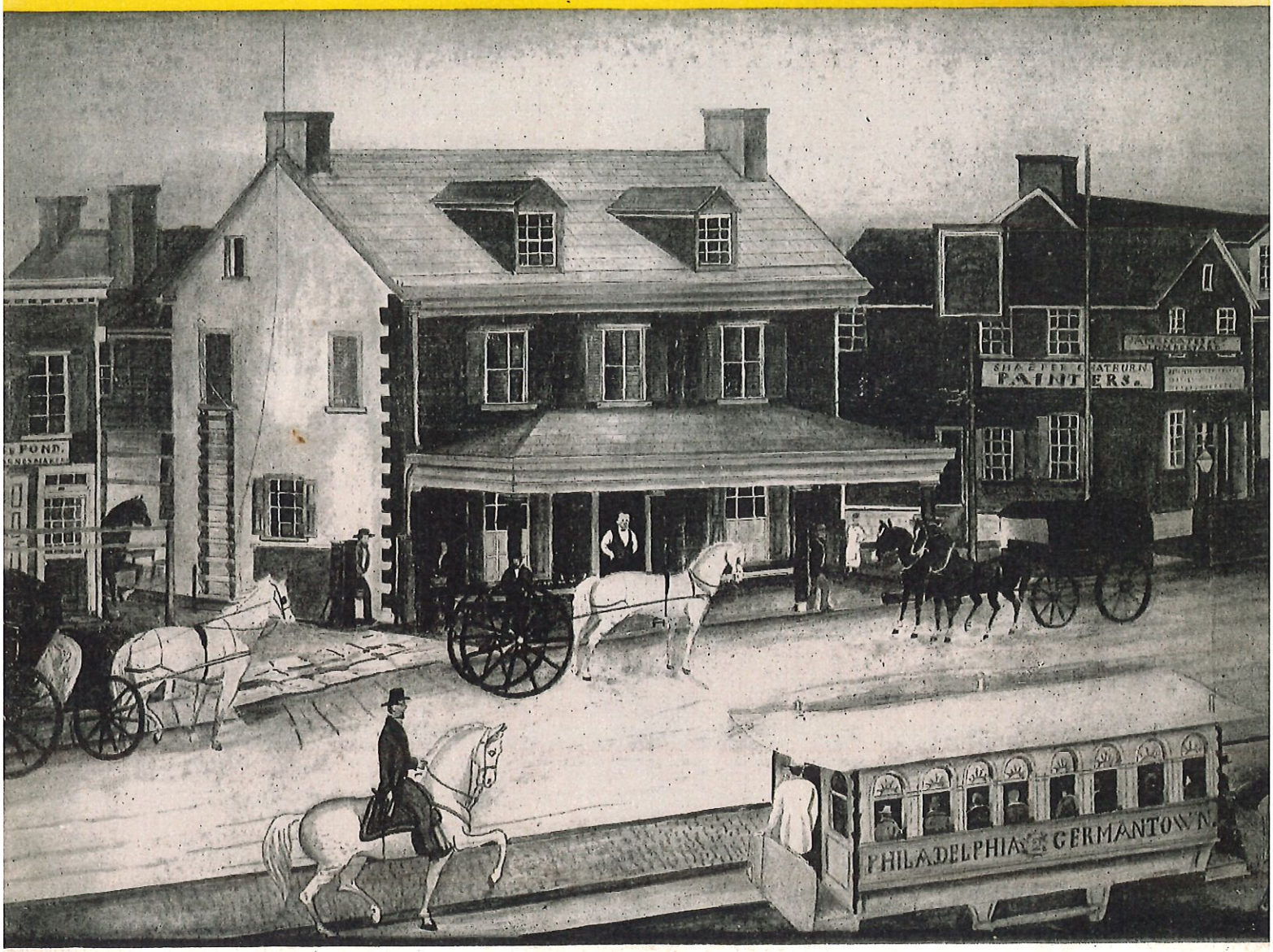
GERMANTOWNE CRIER



THE OLD GENERAL WAYNE HOTEL

Southwest Corner of Germantown Avenue and Manheim Street

The original, in color, was presented by Mr. Clarence Stallman to the Germantown Historical Society

Published Quarterly
GERMANTOWN HISTORICAL SOCIETY

Volume 4 . . . Number 1

25c Per Copy

The Rittenhouse Paper Mill and Its Founders

By George Allen

ALTHOUGH the first printing press established in the English colonies was that of Stephen Daye, in Cambridge, Massachusetts, towards the end of 1638 or the beginning of 1639, it was not until fifty years later, in 1690, that the first mill for the manufacture of paper was erected in the colonies.

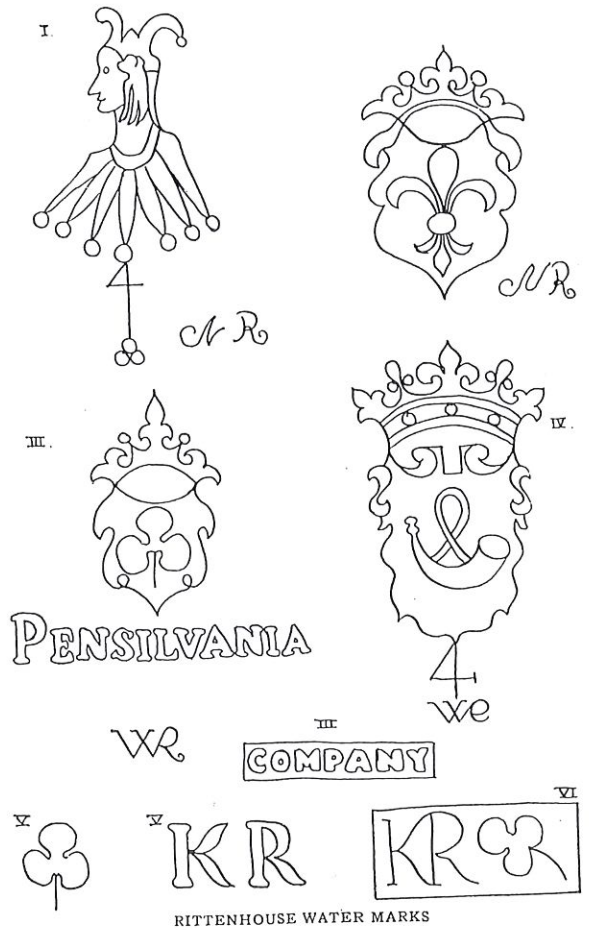
While it is true that several persons were concerned with financing, building, and operating the first American paper mill, the most important roles in the venture belong to William (or Willem, or Wilhelm) Rittenhouse (or Rittinghuysen, or Rittershausen, or Ryttinghuisen, etc.) and his son, Nicholas (or Klaus, in German, Klaas, in Dutch, and Claus, in English), born Germans but naturalized in the Netherlands.

