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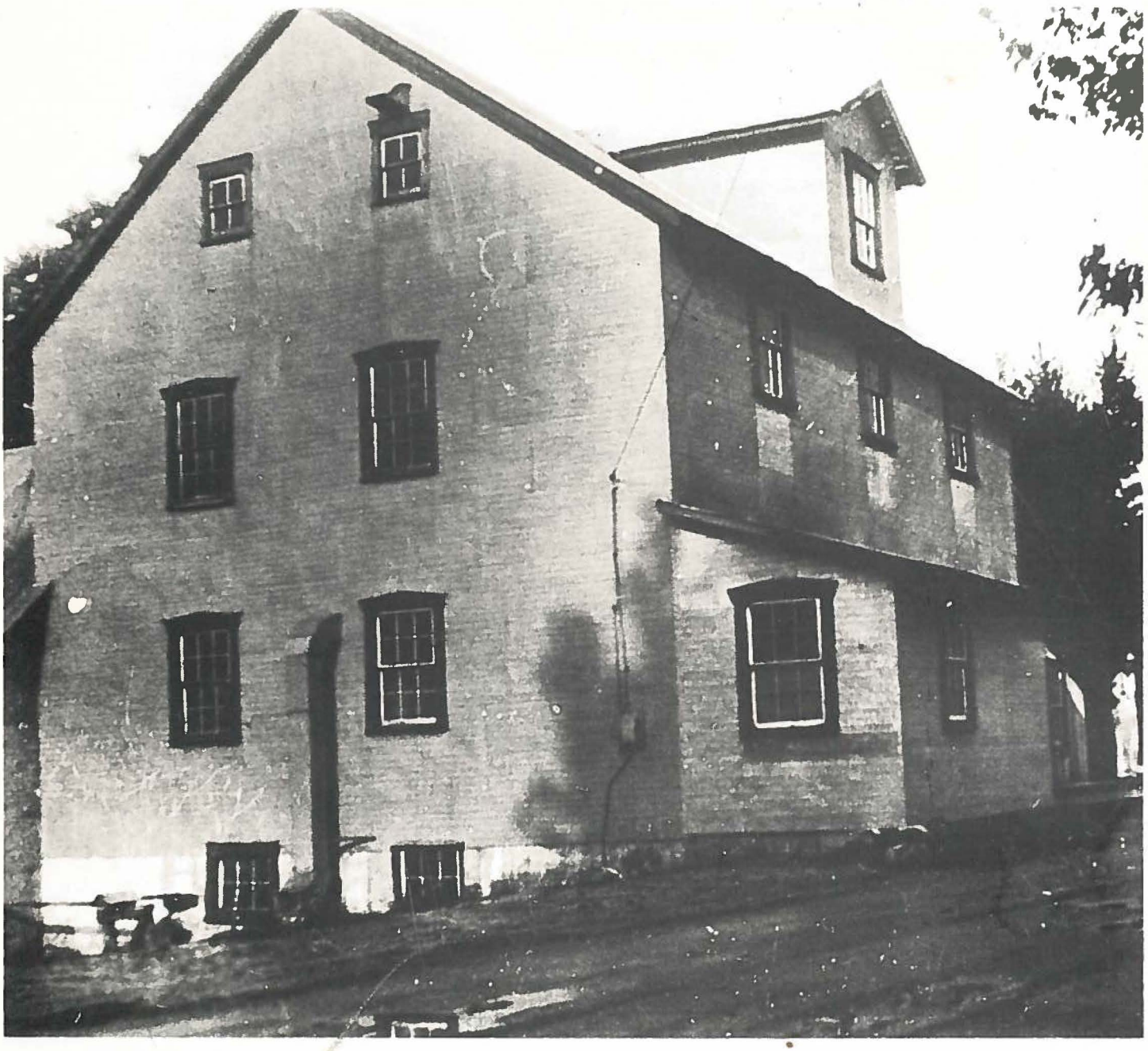

ABBOTT's MILL, SUSSEX COUNTY, DELAWARE

Price $5.00

THE ARCHEOLOG AUTUMN 1984

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ILLUSTRATIONS

Photography by Nancy Ballinger Goggin- courtesy of THE BUREAU OF MUSEUMS AND HISTORIC SITES, DIVISION OF HISTORICAL AND CULTURAL AFFAIRS, Dover Delaware

Bread has long been considered the staff of life to all civilizations of the world. The milling of grain into a more palatable form dates back to prehistoric man who developed hand techniques to grind grains into flour. The earliest hand-powered milling tool was the "quern" whose usage spread throughout Europe and remains in use in some isolated areas to this date(Howell & Keller, 1977). By 85 B.C. the Greeks and Romans had expanded the size of the quern to accomodate larger volumes of grain and had designed a wooden vertical structure which utilized water as the means of power. These structures were the progenitors of any and all subsequent mills built.

The technological concept of this vertical mill changes very little from the early Roman era to the arrival of the first settlers in North America. Upon settlement early colonists recognized the unlimited possibilities that the abundance of timber and the presence of countless streams presented. Consequently, in 1634, the first water-powered vertical mill was erected at Dorchester in New England and it is estimated that thousands of mills of this type were scattered throughout the colonies by the end of the eighteenth century (Kuhlmann,1929). Most of them were grist and flour mills catering only to the needs of the people within their immediate area.

