of Victor du Pont, is here included, to show the use of bank paper by his firm. It was addressed to John Willcox.

"Brandywine March 11th 1826

"Dear Sir For a number of years past we had our Bank checks printed on Bank note paper. They circulate so much from Tavern to stores that we found it necessary to go to the expense of such paper to prevent them from being torn to pieces and defaced when returned to us. We used to get the paper, a sample here enclosed, from J. & T. Gilpin—as they do not make any of that kind of paper now, and we understand you do, we would be glad to purchase some from you—any kind not good enough for Banks would suit us—"

"Yours most respectfully

"V. & CH^s DU PONT & Co."

Among the bank-note papers with a variety of water-marked designs, made at Ivy Mills for foreign countries, two lots were supplied early in the year 1839; 25,000 sheets of blue and 15,000 sheets of yellow-paper were made.*

In the blue paper, in addition to other watermarks, the words Buenos Ayres and CINCO were conspicuous. The yellow-paper contained the same watermarks, except that the word VEINTE was substituted for CINCO.

In 1838, an order for watermarked bank-note paper, for New Granada, was received through Messrs. Everett & Battelle of New York. On December 17th, in that year, that firm wrote to James M. Willcox,—

“Replying to your favor desiring further information concerning the Bank Note paper, we have no sample from the New Granadian Government, for whom it is ordered. †

“We should like to have the paper packed in secure boxes; not to weigh more than 125 pounds each, as it is to be transported a part of the distance in South America on Mules.

“We have recently seen a gentleman from Bogota to whom we submitted samples of your Bank paper. He has ordered 10,000 sheets of a larger size.” . . .

In 1859, an order for paper, with elaborate watermarked designs, was supplied from Ivy Mills for the Bank of Greece. Each note formed a sheet exhibiting three rough deckel edges, when cut from a registered stub, as an additional security against the counterfeiter; similar, in that respect, to the notes of the Bank of England. The watermarks exhibited the form of a large bivalve shell, a Pecten; in addition to the words and figures denoting their value: EKATON and 100, in one class; and EIKOZIPENTE and 25 in the other.‡ This paper was printed by the American Bank Note Company.

* Willcox Papers, vol. ii, pp. 85-6.

† Ibid. vol. iii, p. 253. In addition to other watermarks, each note contained the words—THESAURO NACIONAL.

‡ Ibid. vol. ii, p. 67-8.

The annexed items have been copied from several old books, the oldest of which, the mill-book, in the handwriting of the successive foremen, is in many portions illegible. They are here inserted to show the names of some of the banks which obtained their supplies of paper from this mill.* No reference is here made to the many lots of bank paper, made at the mill, when the names of the banks have not been mentioned, for which the paper was intended. In some cases the mill was running several weeks on bank paper, and no names of banks mentioned.

1794	May 10th	Began Merrimack Bank paper.	6,000 sheets made.
do	Apr 27th	Began Nantucket Bank paper.	
1799	June 25th	Began York Bank paper.	
1801	May 26th	Began Manhattan Bank paper.	
1809	Sep. 23d	Began United States Bank paper.	[Apparently running on it four weeks.]
1810	Aug. 9th	Cash from Schenectady Bank	\$120.00.
1810	Oct. 6th	Making Bank paper for Richmond, Virginia.	
do	Nov. 6th	Cash from Farmers & Mechanics Bank [of Philadelphia]	\$97.50.
do	" 27th	Making Boston Bank Paper.	
do	Dec. 24th	Cash from Jersey Town Bank,	\$123.30.
1811	June 13th	Paper Mill Cr by Cash received from Planters and Mechanics Bank of South Carolina.	\$87.10
do	Sep 2d	do " " " " " from New Orleans Bank.	77.33
do	Dec 14th	do " " " " " " Union Bank of N. Y.	77.64
1812.	Apr 25th	Making Bank paper for J. Mabin.	
do	June 6th	Received for Bank paper for Bank in State of Ohio.	80.88
do	May 2d	Making Bank paper for Farmers & Mechanics Bank. [Philadelphia.]	
do	July 27th	Received for Bank paper for State Bank of Tennessee.	77.67
1813.	Nov 20th,	7,625 sheets Bank paper sent to Kentucky	
do	" "	15,500 " " " " " Brunswick	
do	" "	7,300 " " " " " Muskingum	

* It is not known to the writer when bank paper was first made in any other mill.