A rather enthusiastic descendant of William Rittenhouse once claimed that he was of Hapsburg descent, and likewise of the lineage of Emperor Maximilian I. More accurate research, however, has shown that all his ancestors were of quite middle-class origin. He was born in the year 1644, the son of George and Maria (Hagerhoff) Rittenhouse, in the Principality of Broich, near the city of Mülheim on the Ruhr, Germany, where his mother and brother, Heinrich Nicholaus, and a sister, were living as late as 1678. At this time and for years later the family spelled their name "Rittinghuysen." Persons of the same name still live in the province of Westfalen, in the neighborhood of Lüdenscheid.

In the beginning of the seventeenth century the Rittenhouse family may have belonged to the Reformed faith, then predominant in their region in Germany. However towards the middle of the century there was a great religious upheaval. The minister in those parts, Theodore Undereyck, introduced the teaching of Jean de Labadie into the region and opposed the Lutheran Count Wilhelm Wirich von Broich. As a result of the unpleasantness caused by their disagreement in things religious, many of the followers of the new faith left the district, William Rittenhouse and his family possibly being among them.

Very little is known of the activities of William Rittenhouse at this time. It is possible that he learned the trade of paper-maker in the third oldest mill of the Rhineland, that of Adolph Vorster, in Broich, opposite Mülheim. About the year 1670, however, he left this region, presumably in order to engage in the manufacture of paper at Arnheim, Holland, and perhaps spurred on by the religious differences of his sect. William Barton, the biographer of David Rittenhouse, was told in 1778 by Adrian Rittinghuysen, an old man at the time, that his father, Heinrich Nicholaus, who was also the brother of William, had practiced the paper-making trade in Arnheim, as had others in his family.

The first precise information we have concerning William Rittenhouse is from a German document, dated July 25, 1678, in Broich, in answer to a request made by William, now a resident of Amsterdam, for a certificate telling the date of his birth, in order to use it "at the proper place". His brother, Heinrich Nicholaus Rittenhouse, as well as his sister and mother, here state that he was born in 1644. This request was made so that William might become a citizen of Amsterdam. A Dutch document of June 23, 1679, shows that he took the oath of



RITTENHOUSE WATER MARKS

I. 1692; II. 1694; III. 1696; IV. 1698-1700; V. 1716; VI. 1719.

citizenship on that day, subscribing himself as "Willem Ruddinghuysen, of Mülheim, papermaker." The words "of Mülheim," of course, refer to his birthplace, not his most recent place of residence.

According to family tradition, William Rittenhouse, with his family, moved to New York while the Dutch were still in power. But as England took permanent control of that region in 1674, and, as we have just seen, Rittenhouse was still in Amsterdam in 1679, this statement cannot be true. It seems more probable that Rittenhouse, with his wife, his sons, Gerhard and Nicholas (or Klaus, etc.), and his daughter, Elizabeth, emigrated to New York in 1688 or the early part of 1689. A genealogical record of about 1800 in the possession of William Barton said that they arrived there in 1690, and that, while they were there, Nicholas married Wilhelmina De Wees, sister of William De Wees, both families having arrived at about the same time, and that later they moved to the neighborhood of Philadelphia. However, a New York church record says that Nicholas Rittenhouse, "a young man of Arnheim, living on the Delaware River," married Wilhelmina De Wees in the local Reformed church in 1689, so that they must have known each other in Holland or met on the passage over. Perhaps William De Wees obtained a temporary position in New York, while living with his sister and the rest of his family, and Nicholas came to Philadelphia with his father and their family, in order to prepare a home for the bride-to-be, later going back to New York to marry her and then bring her with him to Germantown. As early as 1689 we also find William Rittenhouse and his son owning lots in Germantown.

Whatever the exact date of their arrival, it is certain that the Rittenhouse family did not remain in New York for a long time. For although there were persons there who spoke their language, the Rittenhouses could have found no steady market for the trade which they surely meant to establish, once they had the necessary backing; for there was, as yet, no printing establishment nearer than Philadelphia.

It is interesting to speculate how much the Rittenhouses knew of the newly established city on the Delaware and its founder, William Penn. The latter had sent many tracts into Holland, among other places, detailing the advantages of his recently acquired land in America, and it is probable that New York was a mere stopping-place for the family, until it could find transportation to the province which was described in the most flattering words by any number of pamphlets circulated in Holland.

Once in Philadelphia, the Rittenhouses seem to have lost little time in finding capital and a market for their trade. It is too much to suppose, without any confirmatory evidence, that William Bradford, the printer, encouraged them to come over to the New World with an offer of financial help. However after they found backers for their enterprise, among them Bradford, they began to build a mill, towards the end of 1690. The first notice of the establishment of the mill in the neighborhood of Philadelphia is found in one of the countless tracts printed for the encouragement of colonization in Pennsylvania, entitled *Some Letters and an Abstract of Letters from Pennsylvania* (London, 1691), in which letters were printed telling of the progress made in the colony and the advantages and benefits which were to be had from migrating. Among the abstracts is a sentence from a letter, written by Bradford, the printer, to a friend in London, on November 18, 1690, stating that "Samuel Carpenter and I are Building a Paper-Mill about a Mile from thy Mills at Skulkill, and hope we shall have Paper within less than four months." From this letter it can be seen that, though the mill was begun in 1690, no paper could possibly have been produced before 1691.

The next writer to mention the new mill is Richard Frame, an early settler of Philadelphia and Pennsylvania's first poet, in a poem entitled *A Short Description of Pennsylvania, Or, A Relation What things are known, enjoyed, and like to be discovered in in* [sic] *the said Province.* This poetic curiosity was printed at Philadelphia in 1692 by William Bradford. However little we may like doggerel verse, we may pardon Frame this once because of the wealth of information which he gives on the mill. After discussing other important sections of Pennsylvania, he turns to the village of Germantown and says:

> The German-Town, of which I spoke before,
> Which is, at least in length one Mile or more,
> Where lives High-German People, and Low-Dutch,
> Whose Trade in weaving Linen Cloth is much.
> There grows the Flax, as also you may know,
> That from the same they do derive the Tow;
> Their trade fits well within this Habitation,
> We find Convenience for their Occasion.
> One Trade brings in imployment for another,
> So that we may suppose each Trade a Brother;
> From Linen Rags good Paper doth derive,
> The first Trade keeps the second Trade alive;
> Without the first, the second cannot be,
> Therefore since these two can so well agree,
> Convenience doth appear to place them nigh
> One in *German-Town*, t'other hard by
> A *Paper-Mill* near *German-Town* doth stand,
> So that the Flax, which first springs from the Land,
> First Flax, then Yarn, and then they must begin
> To weave the same, which they took pains to spin.
> Also, when on our backs it is well worn,
> Some of the same remains Ragged and Torn;
> Then of the Rags our Paper it is made,
> Which in process of time dost waste and fade:
> So, what comes from the Earth, appeareth plain,
> The same in Time, returns to Earth again.