One such mill that remains virtually intact and operational is Abbott's Mill, situated in Sussex County, Delaware (Cedar Creek Hundred) on a stream known as Johnson's Branch, a Mispillion tributary. It is a four level wooden structure with several wings depicting various architectural designs. The present structure is actually an expanded version of a much older colonial type grist mill. The mill houses a large inventory of original equipment, most of which dates back to the early 19th century.

The earliest recorded deed to the Abbott's property was initiated by the Poynter family in October 1795. A general warrant considered at that time to be a sufficient deed of sale was granted to a Nathan Willey for the sum of $1,000.00. It outlines the boundaries as being:..."113 acres and 141 square perches (1 sq. perch = 30¼ sq. yards) with the appurtenances thereunto belonging...excepting the two story house raised thereon and not finished." There was no mention of a mill. The subsequent owner, Nathan Willey, listed as a carpenter is the probable builder of the mill. This is substantiated only by (one), an undated assessment of Cedar Creek Hundred which lists "1 grist mill: under Nathan Willey and (two), several later deeds which refer to the mill as being "late of Nathan Willey."

It is believed that the lower left wing is the only part of the present structure that could possibly date back to the early 18th century, for the timbers are hand-hewn and the millstones have wooden rather than cast iron pegs in the cog-wheels. Plus, writing found on

one of the elevators in the right wing indicated that a major renovation took place between 1905 and 1906 whereby the entire right wing was added on and new equipment installed. All the manufacture dates of this equipment fall between 1900 and 1940. The only piece that is pre-19th century is an IMPERIAL WHEAT SCOURER and POLISHING MACHINE, located in the basement. It is believed also that the water wheel was replaced at this time by its more efficient counterpart, the water turbine.

The water wheel could have been one of three types popular in colonial times, an overshot type, an undershot type, or a breastshot type, the names indicating the point at which the water made contact. The overshot wheels were the most efficient in terms of power and the most probable type used at Abbott'sMill. The wheel turned counterclockwise by the weight of the water falling on the paddles from above. They were employed where head waters were over 10 feet. Breastshot wheels most commonly used for head waters of 6 to 10 feet received the water near the center and when properly constructed were popular and relatively efficient. For low head waters undershot wheels were employed. They were the least efficient in terms of power and were entirely dependent upon the amount of water available.

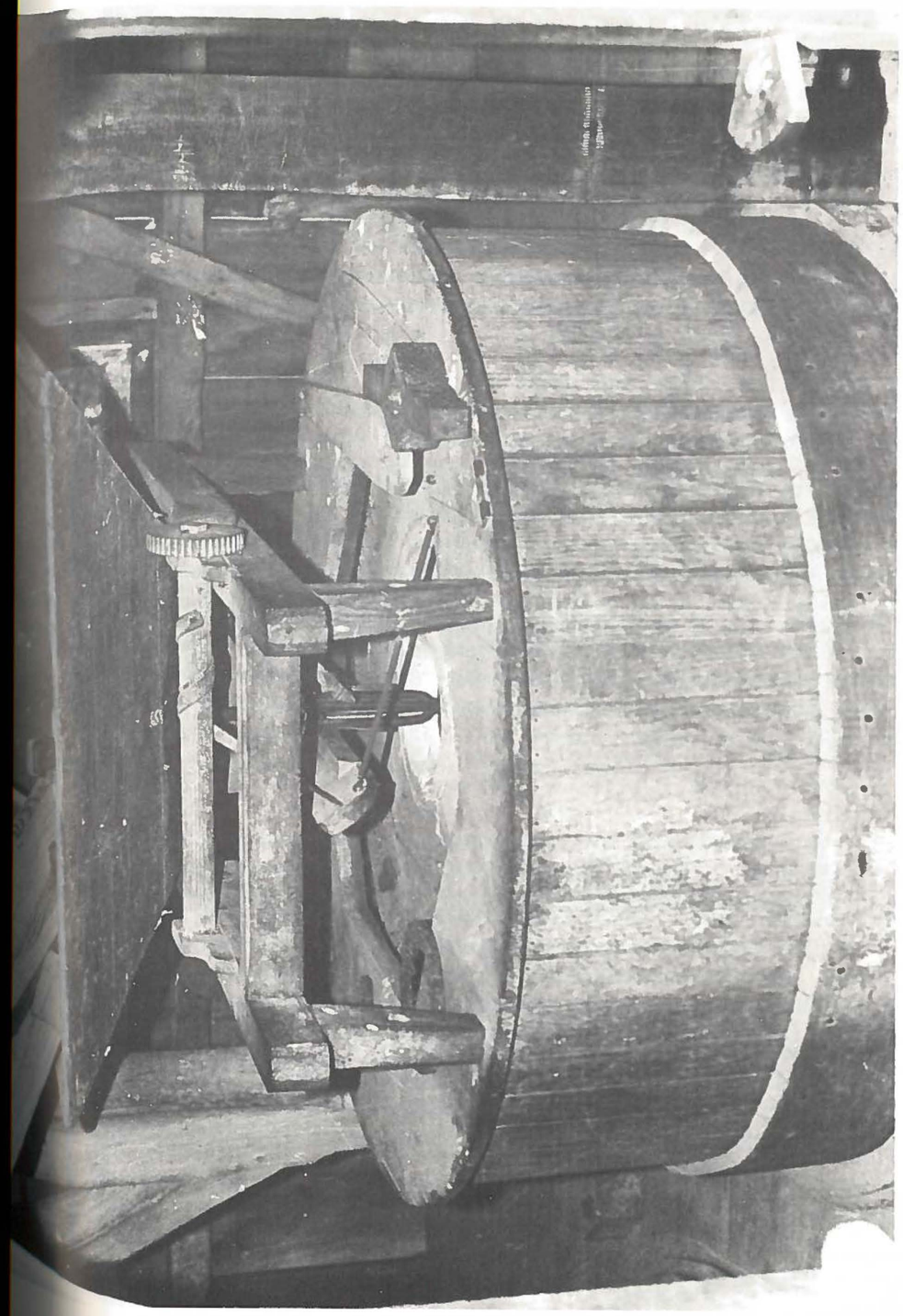
Various kinds of wood were used in construction of these wheels. Oak was popular and plentiful, pine of certain types was found to be fairly long lasting, but cypress was perhaps the best rot resisting wood discovered for water wheel construction. Exposure to water, ice, snow and sun, however, shortened the active life of the wood and repairs were frequently necessary. When the water turbine was introduced in the early 19th century as a more viable substitute to the water wheel, millers gladly removed and replaced. These water turbines were constructed of heavy iron whose design was such that the water was admitted through a series of fixed guide vanes which allowed for reverse direction of rotation of the water in the motor (ex: whirlwind). The power derived from the turbine was transferred through a shaft and a series of gears to the millstones.