1814. Jan 29th Cash from York Town Bank \$119.10
1815. Apr 20th " " David Lewis, agent for Dover Bank,
New Hampshire, \$119 10.
1816. May 21st 9.000 sheets Bank paper for Union Bank of New
York. John Low Esqr. Cashr.
- 1817 Apr 24th 6.940 " " paper for Silver Lake Bank.
- 1818 Sep 15th 24.985 " " " " Manhattan Bank of
New York.
- 1819 Dec 24th Finished Bank paper for the Bank of New York,
Charles Wilks Esq. Cashr, 13.850 sheets, superintended
by Moses Palmer.
- 1821 June 2d 12 075 sheets to Franklin Bank of Baltimore.
- 1823 Sep 22d Finished this day making Bank paper for the
Bank of Orleans, ordered by Messrs Price & Morgan of
Phila, 12.050 Sheets.
- 1824 Sep 14th Sent to Price & Morgan Philada, for the State
Bank of Louisiana, 32.000 sheets paper.
- do Sep 20th 9 425 sheets Bank paper finished this day for the
Salem Banking Co. New Jersey.
- 1825 Mar 2d Made 15.320 sheets paper for Bank of Camden,
New Jersey.
- 1825 Aug 16th Delivered to Samuel Brooks* for the Planters &
Mechanics Bank of Charleston S. Carolina, 8.400 sheets
Bank paper.
- do Aug 16th Delivered to Philada Bank, one third of which
is for the State Bank of Georgia, 24.550 sheets.
- do Dec 6th Sent to Bank of North America, by Chester
Packet, 8 000 sheets Bank paper.
1827. May 14th Cash from Farmers Bank of Maryland, at Annapo-
lis, \$150.00
- do Aug 28th Sent to Bank of United States 9.000 sheets
- do Oct 30th " " " " " 20 000 "
- do Dec 22d " " " " " 20.000 "
- 1829 May 17th Made 22.000 sheets for Mechs. Bank. [of Phila-
delphia.]
- 1830 Jan Made 22.500 sheets large U. S. and 22 500 sheets U.
S. small. [for Bank of the United States.]
- do June 8th Made 20.250 sheets for the Penn Township Bank.

The following names have been copied from an old
book to indicate other consumers and dealers in paper,

* Cashier of the Farmers & Mechanics Bank in Philadelphia.

who obtained supplies from Ivy Mills. Although their names appear many times in the book, the date of the first lot of paper sent to them, only, is here given.

1793. Apr 10th Began printing Cap [foolscap] for Hall.* 197
Reams.
1808. Mar 29th Kimber & Conrad. No. 93 High St. Philada.
do May 18th 30 Reams received for sale on com-
mission by Elenora McCullagh.
- 1810 May 8th William McCullagh. 308 High St. "
- 1813 " 4th Mathew R. Locherman
do July 2d Robert Porter
do Sep 25th William Bonnell, Paper Merchant,
No. 32 Chestnut St. "
- 1815 June 3d Bible Society of Philadelphia.
do July Horace Binney, 70 Reams fine Royal,
sent to Wm Fry to be printed.†
do Oct 5th William W. Woodward, S. West cor-
ner of 2d & Chestnut Sts. [Card manufac-
turer.] "
- do Aug 18th William Fry. No. 52 Prune St.
[Publisher of the National Gazette.] "
- 1816 May 15th Isaac Smedley [Paper for sandpa-
per.]
do May 15th Philip Nicklin, N. East corner 5th
& Chestnut Sts. "
do Aug 29th Moses Thomas. No. 52 Chestnut St. "
1818. Mar. 23d Thomas Dobson. No. 41 S. 2d St.,
above Chestnut. "
do July 21st Thomas & William Bradford. No. 8
S. Front St. "
- 1819 Jan 15th Edward Ingersoll.‡ 136 Walnut St. "
do Mar. 2d James Maxwell, for Spectator. No. 63
S. 5th St. "
do do 11th Lovegrove, Dell & Co, of Balti-
more, to sell on commission.
do April 10th Anthony Finley N. E. corner of
4th & Chestnut Sts. "

* Hall and Sellers, No. 51 High Street, Philada, were successors to Franklin & Hall.