In 1696 another writer, Judge John Holme, wrote a poem, equally curious, in which he gives a description of every item in the country he could possibly squeeze into couplets. The poem, entitled "A True Relation of the Flourishing State of Pensilvania," refers to the paper mill in the following words:

(*Please turn to page 23*)

RITTENHOUSE PAPER MILL

(*Continued from page 15*)

Here dwelt a printer and I find
That he can both print books and bind;
He wants not paper, ink nor skill
He's owner of a paper mill.
The paper mill is here hard by
And makes good paper frequently,
But the printer, as I do here tell,
Is gone into New York to dwell.
No doubt but he will lay up bags
If he can get good store of rags.
Kind friend, when thy old shirt is rent
Let it to th' paper mill be sent.

- To be continued in our next issue -

A BALLAD OF THE MILLS OF DAVID RITTENHOUSE

Though still within his little valley crumbling
The mills of David Rittenhouse are down,
Snow falls as ever where the silent lumbering
Oxen trudged the Ridge Road into town.

The trees now wrenched and stiffened near the Mill Creek
(The mills of David Rittenhouse are down)
Sheathe, like him, in a brittle fit of sudden quick-
Silver that is whitening on the town.

The miller David Rittenhouse was chary; now
He wears a gown more plain than any gown:
He changes with the seasons, who was wary
(The mills, the mills of Rittenhouse are down!)

His ruin weighs like winter on our town.

CLAUDE F. KOCH

THE OLD TOWN HALL

(*Continued from page 10*)

to $85,000—part for street improvement, part for the Town Hall.

Of course all this brought criticism from the city and the city papers asked why Germantown needed a Town Hall anyway? The answer was self-evident. Why, indeed, should Germantown alone reap no benefit from the merger?

In March, 1854 the contract was awarded, in June the Town Council ceased to function and the City of Philadelphia added a further $22,000 to complete the structure which was finished in August, 1855.

One of the first benefits of the new consolidation was the appointment of a police force. Twelve policemen were apportioned to the new 22nd Ward with headquarters in the Town Hall and cells in the basement. Uniforms were considered undemocratic and met with considerable opposition when adopted in 1858.

In October, 1859 regular street car service to Germantown from Philadelphia was established—the run from 8th Street to Phil-Ellena. In December, 1859 the average number of passengers daily was 2,500.

On April 15, 1861 President Lincoln issued the first call for 75,000 volunteers. The day before had seen the surrender of Fort Sumter.

A meeting in the Town Hall was held four days later where resolutions were passed promising care for the families of men who enlisted. Then came a meeting of women in the Town Hall to organize for relief work.

From then on Germantown was a hive of activity, egiments were formed and drilled, work for soldier comfort and dependent relief increased each month. It is a thrilling story in which the names of old Germantown families occur again and again.

In June, 1862 the Town Hall was offered and accepted as a hospital. Captain Biddle's home guard, who had been drilling in the Town Hall, gave the funds in their treasury to equip the Hospital and later a wooden addition was built and then a guardhouse, kitchen and bath house. It was named the Cuyler Hospital and was in active service until the close of the War. When finally closed in May, 1865 the remaining patients were transferred to the Mower Hospital at Mermaid Lane.

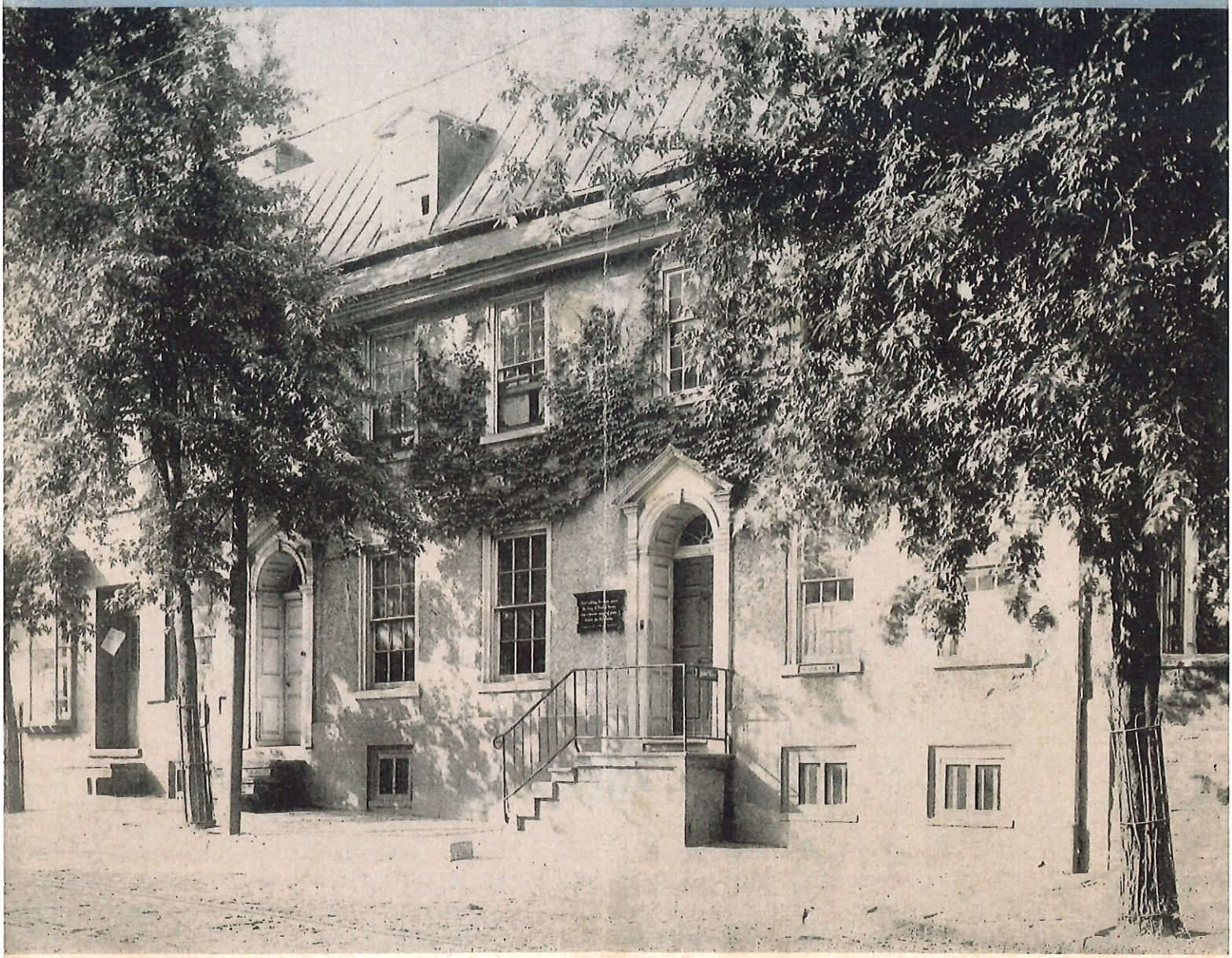
The jubilation following the glorious news of Lee's surrender on April 9th was, as is the end of all Wars, mingled with sorrow—many, many of Germantown's finest did not come back, though through the Spring of '65 men in uniform were seen everywhere. By the Fall the tempo of life had returned almost to normal.