Abbott's Mill was notoriously famous for its high quality of buckwheat flour and cornmeal, and it was the millstones that were responsible for creating this image. The two pairs of millstones found at Abbott's Mill were both made by the B.F. Star Co. of Baltimore, Md. Both the upper stone called the runner, and the lower stone called the bed, or nether, were furrowed or cut after the conglomerate stone was quarried and molded. The layout of the furrows was called the "dress" and was generally of two patterns, "sickle" or "quarter The furrows were cut on the bottom of the runner and on top of the nether. It was imperative that the faces be identical for several reasons. First, the furrows function was to create a positive shearing action whereby the kernels of grain were separated from their husks. Second, the furrows had to channel the ground stock away from the center of the stones to the outer edges. Third, they had to admit

enough air to pass through the stones so as to carry out the heat generated by friction during the grinding. The uncut areas or the stones called the "lands" did the actual grinding of kernels into flour. Each pair of stones was housed in a "vat" made 2 to 4 inches wider than the diameter of the stones. A four-sided wooden hopper was placed above and to the side of the "eye" or hole drilled in the top of the runner. The idea was to allow the grain to fall through the hopper into a narrow wooden trough or "shoe" which hung loosely over the eye and which was tapped gently by a short wooden shaft called the "damsel". The entire construction allowed for a constant, even flow of grain at all times. It was the action of the damsel hitting the shoe that created the ceaseless chatter one heard as he approached the mill. After being ground, the stock dropped down a spout to a lower floor where it was stored in sacks or bins.

A heavy wooden crane equipped with a large pair of iron tongs or "bails" was always stationed near the millstones. This apparatus was used to lift and turn the runner so that recutting, and resharpening, could take place. The bottom stone could be worked on in place. The process of redressing a stone was a long and tedious one requiring a great amount of skill. Tools made of cast iron and steel known as "mill bills" or "mill picks" were used to redress the stone's surface. This process was important for dull stones tended to grind coarse, cakey flour which hastened fermentation. Distances between the stones could be minutely adjusted and the degree of difference was dependent on the type grain to be ground. The stones had to be perfectly balanced, for if they touched during grinding the grain would be ruined. The most immediate danger was sparking. Flour dust being of organic matter was highly flammable and a single spark could cause an explosion.

Up to this point the basic colonial mill consisting of a pair of millstones, a water wheel and a storage bin or two, was more than adequate in producing the amount of flour and meal needed by the local communities. This simple way of life was soon to change drastically as a result of the Industrial Revolution which originated in Great Britain in the late eighteenth and early nineteenth centuries. New mechanical inventions and revised factory systems associated with industry brought about many changes. The milling industry was perhaps the most radically affected by those changes wrought by the Revolution, and radical they seemed to those country folk who considered their way was the only way. Most of them shied away from new fangled ideas and continued to operate their mills as they had for years. Necessity however forced changes at an amazing rate. The population had increased dramatically and new areas of the West had opened up, creating a surplus of wheat in nearly every pioneer settlement. The small custom mill was unable to keep up with the increased supply and demand, therefore, was literally forced to accept the changes or go under in the wake of progress.



THE COMPLETE MILLSTONE ASSEMBLY - Abbotts Mill

An individual instrumental in making new waves of progress in the milling process was Oliver Evans who was born near Newport, Delaware in 1755. He was apprenticed to a millwright at the age of sixteen, and during this time he noticed that most mills were needlessly dirty and wasteful both of goods and labor, while producing a flour of varying quality (Storck & Teague, 1952). His subsequent attempts to re-design and improve the milling process were outlined in one of his most noted literary works, The Young Mill Wright and Miller's Guide, where Evans introduced for the first time the concept of a fully automatic mill. His illustrations noted such improvement as elevators, horizontal conveyors and moveable spouts. His ideas when finally accepted totally revolutionized the milling process.