† For his 6th vol. of reports.

‡ Edward Ingersoll was editor of the Analytic Magazine, and James Maxwell was the printer and publisher.

- 1819 April 10th Thomas Desilver No. 237 High St Philada.
do Feb 5th Fielding Lucas Jr, of Baltimore.
do Oct. 30th Stuben Butler.
1820. Jan. 26th Analectic Magazine.
1821. Nov. 20th Charles Miner. [Editor of the Village Record,
at West Chester.]
1822. May 1st Butler & Worthington, Editors of the Post Boy.
do July 24th William W. Potter. No. 36 Carter's Alley.
Philada.
do June 25th Rev Mr Cummiskey. St Mary's Church Philada.
1823 Feb. R. W. Pomeroy, for Sanderson's Lives of the Signers
of the Declaration of Independence.
do June 13th A. Bacon. Musick paper.
do do 21 Beck & Stewart, Hanging paper. S. W. corner
of 3d & Walnut Sts Philada.
do Aug 9th James E. Moore.
do do 30th J. Seymour, of New York. To sell on commis-
sion.
do Sep 17th Edwin T. Scott.
1824 Mar 5th Doc. McHenry.
do do 27th Jasper Harding. Philada.
do do Job Palmer, for the Monthly American Magazine.
do Aug. 24th Joseph N. G. Lescure, Editor of Upland Union,
at Chester.
1825. July 15th Blanchard, Haley & Beatty, hanging paper.*

The following have been copied from a few memoranda,
in the handwriting of John Willcox :

"May : . 1815. Made fine medium for Mr Campbell, of Peters-
burg Virginia, for printing the American Speeches, at \$5.00 per
ream.

"Sep. 16th 1815. Made a medium paper for Wm. W. Wood-
ward, at the request of Mr Wm. Young.

"May 1st 1816. Made a medium paper for Philip Nicklin to
print Calvin's Institutes, to weigh 18 lbs per ream, at \$5.50 per
ream.

"Dec. 20th 1816. Made a medium paper for Moses Thomas to
print Johnson's Dictionary, at \$5.25 per ream.

* The first mention of hanging paper, made at the mill, observed by the writer, was
in February, 1793; and the first reference to "sand paper" was in September, 1810,
for Mears & Smedley.

"Jan. 4th 1817. Made 80 reams Royal printing paper for John B. Wallace Esq. for his reports, at \$7 00 per ream, wt 24 lbs.*

"May 1st 1817. Memorandum of Bank paper materials &c for the Union Bank of New York, John Low Esq. Cashier.

4 pieces white Russia sheeting, wt 98 lbs.

12 oz of dark blue sewing silk."

John Willcox evidently considered this a small order for a large bank; as he wrote on the margin—"Baby Banking."

"Sep 24th 1816. William Fry Cr by printing 4.000 election tickets for Delaware County." . . .

Among the precautions taken, to prevent the counterfeiting of the bills of some of the Colonies and States, during the last century, the use of scales of the mineral mica, is conspicuous in some of the paper.

Such scales are apparent in the bills of New York, Pennsylvania, Delaware, Maryland, Virginia, North Carolina and probably of other Colonies and States. They are visible also in some of the issues of the Continental bills. They may be seen in notes dated as early as 1764.

It is not known to the writer who first introduced this plan.

Until about the year 1832 bank paper was made only in comparatively small lots, at Ivy Mills, to supply the orders from banks or bank-note engravers; but, after that date, a large supply, of various kinds, was usually kept on hand, ready for immediate delivery.

It is not known to the writer when paper was first made on vellum moulds. In a late communication from Mr. Lewis Evans, in England, received through the courtesy of Dr. Garnett, Keeper of Printed Books, in the British Museum in London, he stated that he has a copy of a book, printed in Birmingham in 1757, many sheets in which are printed on wove or vellum paper.

* John B. Wallace was a lawyer, at No. 101 Walnut St., Philada.

The oldest vellum paper seen by the writer, presumably made in America, was used for printing the bills of Maryland, which were dated Dec. 7th, 1775. The small notes of the Bank of North America, of small denominations, dated August 6th, 1789, were printed on vellum paper by F. Bache.* But vellum moulds were not used extensively for making paper, in America during the last century.