At the Town Hall in May, 1866 a group of survivors organized a unit of the "Boys in Blue." When the Grand Army of the Republic was formed this unit joined with the national organization becoming Post 6—later it was called Ellis Post in honor of the first man from Germantown killed in the War.

It is Germantown's most worthy habit to talk of Pastorius and the first thirteen, of Sower and his early Bible, of Washington and the famous Battle—perhaps it is Mr. Pulinger's charming picture, or Dr. Wister's human memoirs which have now turned our thoughts for a brief moment to the mid-19th century and a little nostalgic glance at the old Town Hall.

The facts of this sketch were largely drawn from Mr. Hocker's authoritive book on Germantown.

GERMANTOWNE CRIER

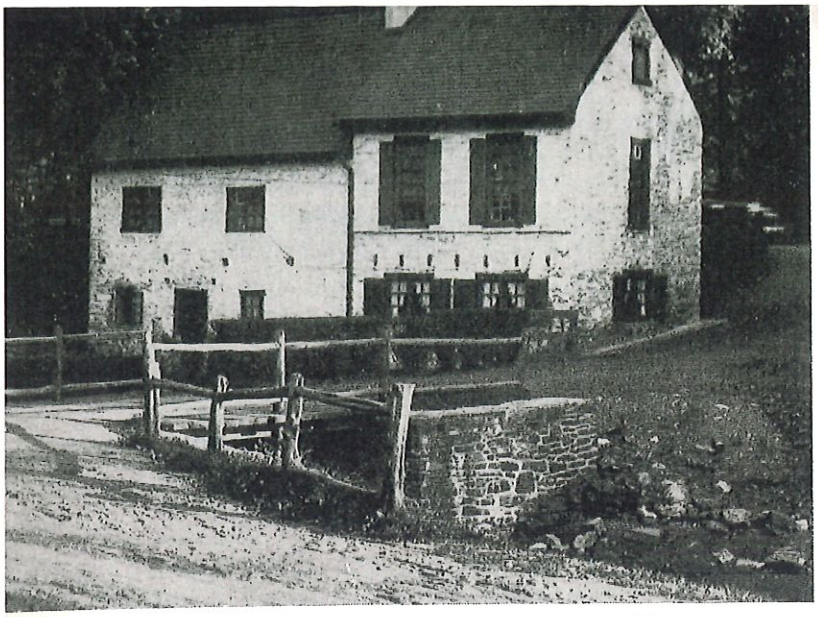


KING OF PRUSSIA TAVERN
5516-18-20 Germantown Avenue

Published Quarterly
GERMANTOWN HISTORICAL SOCIETY

Volume 4 . . . Number 2

25c Per Copy



Rittenhouse Homestead on Paper Mill Run erected 1707 (Monoshone Creek)

Rittenhouse Paper Mills

(Part Two)

By George Allen

Gabriel Thomas, who lived in Pennsylvania for some time, write *An Historical and Geographical Account of the Province and Country of Pennsylvania; and of West-New-Jersey in America.* (London, 1698.) In this tract he says, "All sorts of very good *Paper* are made in the *German-town;* as also very fine *German Linen*, such as no Person of Quality need be asham'd to wear. . . . " Here the word "Germantown" undoubtedly signifies Roxborough, in which the mill actually was built, as well as Germantown proper, since Roxborough as yet had no definite name, and the mill was only a short distance from the Germantown line. It is interesting to note in passing, that while a number of English writers mention the new mill, a translation of this book by Thomas into German contains the only reference to its existence in that tongue, which was also the native language of the founder.

Although their names were not mentioned at all, it is evident that the paper mill established by the Rittenhouses is referred to in all these extracts. But the first actual mention of the Rittenhouses in Philadelphia, besides the marriage entry of Nicholas and a statement that they owned several lots in Germantown in 1689, is found among the names of the so-called "sixty-four of the first Germantown Inhabitants," who were naturalized by Thomas Lloyd, Deputy Governor of Pennsylvania, on May 7, 1691.

It would seem that William Rittenhouse, and his son Nicholas, almost immediately after they arrived, set about to find persons who would help finance a paper mill. The beginning of the actual erection of the mill took place about the month of September, 1690, although the title to the land on which the mill was built bears the date of "the Ninth day of the twelfth month called February, in the fourth year of the reign of Queen Anne over England, etc., Anno Domini 1705–6." The grantor is Samuel Carpenter, of Philadelphia, and the grantee is William Rittenhouse, who by that time was sole owner of the mill. The lease was to extend for a period of nine hundred and seventy-five years from September 29, 1705, for fifteen years had already elapsed from the original figure of nine hundred and ninety years, which term had apparently been set only by a verbal agreement between Rittenhouse and Carpenter, and was finally made into a written contract at this late date.

The land had originally belonged to William Harwood, being part of a much larger tract. He leased one hundred acres, of which this plot, mainly of meadow-land and extending from the township line to the Wissahickon Creek, was twenty, to Carpenter. At that time it was the custom to rent land for a fixed amount, with a stipulation that the leaseholder might buy it after a certain number of years. Before the land was actually bought from Harwood, on September 29, 1690, Carpenter arranged verbally to rent a portion of it to Rittenhouse, and company. But the actual document, showing the terms of the transaction, was not drawn up until fifteen years later, when the original partnership had been dissolved and William Rittenhouse owned all the shares of stock.

The partners of the Rittenhouses in this venture were very important men of their day. Samuel Carpenter and Robert Turner were extensive land owners, as well as friends and advisers of William Penn; Thomas Tresse was a rich ironmonger; and William Bradford was the first printer to print in the Middle Colonies. But, however important these men were to the order of things, it is obvious that the most important member of the concern was William Rittenhouse. with his son Nicholas.