Most of the mills were able to simply extend the existing buildings to accommodate the new inventions. Abbott's Mill is one such colonial mill that was expanded, as stated earlier, during the early 19th century. This was just prior to the ownership of the mill and property by Mr. Ainsworth Abbott, who successfully operated the mill until 1963.

Mr. Abbott was born near Ellendale, Delaware on June 22, 1885, and it has been said that he had the makings of a miller at an early age. He supposedly built and operated a grist mill near Ellendale for an undetermined period of time until it burned to the ground. Shortly thereafter on June 5, 1919 he bought in conjunction with a Joseph J. Smith"... a tract of land and water mill, known as Johnson's Mill from a William Shockley Daugherty, for the price of $1.00. On July 27, 1921, Ainsworth bought out Joseph Smith and sold the property to his mother Clara Lofland of Milford. This information, besides being officially recorded, was scribbled on one of the elevators. On July 24, 1922, Ainsworth bought back the property from his mother and operated it until it was sold to the State of Delaware in 1963. At that time, Mr. Abbott left the area to live with his granddaughter in Magnolia until his death on February 20, 1969. He was married twice, first to a Linda Donovan who produced his only child, Nelson. He divorced and remarried. His second wife, Mary died on January 17, 1963. Both Ainsworth Abbott and Mary, his wife, are buried in the Odd Fellows Cemetery near Milford.

Mr. Abbott's character is a subject of much controversy. Most people considered him a genius when it came to milling. The quality of his cornmeal and buckwheat flour was unsurpassed. He was noted as being extremely old-fashioned to the point that modern conveniences such as electricity were never installed the entire time he and his wife lived there. On the other hand, the entire right wing of the mill boasts a large inventory of some of the most sophisticated equipment available during the 1930's and 1940's. He installed, for example, a Fairbanks, Morse and Co. Diesel Engine in the basement.

This 20 horsepower, 350 RPM style H engine offered the most economical force of power for operating the mill when water levels were too low to run the turbine, yet a frequent visitor to the mill is quoted as saying "old Ainsworth only fired up the old diesel twice that I know of".

Mr. Abbott had a rather extensive delivery route which reached as far south as Georgetown, as far north as Dover and as far west as Vernon, Md. This was the only reason that he hired extra help, to make deliveries, otherwise, he preferred to work alone. He was very meticulous, or I should say, his wife Mary was, for it was she who was credited for keeping the mill "clean enough to eat off the floor". A daily log book was maintained by Mr. Abbott, listing the owner of the grain, what type of grain was brought to be ground and how much, plus the cost. Mr. Abbott operated the mill on both a cash system as well as on the toll system. Notes were often left telling the visitor to leave the grain which would be ground and delivered as soon as possible. The mill was not operated on a daily basis. Usually one day was set aside for grinding, another for separating, another for bagging and delivering. Weather was a major consideration for if it was rainy, the flour tended to cake and clog the spouts which made separation impossible. Abbott could produce approximately 10 to 12 barrels of flour per day. He also shelled, cracked and graded untold amounts of corn and ground feed for cattle, poultry and hogs. Very little was wasted.

Abbott's Mill is a "3 break mill", a break being just one of the many reduction phases employed by millers to produce flour. It utilizes two grinding phases and one separation phase in order to produce the desired product. Some mills had as many as 6 to 8 breaks, the object being to reduce the grain as gradually as possible, yet obtain maximum separation. The percentage breakdown was totally dependent upon the type of equipment used and just how much the miller knew about the particular grain he was grinding. A mill capable of producing 20 barrels of flour per day could not expect more than 60 to 65% success in extracting a fine grade flour, 17 to 20% could be bran, while 7.3 to 10% would be middlings. Maximum extraction would be only 72% fine grade flour, 28% being used for animal feed (Storck & Teague, 1952).