The use of laid-wire moulds, for manufacturing bank paper, was probably abandoned early in the present century.

In this connection the following has been copied from a letter of Fielding Lucas, dated in Baltimore on September 4th, 1826, and addressed to James M. Willcox.

"Since I received your letter I have seen the president of the Bank of Maryland, who has concluded to have paper made on a mould that was made for the bank some 20 or 30 years ago by Sellers and is a laid one, which they think will be a matter of additional security, that kind of paper being entirely out of use." [For bank notes].

Mr. George Escol Sellers, referred to before, in a late letter, stated that at the time when his grandfather Nathan Sellers began to make moulds, in 1776, it is very certain that both laid and vellum moulds were made. In continuation he wrote—"When in England, in 1832, William Matthews, son-in-law and successor of Fausett, I think was the name, mentioned some entries of a shipment of both wire for laid, and woven wire for vellum moulds, to John Sellers, the father of Nathan, as far back as 1773.† They were the only weavers of brass vellum wire at that time, and the principal mould makers of England. Their wire works were at Chepstone, on the River Wye."

The business of bank-note engraving and printing is so intimately associated with the manufacture of bank paper,

* Benjamin Franklin Bache, was publisher of *The General Advertiser*, in Franklin Court, High St., Philadelphia.

† This wire was undoubtedly intended for mending or re-facing moulds; as there were no mould makers in America at that date.

that the writer considers this a timely opportunity to refer to the services of three of the oldest men, now living, who assisted in the development of that industry. They are the survivors of a generation which co-operated with the pioneers of the art of bank-note designing and engraving, which has been developed, in this country, to the highest degree of perfection.

The writer refers to Messrs. John Sartain of Philadelphia, Henry H. Saulnier, now living in Delaware County near Ivy Mills, and William C. Smillie living in Poughkeepsie, New York.

In a late letter received from Mr. Saulnier he stated — "The Bank Note Engraving business in Philada. commenced with Murry, Draper and Fairman. Murry was a Scotchman and was considered the best engraver in this country at the time. He died about 1820, when the firm became Fairman, Draper, Underwood & Co. Mr. Fairman died, then it was Draper, Underwood, Bald & Spencer. Underwood died and Mr. Draper withdrew. Then the firm was Bald, Spencer & Hufty. Up to this last change they did most of the Bank-note Engraving of the country; although Joseph Perkins of Boston had quite a good business in what was known as Perkins' Patent Bank-notes.

"I learned letter engraving with C. G. Childs, and about 1832 Mr. Chas. Toppan, who had commenced Bank-note Engraving, kindly offered me a seat in his office and occasionally employed me to assist him, when he had more work than he could attend to. He allowed me to use the Transfer press until I was able to do all the Transferring he required; so I gave up engraving and turned all my attention to that branch of the Bank note business.

"Mr. Toppan was successful in establishing a good business, when he was joined by Mr. Draper under the firm name of Draper, Toppan & Co. After a few years Mr. Draper retired from business, when Mr. Wm. C.

Smillie and myself purchased Mr. Draper's interest in the name of Toppan, Carpenter & Co., and successfully carried on the business until all the different Companies consolidated into the American Bank Note Company.* I did not remain long in the employ of the new company. My age will be eighty-six in a few days."

Mr. Sartain's connection with that business commencing in 1832, though not long continued, was chiefly confined to the work of designing and drawing vignettes.

The following has been copied from a late letter written by him to the writer :

"It is very little that I can tell you regarding Bank-note engraving, as I only engraved one die, although I afterwards drew designs for note work, to be engraved by others. The one I engraved was done in 1832 for Mr Charles Toppan—a head of Franklin from the French portrait.

"Mr. Toppan wanted me to continue in that branch of work, but I declined, because the line manner was so very tedious compared with mezzotint, and Bank note work was obliged to be done entirely with the graver, without etching, in order that the cuts may be V-shaped down in the steel, to facilitate transferring, that is, the pressing of the soft steel of a roller into the engraved lines of the die, to be in its turn hardened as the die had previously been.