From the very beginning the mill was run by a partnership. A fair amount of money was necessary for such a venture, for acquiring land, wood, and tools (which probably had to be imported, unless the Rittenhouses brought theirs with them), and there were many advantages in having a group of men as investors, at least until the mill was firmly established. It is not known precisely why the partnership was dissolved, but, some time before 1705, William Rittenhouse managed to purchase the shares in the hands of the other men and become sole owner. Since he was a practical man, and capable of making his mill run profitably, it was only logical for him to try to purchase the shares of the others as soon as possible. Presumably the mill was under the management of William Rittenhouse and his son, Nicholas, who later became a partner with his father, and, upon his father's death, gained sole ownership of the mill. The Rittenhouses suceeded in buying Turner's

(Continued on page 18)

RITTENHOUSE PAPER MILL

(*Continued from page 16*)

share about 1697, Tresse's about 1701, shortly after the destruction of the mill by a freshet, and Bradford's in 1704.

Shortly after the erection of the mill Bradford managed to offend the Quaker authorities, always a simple task, first, because he printed a charter for which, they said, he had no permission, and then, by printing a pamphlet written by George Keith, a seceding Scotch Quaker and, according to contemporary Quaker notions, one of the foremost local emissaries of the Devil. In 1693 Bradford left Philadelphia for the more salubrious regions of New York City where in May or June, 1693, he established the first printing press in that colony. He still kept his interest in the paper mill, however, and depended on it for much of his paper supply. Unfortunately, because he was so remote from the mill, he was forced, in 1697, to rent his share to the Rittenhouses, father and son. The original lease, with the water-mark WR, the initials of the maker's name, is still preserved. From this it can be seen that Bradford was to have, for his share of the mill, "ye full quantity of Seven Ream of printing paper, Two Ream of good writing paper, and two Ream of blue paper," totaling six pounds, two shillings in value, per annum, and a monopoly of all the printing paper produced at the mill from September 1, 1697 to September 1, 1707. For their share the Rittenhouses promised to keep the mill in good repair at their own expense.

The quantity of paper made at the mill is not stated, but it is possible to guess approximately what the capacity of the mill was. Horatio Gates Jones, who first studied the subject, conjectured that from twelve to fifteen hundred reams of paper of all kinds were made there in the course of a year, and this is probably fairly near the correct amount.

Until a short time ago it had not been determined definitely where, on the original tract of twenty acres, the mill was first located. A good many years ago a writer in the *Sunday Dispatch* of Philadelphia said that a descendant of Rittenhouse told him that the first mill was built on Crab Creek, later called Tulpehocken Creek, one quarter of a mile northeast of the Wissahickon Creek. While it is true that Paper Mill Run (formerly Monoshone Creek) is more of a "creek" than a "run," and Crab Creek is only a "run," nevertheless the original lease would seem to settle the matter. But as no sign of the original building or even of the second structure could be seen, the exact location was for years a matter of conjecture. In 1933, however, Mr. James F. Magee, Jr., of Philadelphia, a specialist on early American watermarks, made a most interesting discovery. About three hundred and thirty feet up-stream, and on the other side of the river from the house, still standing, built by the Rittenhouses in 1707, he found a small rock, the top of which had been bored at two places, making holes of about three inches depth. Since he found the rock at a point not too far below the confluence of two smaller streams, where a good deal more water flows than further up-stream, Mr. Magee came to the conclusion that this was the site of the first, as well as the second, mill, the second having been built on or very near the site of the first. The stone probably served to hold firm a post, and keep it from sinking.

The stone building which is still standing near the site of the old mill in Fairmount Park is commonly called the Rittenhouse mill. It was erected in 1707 by the father, William, and the son, Nicholas (i. e., W
Claus), as is evident from the inscription C R on the
1707
one side of the house. This quaint structure, however, was always used as a residence and never for any other purpose. It is perhaps better known as the birthplace of David Rittenhouse, astronomer, than the home of the country's earliest paper-makers.

There is no pictire or description of the earliest mills extant, and it is not known exactly how they looked. According to William McCulloch, in a letter to Isaiah Thomas, an early writer on the history of printing, the original mill was built of logs, and the building extended over an undershot water-wheel, as there was no dam or race. From a statement made by Nicholas Rittenhouse to William Bradford, after a freshet had washed away the mill, it can be seen that much "scantling" and board, presumably clapboard, was saved from the wreckage. Because of this evidence many persons are apt, against their better judgment, to agree with the none too trustworthy McCulloch that the mill was made of logs, and covered with clapboard, and probably extended directly over the stream, in this way being more likely to be swept away by a freshet than if it were on the shore entirely, and had a small run to supply the water for the wheel. The structure itself was also, no doubt, quite small, and probably with a loft in it in which to dry the finished paper.

We do not know exactly how the Rittenhouses made the paper in their mill. However, since they learned their trade in Germany or Holland, it is obvious that the methods used in their mill would be as near to those of the men in these countries as their material and knowledge would permit. The mill was, as we have seen, apparently built of logs, near or directly over Paper Mill Run, both in order to have water to operate the trip hammer used for pounding the pulp, and in order to dampen the mass of rags for decomposition. The mill was either set part on the bank and part hanging out a small distance over the surface of the water, or the entire structure was built on the bank except the water-wheel, which naturally reached out a short distance into the stream or run. The essentials for the finer paper were clean, white linen rags, and an abundance of

clear, flowing water, free from too much mineral matter. At this period the rags were thrown into a water-filled trough, and pounded by a stamping machine run by a trip hammer, being slowly beaten until they became a thin, fibrous pulp. They had previously been placed in a vat, in order to ferment and disintegrate, so that the trituration might make the mass more fluid. When the mass had been pounded to a proper consistency, it was taken to a large vat, where the "vatman" stood with his mould, merely a rectangular frame with a bottom of fine wires, closely set, running the length of the frame, and crossed by coarser wires, widely set, running its width. The skill of the paper-maker made up for the extremely primitive tools which he used. For he had to take up the proper amount of pulp into the mould, give it a peculiar twist to the right and left, in order to have the pulp spread evenly and drain properly, and remove the frame from the mould; then he gave the mould to a second man, called a "coucher," who drained more of the water from the paper and then, with a deft movement, flipped the thin, saturated

Rittenhouse Paper Mill on Monoshone Creek

layer of pulp on a felt pad slightly larger than the sheet of paper it held. Another worker took each sheet and sandwiched it between two felt pads, until he had one hundred and forty-four sheets, or a "quire" of paper. When he had six quires, or a "post," he placed them under a screw press, something like a cider mill, in order to squeeze out the excess water. Then all the workers were summoned to help turn the press, by means of a long lever, on which they all tugged. Next the papers were taken out of the felt pads and pressed all on one pile, in order to squeeze out the water that remained. After this the "layman" took four or five pieces of still moist paper together and placed them upon a length of hair rope, coated with beeswax, in a loft or some other place where the air was pure and free from dust. Here the paper remained until it was sufficiently dried, at which time it was dipped into a sizing, to make it impervious to ink. Several days were necessary to produce a specimen of dry, finished paper. If three men worked for the usual long hours, they might be able to make a maximum of about twenty posts, or approximately five-and-a-half reams of paper in a day. This process of making paper was in main most likely that in use at the Rittenhouse paper mill.