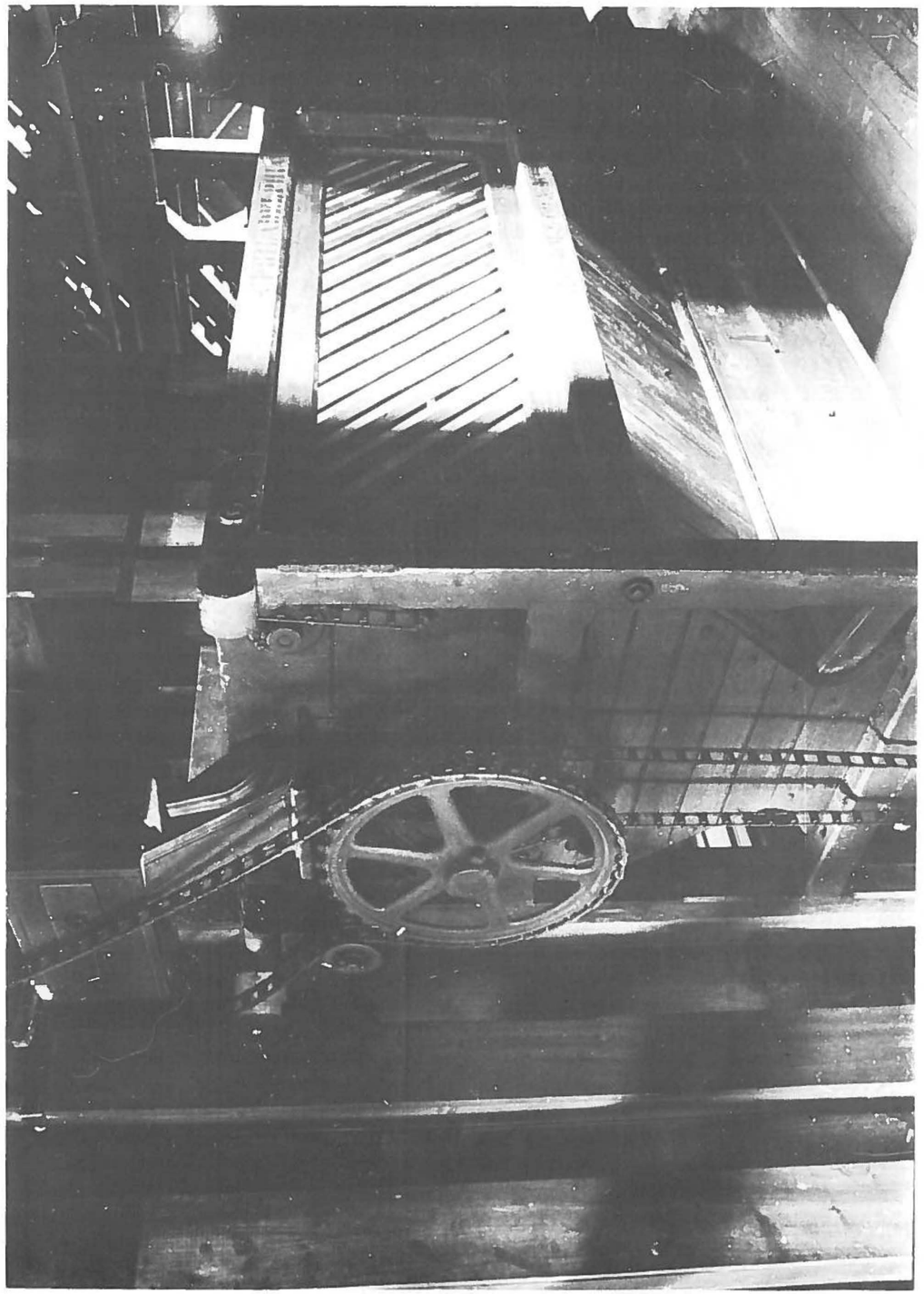
The physical structure of the grain being ground was the ultimate key to the success achieved in separation. For example, the nature of the wheat berry is such that the same varieties would vary considerably in size, color and consistency from season to season, district to district. It is a small nut-like seed scarcely more than a quarter inch long, with a troublesome beard at one end. The germ is the centermost part from which new life is generated. It contains a vitamin rich oil which has an unfavorable effect on the color, baking quality, and preservation of flour. The germ is surrounded by the endosperm, a nutritious conglomerate of starch cells and fibrous coating.

These starch cells, if broken during the grinding process, contribute to the chemical reactions that weaken the flour. The wall of aleurone cells contains protein which, if broken, sap the baking strength of the flour. Finally, the entire berry is covered by a coating known as bran which is easily shattered during grinding. Once it is shattered it can not be separated from the flour and, if present, affects the color and baking quality. The problems of separation are further intensified by the fact that the berry is deeply folded in on itself along its entire length. These folds allow for the collection of dirt and other impurities which again, if not removed, contaminate the flour (Consolidated Grain Milling Catalog 1937).

It is little wonder that man produced any form of palatable flour from this obnoxious grain, let alone produce the high grade that society demanded. It was only through perseverance, knowledge,and understanding that man was able to overcome all the problems inherent in making quality flour. The first improvements were made in the area of cleaning. Wheat was often mixed with various kinds of seeds and man soon realized that it would behoove him to remove these impurities, lest the quality of his flour be impaired. Air was used extensively along with screens or sieves to free the wheat berry from dirt and other impurities. Brushes were incorporated in the basic design of the machine to rid the wheat of the troublesome beard, leaving the berry intact and glistening in appearance. The Eureka Wheat Scourer and Polisher manufactured by S. Howes Co., Inc., Silver Creek, N. Y., provided maximum cleaning of the grains at Abbott's Mill. It is a horizontal type, with heavy duty, dust proof, self-oiling bearings. It has a long wear scouring case with positive type adjustable beaters and comes equipped with shoe and scouring regulator control. It also provided for excess ventilation and exhaust of the impurities outside the mill.

The next area of noticeable improvement was in the cleaning of the flour. Early mill-powered cylindrical bolters were large sack-like machines whose capacity for equal cloth area was 1/4 to 1/3 that of the flat sifters that later replaced them. The reels were were quite popular and remain in use to this day. With reels, separations were made by centrifugal force and the tumbling action of the machine often caused the bran to break into dust which could not be separated from the flour. The result was a flour that looked dark and speckled and had to be classified as low-grade.

A hybrid of both the reel and bolter was introduced as the "Inter-Elevator" reel whose design was such that it rotated faster, was fitted inside with lifters which distributed the material over a larger surface area, and whose action was much gentler than its former prototypes (Halliwell, 1904). This type machine was soon replaced by the flat sifter whose attributes were even more satisfactory. It required 1/3 less power than the reel, less than 1/5 the floor space and would produce one to two pounds more flour from each bushel of grain whose quality was worth 5 to 15 cents more per barrel (a barrel is



PHILADELPHIA INTER ELEVATOR FLOUR DRESSER third floor Abotts Mill

equivalent to 196 pounds of flour). Abbott's Mill is fortunate that both types of machines were installed to facilitate maximum flour separation. One is the Philadelphia Inter-Elevator Flour Dresser, the other is the Wolf Gyrator.