"Mr. Underwood, of the firm known as that of Fairman, Draper, Underwood & Co., applied to me to make elaborately finished drawings of fancy subjects to be engraved, as the central ornament on the face of their notes, and I did the same for a Bank note establishment in New York, through a gentleman whose name was, I think, Blanchard. But, after a time, I got tired of this occupation, because it kept me from my engraving, and I asked my friend Leutze if he would like to take my place in doing that kind of work, and he gladly undertook it.

* In 1858.

"Mr. Cousland, the letter engraver, having been associated with a Bank note firm, applied to me to name some artist that I considered first class, that they could engage to make drawings for their notes, and especially to travel south and witness the operation of the various industries peculiar to that section of the country, and embody these in his pictures for their notes. I recommended my friend Christian Schussele; and his manner of performing his task was highly satisfactory. Such notes naturally attracted the patronage of the Directors of the Southern Banks, which was the object in view."

In a late letter received from Mr. William C. Smillie he wrote "I began in the office of Rawdon, Wright & Hatch, as nearly as I can recollect, in the year 1834, in the old Exchange Building in Wall St, New York, and remained with them a year; after which I was in the employ of Casilear, Durand, Burton & Edmunds, until the failure of that firm in about a year later. During this time I had the pleasure of becoming intimate with your father, James M. Willcox, who had supplied the firm with large quantities of his paper, which was highly thought of. I ought not to go on without paying a well deserved compliment to the memory of the dear old gentleman, whom I had learned to love for his genial heart and temper, and profoundly to respect him for his high principles of honor. I have been frequently at Ivy Mills with my friend Saulnier.

"In 1836 I began an engagement with Charles Toppan, with whom John Draper had but a short time previously formed a partnership, associating with them also Joseph Longacre, under the firm name of Draper, Toppan, Longacre & Co. After a term of 12 years employment with this company, during which time Samuel Carpenter joined the firm, I was admitted as a partner in 1848, by the kind cooperation of Mr. Saulnier. I was a letter engraver, in connection with Mr. Toppan, from 1836 to 1857. I sold my interest in the firm of Toppan, Carpenter & Co to Mr.

Samuel Carpenter in 1856. In 1858 I became associated, with Edmunds & Jones, in the firm of Edmunds, Jones & Smillie. Before we got well started we were taken into the American Bank Note Company, with whom I remained 5 years. I am now 84 years old."

The following list of bank-note engravers and printers, who obtained supplies of paper from Ivy Mills, has been compiled chiefly from the few letters that have been preserved. The list is incomplete, especially after the year 1838; on account of the accidental destruction of the letters and books subsequent to that date. Only the earliest dates are given of letters; which show many changes in the names of firms.

Although many banks purchased their supplies of paper, directly from the paper-makers, the larger portion of bank paper manufactured was sold to the engravers and printers, after the first mentioned firm was established.

1824 July 14th	Fairman, Draper, Underwood & Co.	Philada, Pa.
1826 Aug. 19th	Tracy R. Edson	New York, N. Y.
" Nov 21st	Samuel Stiles	Utica, N. Y.
1828 Feb 22d	A. B. & C. Durand. Wright & Co	New York, N. Y.
" Aug 14th	Durand, Perkins & Co	"
" July 29th	Charles P. Harrison	"
" Dec. 13th	Rawdon, Wright & Co	"
1829 July 1st	Robert Bald	Philada, Pa.
1830 Dec 8th	Draper, Underwood, Bald & Spencer	"
" Sep 1st	Charles Toppan & Co	"
1831 Apr 9th	Balch, Stiles, Wright & Co	New York, N. Y.
1832 Jan 6th	Jocelyn, Darling & Co	"
" Apr 20th	Rawdon, Wright, Hatch & Co	"
1833 Feb 19th	V. Balch & Co	"
" Apr 15th	N. & S. S. Jocelyn	New Haven, Conn.
" " 30th	New England Bank Note Company	Boston, Mass.