We know exactly what the price of paper then was, for in the contract between William Bradford and William Rittenhouse, the price, as of 1697, was "y^{e} writing paper to be at 20^{s} [per ream] and y^{e} brown paper at 6^{s} pr. Ream."

Before the introduction of machinery, from four-and-a-half to five-and-a-half reams of paper of the size of twenty by thirty inches was a day's work for three men working together. But while the yearly output of this one mill was hardly more than fifteen hundred reams, and quite possibly less, the importance of such an amount on the colonial market was enormous. Formerly, Bradford was compelled to import his entire supply from abroad, especially from England and the Low Lands, but now he could depend upon the larger part of the production of the new mill for his own use, while some of the paper would be retailed in Philadelphia for use as letters, account books, and for other miscellaneous purposes.

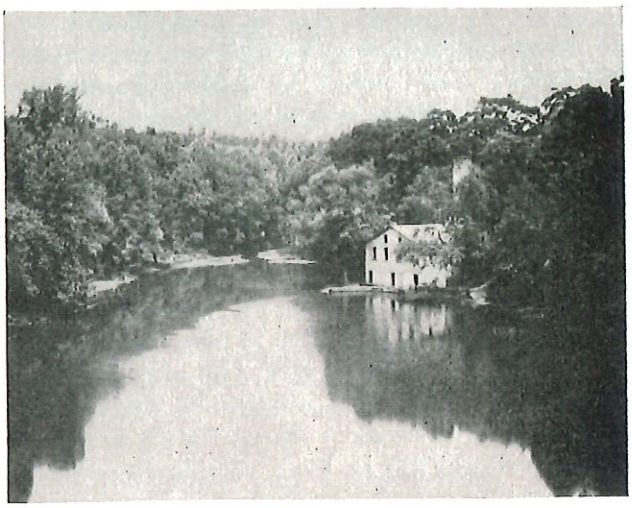
Several kinds of paper were made at the mill, including writing, printing, brown, and blue paper, as well as pasteboard. The product of the Rittenhouse mill at this time was excellent, not being discolored or brittle. Many of the books and almanacs which Bradford printed are made from it, as well as many early Philadelphia documents.

The subject of the water-marks in use at the mill in its first years is a separate study in itself. Probably the original paper-making moulds in use at the mill were brought over from Holland, or secured from there after the Rittenhouses arrived here. They were doubtless plain moulds, with no netting for water-marks. A skilled man, however, could easily have filled in the desired design. A water-mark is produced by wires bent to the shape or design required, and sewed to the surface of the mould, so as to make the paper thinner in the place touched by the mould. The paper, upon being held up to the light, then gives much the effect of a silhouette.

We cannot determine with absolute accuracy which water-marks were first used at the Rittenhouse mill. The best we can do is to find pieces of water-marked paper which were used as documents, letters, or in books, and then determine which are found on the earliest dated paper. After a careful study of the subject, Mr. Magee has found that the first water-mark in use was a fool's head over a figure 4, which is in turn placed over three balls, placed much in the same position as the well-known pawnbroker's

symbol, and having the letters NR, for Nicholas Rittenhouse, on the other side of the paper. This is found on paper of the foolscap size, the water-mark having given the name to the size. Mr. Magee has seen this design on paper dated as early as 1692. The second symbol was one with the word COMPANY, surrounded by a rectangular frame, and referring to the original partnership. The effect is none too professional looking, and the form may have been made by one of the workmen who was not, we may be sure, too skilled at making patterns on wire. This design is seen on paper from 1696 until about 1704, when Bradford, the last shareholder outside of the family, sold his interest in the mill, at which time we may suppose the design was discontinued. Also dating from the year 1696 is a water-mark with the ligatured monogram WR, the initials of the founder on one half of the sheet, while on the other half is the clover-leaf, trefoil, or *klee-blatt*, inside a shield, and surmounted by a kind of crown. Beneath the shield, in outline letters, is the word "Pensilvania." According to Mr. Dard Hunter, an authority on paper-making, this symbol shows the Dutch and French influence, for this design dates from about 1460, first appearing on French-made paper, and later on paper made in the Low Countries. By a series of metamorphoses it changed from a bull's head water-mark. The crown-and-shield with the fleur-de-lis represented the arms of France, and this design was often used by other paper-makers, presumably in reference to the direct descent of the House of Burgundy from the kings of France. Interestingly enough, William Caxton, the first English printer, used paper imported from the Low Lands with this same emblem. The clover leaf, which had been used by paper-makers throughout Europe for centuries, first appearing in Italy, was substituted by Rittenhouse for the fleur-de-lis from the town seal of Germantown. Shortly before this, in 1686, Francis Daniel Pastorius had contrived this seal for the town, on the border of which the mill lay. Besides these symbols there were, at this time, two other water-marks in use. The one had the fleur-de-lis inside of a shield and surmounted by a crown, as in the "Pensilvania" mark, but having the letters NR on the other half of the paper. This design is found as early as 1696. The other is the sign of the post horn, found for the first time about 1698–1700. Many of these water-marks were used for quite a number of years, though the form changed somewhat through usage.

Some time after the establishment of the mill, in 1700 or 1701, the small stream which supplied the water power for the plant furnished a major tragedy. A freshet, or spring flood, swept away the entire mill and most of its implements. The only description of the fatality is contained in William Barton's *Memoirs of the Life of David Rittenhouse* (Philadelphia, 1813), in a letter written by William Penn which has since been lost. Barton points out, however, that the freshet occurred some time during Penn's second visit to the province, which took place in 1699, and probably towards the end of the visit, in 1701.



Old Germantown Water Works as Seen from Old Walnut Lane Bridge

Photograph taken in 1883 by J. Mitchell Elloit

> There is now before the writer of these memoirs a paper in the handwriting of the celebrated William Penn, and subscribed with his name, certifying that "William Rittinghousen and Claus" [Nicholas] "his son," then "part owners of the paper-mill near Germantown," had recently sustained a very great loss by a violent and sudden flood, which carried away the said mill, with a considerable quantity of paper, materials and tools, with other things therein, whereby they were reduced to great distress; and, therefore, recommending to such persons as should be disposed to lend them aid, to give the sufferers "relief and encouragement, in their needful and commendable employment," as they were "desirous to set up the paper-mill again." . . . In Mr. Penn's certificate he [William Rittenhouse] is called an old man, and is stated to have then been "decrepid."

Of the contents of the mill, some fifteen pounds, two shillings, and fourpence worth of wood and parts of the mill were saved, according to the bill of account given by the Rittenhouses to William Bradford.

As Penn was genuinely interested in the progress of his colony, he was of course eager to see this important venture re-established, and managed to find like-minded friends who subscribed a sufficient amount of money for the re-erection of the mill, while he himself gave twenty five pounds towards the fund. The Rittenhouses then selected another site a short distance from the original mill, if, indeed, they did not build on the very same spot, and proceeded to erect another structure which was somewhat larger, probably in the early part of 1702.