The final area of improvement was in the grinding itself. The miller was very hesitant to make changes in this area due to the importance placed on the millstones. They were an artistic symbol, products of skilled selection and construction. The miller's reluctance to accept a roller-type system in place of the millstones was due largely to his loyalty to this trusted device. However, progress will be progress and eventually most millers came to realize that the roller system was advantageous to the making of quality flour. The rollers were made either of unglazed porcelain or of corrugated cast iron. They were housed in wooden structures and were most often powered by belts and pulleys. They could be adjusted to arrange a gradual series of breaks or reductions of the grain into its principal parts, were easier to clean, and basically required much less work on the part of the miller than millstones did.

Other equipment which helped to promote the success of the roller system include a maze of elevators and spouts, and the flour packer. The elevators in Abbott's Mill were also manufactured by the Wolf Co. They run vertically from the basement to the top floor. These wooden structures with their ascending and descending aluminum cups eliminated the labor previously required to move the grain and stock from place to place. All that was required of the miller now was to pull on wooden handles attached to spouts by string which opened and closed chutes which allowed for the continual flow of gravity to feed grain and stock from level to level, or to and from different machines. This concept was particularly satisfactory for it eliminated the need for hired help. Mr. Abbott could run the mill very easily by himself. The Wolf Drop Gear Packer, number 724 was also a welcome addition. This particular model had a center equalizing platform lift which eliminates friction, bevel gears with positive "throw in" and quick release. It packs barrels of any size from 12 to 196 pounds and sacks or bags ranging in capacity from 12 to 98 pounds.

The spouts, strategically placed up and down the elevators, allowed for a constant, even flow of grain and stock from the elevators to the various machines. Their construction required minute detail, for they had to allow the stock to run freely, yet in the case of middlings and other stock, not too fast. Each spout section had to be accessible to the mill operator. Thus loose covers and inspection holes were installed. All the spouting had to be securely fastened to the building or to some machine unit, and each section securely fastened, one to the other, so that there was no possibility of it becoming loosened due to vibration. The angles of attachment had to be exact to allow as little dust to escape as possible. All in all, they were an important aspect to consider when constructing any type of mill. Most of the spouts found in Abbott's Mill are made of yellow pine or poplar, a few are of aluminum. All have access holes referred to as "wickets"

whose design is that of a tear-drop. Some of the spouts were further equipped with "magnets" whose purpose was to extract pieces of wire and other extraneous particles which unaccountably found the way into the wheat. The magnets are horseshoe-shaped and still retain their magnetic qualities after all this time.

The only other machinery that has up to this point not been mentioned are one, the DeCamp Speed Indicator manufactured by The Wolf Co., and two,the Unique Cracked Corn Separator and Grader, manufactured by the Robinson Co. located in Muncy, Pa. The DeCamp controlled to a single revolution the exact speed at which the mill was run. If the speed increased or decreased, a bell rang, warning the operator. The Unique Grader is a conglomerate of assorted screens and sieves, all attached to a fan assembly. Its function was simple, to crack and grade corn which fell to its associated chute below where it was bagged according to the wishes of the buyer. The fan assembly separated and blew any debris outside the mill. This particular machine was difficult to date for it consisted of several different types of machines. The time span of 1895 to 1900, was, after much research, determined to be a viable time frame for this particular machine. Mr. Abbott added one other machine to his repertoire. It is a more sophisticated model of the "Unique Grader". The stock on entering this machine falls on the top scalping sieve, which is quite coarse and is for the purpose of removing whole grains, pieces of cob or any other material too coarse for the finished product. After being graded to a uniform size, the stock falls on a middle sieve which allows the fine cracked corn to pass through, while the coarse grade tails over into the air chute. The material after passing through the middle sieve falls on the lower sieve which separates the fine cracked corn from meal. The elevators and chutes to this machine were closed off during the restoration of the front of the mill. It is thought that Mr. Abbott added this machine to further improve the refinement of his cornmeal.

All the equipment on all floors testify to the concentrated efforts of one man to preserve just one part of America's heritage. His efforts have not been forgotten, for they have been rightfully preserved to enlighten future generations. This is due to the efforts of the Division of Historical and Cultural Affairs which was responsible for having the Mill listed on the National Register of Historic Places in 1972.

Since its restoration, the grounds have been leased by the Delaware Nature Education Society which offers a variety of educational activities throughout the year. However, in the minds of many local people Abbott's Mill symbolizes one of the few remaining ties to their pasts. There are few who can boast to having such memories. The milling industry of earlier years was effective due to the efforts of the miller to "make do" with what he had. This is not the case of the milling industry of today. Little or no time and money can be wasted,

the special handling and personal touch that a small custom mill provided is just not available anymore. Thus the cost of progress. I guess? The aged water-powered machinery and hand-hewn timbers are the supports upon which Abbott's Mill rests. Can the modern day milling industry boast any such support,and will it survive the throes of progress? Will future generations strive to maintain these ties to the past? Hopefully, the answer is yes. It remains the job of all people today to seek the knowledge from our pasts and preserve it forever against the future.

The understanding of the milling process is only obtained through the acquisition of knowledge, and with this in mind I have provided the necessary background in order to now outline the basic steps involved in the making of flour and cornmeal.