1834	Apr	11th	Casilear, Durand, Burton & Edmunds	New York, N. Y.
1835	Mar	1st	Draper, Toppan, Long-acre & Co	Philada, Pa.
1836	Sep	21st	Burton & Edmunds	New York, N. Y.
	Oct	10th	Terry, Pelton & Co	Boston, Mass.
1837	Feb	7th	Burton, Gurley & Edmunds	New York, N. Y.
	Nov	17th	Burton & Gurley	"
1838	Jan	30th	S. Stiles, Sherman & Smith	"
1839	Jan	5th	Durand & Co	"
	Mar	4th	Underwood, Bald, Spencer & Hufty	Philada, Pa.
	Apr	18th	Nathaniel Perkins	Boston, Mass.
	Sep	30th	Western Bank Note Company. [Woodruff & Hammond.]	Cincinnati, O.
	Nov	5th	Hall, Packard & Cushman [afterwards succeeded by John E. Gavit]	Albany, N. Y.
1850	Oct		Toppan, Carpenter, Casilear & Co	Philada, Pa. New York, N. Y. and Cincinnati, O.
			Rawdon, Wright, Hatch & Edson	" " "
			Danforth, Bald & Co	" "
			Wellstood, Benson & Hanks	"
			Draper, Welsh & Co	Philada, Pa.
1853	Dec		Danforth, Wright & Co	Philada, Pa. and New York, N. Y.
			Wellstood, Hanks, Hay & Whiting	"
			Durand, Hammond & Mason	
1854			Toppan, Carpenter & Co	Philada, Pa. and New York, N. Y.

In 1858 the various firms of the country combined, and formed the American Bank Note Company, which is still in successful operation.

No nation has ever produced such an array of inventive genius, and skill in designing and execution, in the art of

engraving for bank notes, as is represented in the persons mentioned in the above list.

A list of the standard sizes of moulds, used in the manufacture of hand-made paper, is here given; as it may possess a future historical value. The paper usually contracted in size, to the amount of three or four per cent, in the process of drying. Bank paper was made on foolscap moulds.

Foolscap	14¼x16¾ inches	Extra Royal	21½x25½
Littrice	15¼x16¾	Super Royal	20¼x27½
Demy	16 x21	Imperial	22½x30½
Post	17 x21½	Manslaughter	22 x32
Medium	18 x23	Atlas	26½x33
Royal	21 x24		

A custom now obsolete at least in the United States, formerly prevailed in the hand-made paper mills. The papers were assorted into four grades, which were styled in the order of their perfection.*

Whole,
First retree,
Second retree,
Third retree, or broken.

Each ream of paper, of any grade, consisted of 18 quires of that particular quality and 2 quires of broken sheets; which latter were placed, one on top and one on the bottom of each ream. A reduction was made in the price of the paper according to its reduced quality. Many newspapers were printed on paper of the second or third quality.

After the death of Thomas Willcox, in 1779, his personal property was appraised by Persr. Frazer and Norris Jones. In the inventory were included eight slaves, whose names

* This custom did not apply to bank-note paper.

are here inserted, to show their estimated values at that period of our history.

" A molatto man named Sylvester, to serve 3 years.	£ 20.0
" A negro man named Prince.	30.0
" A negro man named Cæsar.	100.0
" A negro woman named Peg.	55.0
" A negro girl named Luce. [13 years old, see below.]	60.0
" A negro boy named Tim.	35 0
" One negro boy named Luke.	35.0
" Young girl Suck.	20.0

According to the family traditional account, several of the above mentioned slaves, including Cæsar, were purchased by Thomas Willcox from a captain of a slave-trading vessel that was anchored in Delaware Bay.

The following baptisms, registered at St. Joseph's Church in Philadelphia,* attest the solicitude of Thomas Willcox for the spiritual welfare of his slaves.

" May 4th, 1767. At Concord, Lucie, of Sylvester, born Apr. 7th, sponsors Thomas and Elizabeth Willcox, Slave of Wilcox.†

" Jan. 10th 1770. Cæsar, servant of Thomas Willcox, adult, in Chester County.

" Apr. 1st 1770. Ruth of Sylvester and Margaret, slaves of Thomas Willcox, born Mar. 5th."

The following has been copied from the register at St. Mary's Church in Philadelphia.

" 1789. Aug. 10th at Concord, by Rev. Fras Beeston, negroes Prince and Lucy."

Cæsar was a faithful man and an intelligent workman. He worked, as a papermaker, in the mill, from May 1798 to January 1804. He remained in the service of the family until he was superannuated, and was then supported by James M. Willcox, until the former died in November

* *Records Amer. Cath. Hist. Society*, vol. 1.