From a letter which is still extant, it seems that Bradford did not help to any great extent towards the rebuilding of the mill, though he still kept his portion of the stock. But the Rittenhouses were continually trying to get control of all the shares. Having, by this time, bought out Tresse and Turner, they made overtures to Bradford, to see if they might buy his shares too. Bradford was at first willing to

do as Tresse in the settlement of his claim against the mill, and on these conditions the Rittenhouses agreed to rebuild; but some time later he seems to have made a different offer. Horatio Gates Jones suggested that it provided for a renewal of Bradford's paper monopoly. Whether or not it was this we do not know, but we do know that Rittenhouse refused it. From a letter, written by Nicholas Rittenhouse to William Bradford, dated May 12, 1703, we learn the conditions for the rebuilding of the mill. Bradford agreed to take his share of the materials saved, and the arrears of rent due, as Tresse, the third partner, had done, the sum of money being paid for with its equivalent in paper. The Rittenhouses did not undertake to renew Bradford's monopoly, as they preferred to give the men who helped re-erect the mill the first opportunity to purchase its products.

It was not until June 30, 1704, however, that Bradford consented to sell his interest in the mill. Two years later William Rittenhouse bought the land on which the mill was located for the rather generous period of nine hundred and seventy four years. In February 12, 1705–6 he ceded to Nicholas, his elder son, a three-quarter interest in the mill, and, when he died intestate in 1708, the remaining share passed to Nicholas. The mill, after being renewed several times, remained in the possession of the family until it was torn down in 1891, having also, in its checkered career, served as a cotton factory.

While we have followed the elder Rittenhouse in this extremely important venture, it is interesting to note that he was also a pious churchman. Though he may have been born a member of the German Reformed Church, as we have seen, William Rittenhouse, at the time of his arrival in Pennsylvania, was a member of the Mennonite Church.

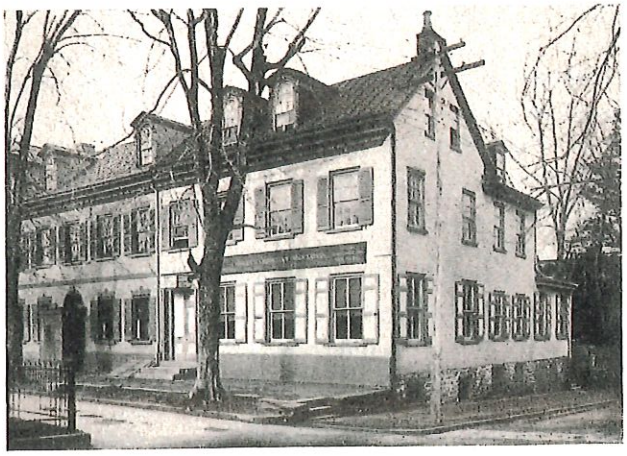
It is probable that in his later years he devoted more of his time to affairs of the church, and less to the paper mill. Certainly his connection with things ecclesiastical became closer towards the end of his life.

Almost as soon as he arrived in Germantown, he began to organize a congregation in the village among the families of Mennonite persuasion, then numbering about ten families, and about twenty members, and in 1690 he himself was elected their minister As all members were Dutch-speaking it is most probable that services were held in that language, in the homes of the various members of the congregation.

Some time after 1700 a letter was written to the mother church at Hamburg, Altona, Germany, requesting that a bishop be sent over, in order to ordain a bishop for the American church. As no one in Germany seemed particularly anxious to make the trip, the home church decided that someone in America might perform the functions of a bishop without actual ordination, and quoted scriptural precedents for this action. Rittenhouse, as minister, was the natural person to undertake this duty, but at first he hesitated. After some more correspondence between the two groups he was persuaded to follow their advice, but died before he actually took over the office. From a letter in the Mennonite Archives in Amsterdam we learn that one of his acts, as minister, was to try to have the Mennonite *Confession of Faith* translated into English and printed by William Bradford. The latter, however, asked a price which was far beyond the means of the church. This little volume was first printed in English in Amsterdam in 1712, shortly after Rittenhouse's death. It was later reprinted, with an appendix, by Andrew Bradford, the son of William, in Philadelphia in 1727, having the honor of being the first book to be printed in the New World for the Pennsylvania Dutch. Moreover, the name of "Claes [i. e. Claus] Rittinghausen" appears among the names of the men who authorized the printing.

As a minister, Rittenhouse no doubt had part of his time occupied with officiating at weddings and funerals, and seeing that the members of his church took care of their own poor and needy, the latter being a function which the ministers of this group must perform. He also had to write sermons, or select and read them from books, and to conduct the services of his church.

In 1694 Jan Doeden and William Rittenhouse were appointed to take up a free will offering, in order to raise enough money to build a small house for a blind, old man and his wife, who came to Germantown in miserable plight, after wandering about in the wilds of Pennsylvania. This man, interestingly enough, had been the leader of a group of twenty-four Mennonites who had settled at Swaanandal or the "Valley of the Swans," in what is now the state of Delaware. In 1664 a contingent of soldiers under Captain Robert Carr destroyed the settlement and seized and carried away all the property that "belonged to the Quaking Society of Plockhoy," adding for emphasis, "to a very naile." The man's name was Peter Cornelius Plockhoy, an almost unknown, but nevertheless extremely interesting figure in the colonization of the New World.



Harkness House in 1900; occupied by Bank of United States 1798-1799

Of the private life of William Rittenhouse precious little is known outside of the names of his children, Nicholas, Gerhard or Garrett, and Elizabeth. He died on February 18, 1708, and now probably lies in the burial ground of the Mennonite church in Germantown, of which he and his sons were ministers, as well as members, and where a cenotaph has been erected in his honor.

The children of William Rittenhouse have likewise not provided an overabundance of material concerning their lives. Garrett seems to have had no connection with his father's mill, for in 1697 we find him in possession of a grist mill on Cresheim Creek. Elizabeth married Heivert (Howard) Papen, a miller, and the man who is said to have the somewhat dubious claim to fame of having built "the first stone house in Philadelphia."

By far the most important of the children of William was the elder son, Nicholas (Claus, or Klaas, etc.), born on June 15, 1666, in Broich. He came to this country with the rest of his family and was, as we have seen, always intimately associated with his father in the trade. He married Wilhelmina De Wees, the sister of William De Wees, in New York, in 1689.