1. The grains, wheat and corn were brought to the mill and weighed. The farmer left with a predetermined amount of processed flour, the scale usually hung on a wall nearby, or he left with an "I owe you" to be delivered on such and such a day.

2. The corn was usually shelled first, then dumped below and fed to an elevator which would carry it up to its respective storage bin. The wheat may or may not be sent to a scourer first depending on how dirty the grain was. It also was fed to its respective elevator which carried it up to the storage bin. Keep in mind the grains were never mixed.

3. In the case of Abbott's Mill, the corn was then fed through the separator and graded and then sent on to the millstones to be ground. The wheat was sent to another scourer and polisher for the final cleaning and then on to the rollers where it was subjected to three breaks. Note: the millstones and rollers are both equipped to handle the grinding of both grains. Mr. Abbott was fortunate to have both systems.

4. The corn, after it was ground, fell below to another elevator which carried it up to be stored until cool. Then it was further separated and graded to extract a quality cornmeal. The wheat went through the first roller, or break, then up to the sifter where ultimate separation occurred. Parts such as the bran were sifted and carried to the bolter for final separation. The bran was usually sold or given back to the farmer for feed for his horses. The middlings were sent back down to undergo a second and third break. Remember, there is extraction of flour throughout all the breaks and separations. Those middlings from which all flour was extracted were usually used in the grinding of hog and cattle feed. The quality flour extracts were then sent to the bolter to further refine the separating. Again keep in mind, this entire process could be changed to suit the needs of the grain being ground and the ultimate product desired by the miller. The finished product was then sent to the packer where it was bagged, tagged, then delivered. Dust was removed by fans for the most part.

A Summary of Archaeological Investigations at the University Research Park, Lewes, Delaware

by Ronald A. Thomas, MAAR, Inc.

Background

In the Spring 1983 issue of The Archeolog the introductory portion of a report, submitted by the author to the University of Delaware, was published. This section of the report concerned the background environmental and historical research undertaken as part of a study of 50 acres of the proposed University Research Park, located on a tract of land bounded in part by Pilot Town Road and New Road.

Subsequent to the research activities presented in the 1983 report, the University of Delaware contracted with Mid-Atlantic Archaeological Research, Inc. to undertake a data recovery archaeological project (salvage archaeology) at the site of an 18th century historic farmstead complex that was to be totally destroyed by a borrow pit within the Research Park. The report on this very successful project was completed in December of 1983. The following summary of the project is necessarily brief. However, the highlights of the findings of the archaeological investigations are presented.

Historical Study

The detailed documentary study of the history of the exact project area indicates that the farmstead stood on land successfully owned by Jan Jardyne (1660's); Peter Alricks (1670's); William Tom (1675); Luke Watson (c. 1679); Thomas Wynne (1687); Jonathan Wynne (1703); Samuel Rowland, Esquire (c. 1712); Thomas Rowland (c. 1729); Samuel Rowland, the grandson (c. 1744); James or William Russel (c. 1840); William Hickman (1856); ... Rodney (1896). Subsequent to the end of the 19th century the land was owned and farmed by the Ritter family of Lewes and by the University of Delaware.

During the existence of the farmstead (circa 1770 to 1820) the land was in the hands of the Rowlands. Since the homes of many of the members of this family are known to have been situated on Pilot Town Road (several still exist), it is likely that the farmstead complex, including a domicile, was a tenant or slave quarters. Archaeological support for this will be discussed later.

Archaeological Research

During the archaeological survey of the 50 acre Research Park, archaeologists from Mid-Atlantic Archaeological Research, Inc. discovered evidence of a concentrated historic site situated on a sandy knoll overlooking a silted in tidal stream channel. At that stage of the study only the boundaries of the artifact scatter were determined and several small test units excavated.

Under the terms of an archaeological data recovery contract, the entire sandy knoll containing the site was plowed and disked (by the Ritters). After several heavy rains, the area was staked off in a series of square grid units and all artifacts lying within each unit was collected and bagged for later study. At the completion of this task, earth moving machinery was called in and all of the plow zone (top soil) within the study area removed.

After the area was carefully cleaned by an archaeological field crew it was possible to identify numerous dark stains which represented the remains of the farmstead (see Figure IA). MAAR archaeologists took numerous photographs and made detailed drawings of each before they were given numbers and each excavated.

The results of this detailed excavation procedure were well worth the effort expended by the field team. It was determined that the farmstead consisted of a fenced in area of approximately one quarter of an acre containing a small domicile, several possible outbuildings, a garden and orchard area, and identifiable scatters of artifacts. Also included within the enclosure was a single prehistoric Indian shell-filled pit, totally unrelated to the later farmstead complex.