† These baptisms were performed, by Rev. F. Farmer, at the house of Thomas Willcox.

1834. He was buried in the family cemetery at Ivy Mills. Prince's name appears among the workmen, in the mill, from July, 1800, until September, 1801.

During the latter part of her life "Suck," whose married name was Norman, lived near Chester, where she died about 1845.

The following is a list of the foremen who superintended the work at the paper mill after the year 1790.

Thomas Willcox*	from January 4th,	1790 to April 1st,	1810
John Bowers	" April 1st,	1810 " August 1st,	1822
John Gilmore	" August 1st,	1822 " September 28th,	1828
John Mooney	" September 28th,	1828 " October 15th,	1834
Thomas Mooney	" October 20th,	1834 " June 25th,	1853
John Palmer	" June 27th,	1853 " October 31st,	1865

The writer has been able to ascertain that the names of the following persons have appeared on the list of employees, at the mill, for a long time. In some cases of long service there were some intermissions.

John Bowers appeared on the list from October 1st, 1788, to January 17th, 1789; & from December 1st, 1799, to Aug. 21st, 1802; and from June, 1808 to August, 1822.

Date of first appearance on the list.			Last date on the list.	
Bishop Bratton	June,	1810	May,	1838
William Bowers	April,	1808	August,	1838
Mary Bowers	April,	1808	March,	1828
Thomas Cochran	May,	1810	February,	1826
Mary Evans	July,	1817	November,	1841
John Mooney	November,	1805	October,	1834
Betsy Mooney	June,	1806	October,	1854
Margaret Mills	June,	1816	December,	1837
William Pierce	June,	1822	November,	1849

William Pyle, when a boy, was apprenticed to James M. Willcox in July, 1827. After many years of service, at Ivy Mills, he removed to Glen Mills, where he was

* Thomas Willcox, a nephew of Mark Willcox, owned a paper mill on Ridley Creek, near the present borough of Media, which he sold in February, 1784.

employed in one of the paper mills, until February, 1885. He died in August, 1888. He was esteemed through his career of life as a faithful, industrious and skilful paper-maker.

MEMORANDUM. NO. I.

In a late letter received from Mr. George Escol Sellers, referred to before, dated, near Chattanooga, on December 2d, he stated—"I cannot fix the date of my first visit to Ivy Mill nearer than about 1820, and that only by the recollection of having driven my Grand Father from Mill Bank with a certain pair of horses . . .

"The visit was not one of business, but to see his friend Mark Willcox, who was then recovering from a spell of illness. I was turned over to a son to be shown the mill and its operation. There was much talk between the friends relating to early paper-making, which greatly interested me, but which I cannot recall. Your Grand Father greatly interested me by telling me a Revolutionary incident of a foraging party from the British Army to his Father's potatoe patch.

"During the existence of the old United States Bank, Nicholas Biddle and also Mr. Chauncey President of the Penna. Bank, took great interest in the manufacture of Bank paper, hoping by devices in it to render the work of the counterfeiters more difficult. The watermark devices then on all hand-made-paper were exclusively my Grand Father's work. It was, as near as I can recollect, about the year 1821 or 22 that my elder Brother Charles relieved him. Then three years later it fell to my portion of the work and continued to be until 1839, when machine made paper had about superceded hand-made paper . . .

"I think it was at the Ivy Mill that the first introduction of crimson silk shreds was made, and a dark shade on the paper in addition to the usual light line watermarks.

No. II.—Mr. Sellers stated, in his letter, that he is now in his 89th year of age. He also wrote that about the

time of the organization of the United States Bank of Penna. Mr. Biddle contemplated making their own paper, by such intricate and costly machinery, that it would be beyond the reach of the counterfeiters . . . Mr. Biddle had many conferences with his father on the subject, at which he was present. Mr. Sellers then went to Ivy Mills, at that time working on bank-note paper, and made some experiments for Mr. Biddle, which he describes in detail.

Mr. Sellers also stated that "at the Willcox Ivy Mill many devices in water-marks were used and some experiments made in making paper that, in addition to the engraving, should give security against counterfeiting."