While it has been the custom to call William Rittenhouse the first manufacturer of paper in this country, this is unquestionably a partial injustice to his son, Nicholas. For it is a question, how much the elder Rittenhouse could have done without the aid of his eldest son, who seems to have been an excellent carpenter, as well as paper-maker. As early as 1700 or 1701 Penn described the father as an old man, and "decrepid," so even at this early date he was probably little more than the nominal head, and not actually doing any great amount of work in the mill. Paper-workers worked long hours, in a very damp atmosphere, and their trade was most strenuous, so that they were likely to become old before their time, and this must have been the case with the elder Rittenhouse. How long he was "decrepid," and to what extent, we do not know. But, from the evidence which remains, it appears that Nicholas contributed quite as much, if not more than his father, to the success of the mill, and moreover was able to continue the establishment after the death of his father, a further proof of his ability. He continued to manufacture paper until his death, at the age of sixty-eight, some time after May 24, 1734, when, because he realized that he was dying, he made his will.

When Andrew Bradford established, in Philadelphia, the *American Weekly Mercury*, the first newspaper to be printed south of New England, on December 22, 1719, the paper on which it was printed was made at the Rittenhouse mill. The *New York Gazette*, the first paper printed in New York, and begun on November 8, 1725, was also on paper from this mill. Likewise the masterpiece of the Bradford press, the so-called "Second Bradford Laws," or *The Laws of the Province of Pennsylvania*, printed in 1728 by Andrew Bradford, is on paper bearing the water-mark of the Rittenhouse mill.

Nicholas Rittenhouse used many water-marks, some of them even when his father was the head of the mill. These he seems to have continued to use after he gained possession of the plant. In addition to those, from 1719 on, he used a KR, the "K" being for the Dutch *Klaas*, or the German *Klaus;* a clover leaf was inserted to the right of it, and both were inserted in a rectangle. Occasionally the KR appeared alone on one side of the sheet, and a clover leaf on the other side. Paper with these water-marks was not only used in Philadelphia, but was also sent to New York, to Andrew Bradford.

From two letters which are still in existence, we learn that the paper was forwarded to Bradford in New York by land and water. Nicholas Pearse, who handled the printer's account in Philadelphia, usually paid for the paper, which was then sent to New York. Bradford was in the habit of paying for part of it by sending in return rags, always a difficult substance to obtain. At that time they used linen rags to make all kinds of paper, including writing, printing, brown, and blue paper, as well as pasteboard.

The Rittenhouse mill was such a success that William De Wees, a brother-in-law of Nicholas, established the second paper mill in the colonies, in 1710, on the west side of the Wissahickon Creek, in that part of Germantown known as Crefeld, near the present line of Montgomery County, then called the "Manor of Springfield." It is certain that De Wees learned his trade from the Rittenhouses. However in 1713 this mill, and one hundred acres of land, were conveyed to "Abraham Tunis, William Streeper, Claus Ruttinghuysen and John Gorgas" for the sum of one hundred and forty-five pounds. The deed of rental, however, does not show that the mill was still in operation. The water-mark was a post horn in a shield over the letters D. A. In 1729 De Wees made a business contract with his son-in-law, Henry Antes, to operate a combination grist and paper mill. Another paper mill seems to have been run by his son, for, on a map made in 1746, we find that "Hy. De Wees' Paper Mill" is situated about a half of a mile below this one, at the bend of the Wissahickon Creek.

Like his father, Nicholas was also made a minister in the Mennonite Church, certainly before 1725, and perhaps as early as 1712. He has the further distinction of being the grandfather of David Rittenhouse, the astronomer, who was born on April 8, 1732, shortly before his death, in the house which William and Nicholas Rittenhouse had built years previously. David's father was Matthew, the youngest son of Nicholas.

At an unknown date Nicholas had to build a new mill, for the one he made in 1702 later proved too small for the growth in business due to the increase

in printing presses in the colonies. The new building was erected on the opposite side of the creek from the still-existing Rittenhouse home of 1707. This mill continued in operation long after the death of its builder, for his eldest son, William, carried on the trade there for many years. The latter used a clover leaf over a ligatured WR for his water-mark. The mill seems to have been rebuilt in the lifetime of William, or perhaps just after he gained possession of it. When William died, the mill passed into the hands of his son, Jacob, also a paper-maker, who used the symbol IR underneath a crown for his water-mark. Jacob died in the year 1811, leaving the mill to his nephews, Enoch and Samuel. At this time and for years later, the mill was run by the Markle family, although the Rittenhouses still owned the land. Upon the death of Samuel, Enoch owned the property by himself until his own death in 1855. He thereupon left it to his cousin, Peter Rittenhouse. The fourth building in which the mill was operated was converted into a cotton factory about 1820, and eventually, in 1891, was torn down by order of the Park Commission, while the site was incorporated into Fairmount Park. The sole reminder of William and Nicholas Rittenhouse, outside of the paper they made, is the home of the family which still stands on the Lincoln Drive where Rittenhouse Street comes down from Germantown.

In studying history it is frequently necessary to point out that a trade was practiced, or an article was in use and was forgotten, years before it became known popularly, and was of no importance in bringing about its later revival. The Rittenhouse mill, on the other hand, remained in existence for about one hundred and fifty years, and was no doubt responsible in a great part for the fact that not only did other mills begin to make paper so early in Pennsylvania, but also that for years Pennsylvania had more and better mills than any other province. As such it assumes a degree of importance in the history of the nation, and most of the credit for it must go to William Rittenhouse and his son, Nicholas, as well as to their printer friend, William Bradford.

STAINED GLASS WINDOWS

By Paula H. Balano

THE beauty of stained glass is beyond description. Entirely contrary to the beauty of an oil painting or a water color inasmuch as a painting is a positive statement seen and felt through the eyes of the artist.

Glass has moods, depending on the light, brilliant under sunlight, muted, when the light softens. If you find a stained glass window which pleases you, visit the church at various times of the day and sitting quietly, permit the beauty to penetrate.

The creating of a stained glass window is an art. Each piece of glass which you pick and cut to the pattern should be like a stroke of pure color.

If you have an area which calls for the use of red glass, you should break the color by placing a vibrant brilliant red against a sharp one and even slipping a small piece of blue in between. Light shining through the glass at a distance will give the effect of violet. The secret of color in glass is to let the light do the blending instead of the brush, which would be the case in blending oils or water colors.

A well designed and executed window must have a balance of warm and cold colors, reds, oranges and yellows against cold blues and greens.

Neutral colors, such as soft light tones of blue green and even pale off pinks may be used to emphasize the rich colors and also to prevent the window from becoming too dark.

It should be remembered that a window is part of a wall and should be designed with this in view. For this reason, a picture window with pretty faces is most undesirable. All subjects should be translated into a decoration. The faces should be strong with the structure of the head emphasized and plenty of heavy shadows. This treatment will cause the character of the face to carry at a distance. Otherwise the face will become a blur of light. The face is not the most important part of a figure. The cathedral in Chartres, which is beyond criticism, proves the point. The face is necessary like a foot or a hand, but it is not of paramount importance.

(*Continued on page 31*)