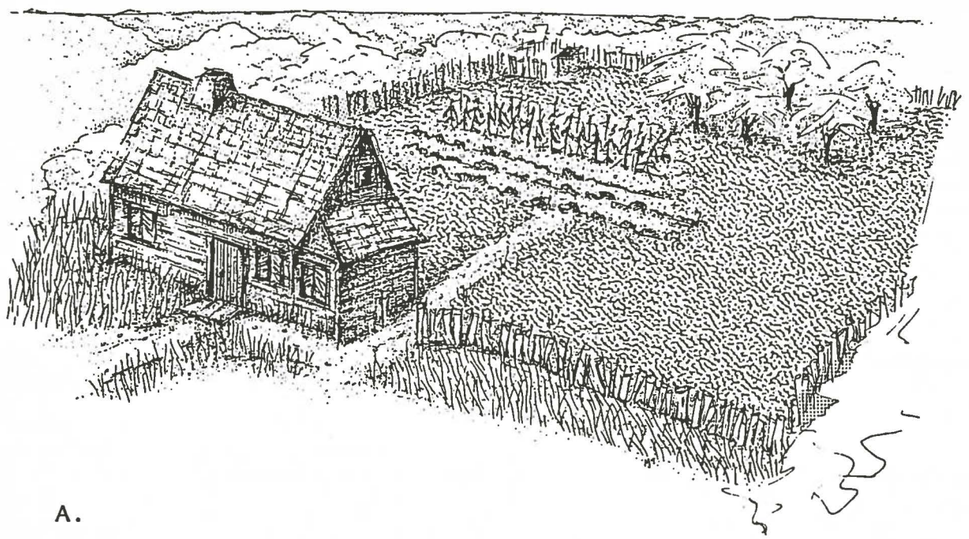
The enclosure was bounded on three sides by a fence constructed within a shallow, but obvious, ditch in a fashion quite common on farmsteads of Maryland and Virginia. The fourth side was bounded by a now non-existant hedge road that ran, at that time, from Pilot Town Road for one mile to Canary Creek. The fence appeared to have two small outbuildings in the southwest and northeast corners, represented only by vague soil stains and artifact concentrations.

The main structure, or domicile, was of "earthfast" construction, that method of construction most widely known in the lower Chesapeake Bay during the 17th century but also recorded far into the 18th century. "Earthfast" refers to a method by which wooden posts are placed into the ground at regular intervals and then tied together by beams and rafters to form the skeleton of a wooden frame building. They were used as domiciles and later became the most popular type of tobacco shed throughout the Chesapeake area.

The "earthfast" structure found at Lewes was originally 16 by 24 feet and was later enlarged to 16 by 32 feet. It had two chambers, a heated hall and a (possibly) unheated parlor. A second parlor was added to the north side of the domicile at the end of the larger of the two original rooms. A brick hearth and chimney provided the heat and housed the fire for cooking. Remains of the chimney base was excavated and found to contain numerous artifacts dating to the occupation of the house. Also found and excavated was a root cellar, which was located beneath the floor of the hall (reached from inside the hall as well as outside of the structure).

Conclusions

Based on the documentary research and on an analysis of the features and artifacts excavated, the domicile appears to be a tenant or slave quarters, probably of a farm worker and/or domestics attached to the Rowland family. Items found indicate that the occupants of the house were not particularly well off, although they did have access to purchased goods of various sorts. The dates of occupation begin before the American Revolution (c. 1770) and continue until about 1820 A.D. The project report gives details of the various features and artifacts as well as a summary of the entire project.



A.

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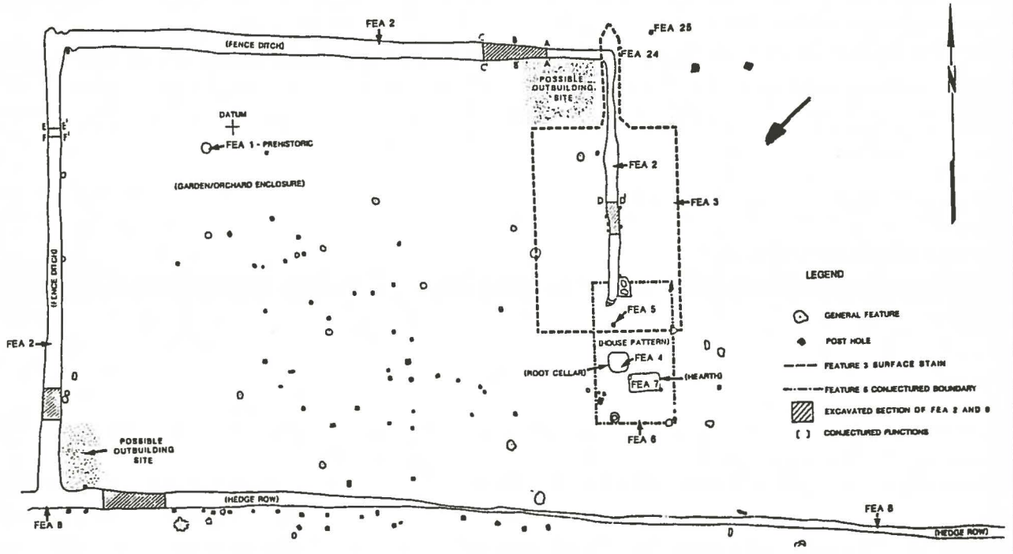

MAAR PROJECT : Lewes Research Park

Figure 1A Artists View of Domicile Complex

1B Archaeological Plan of Area

SCALE

LEGEND

o large features
· soil stains
.- house outline
◄ sketch view angle

NANCY BALLINGER GOGGIN

Nancy is a Sussex Countian who resides in Houston Delaware with her husband and daughter. She is an active member of the AirForce Reserves and flies as a Flight Engineer on C-5 As of Dover AFB.

In April 82 she became interested in Abbott's Mill as a result of internship requirements of The Wesley College Science program.

This was accomplished with the help of The Department of Historical and Cultural Affairs at Dover. Nancy took the photos in this article with the assistance of her husband.