

WASC 2142 ●

WAI ~~1529~~ ●
563

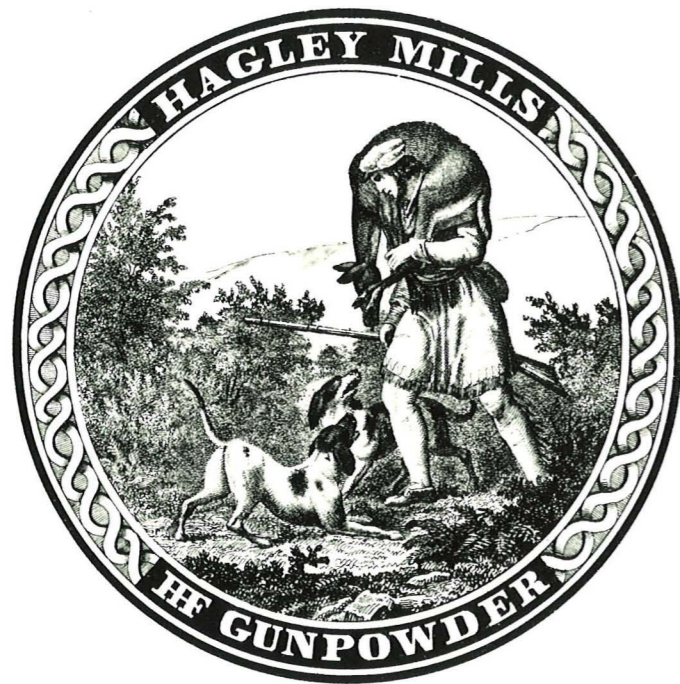
Booklets from
Hagley Museum

THE WORKERS' WORLD



AT HAGLEY

Glenn Porter



The Workers' World at Hagley

For more than a century along Delaware's historic Brandywine Creek there flourished an industrial village centered around the original black powder yards of the Du Pont Company.

There, as in hundreds of similar mill communities, the American Industrial Revolution unfolded. In historical photographs and in the words of the workers and their families, *The Workers' World at Hagley* tells the story of this important part of America's industrial heritage.

HAGLEY MUSEUM AND LIBRARY

BOX 3630 • WILMINGTON, DE 19807



THE WORKERS' WORLD AT HAGLEY

Glenn Porter

WITH THE ASSISTANCE OF
Jacqueline Hinsley and Joy Kaufmann



HAGLEY MUSEUM AND LIBRARY
WILMINGTON, DELAWARE

*To my parents, Pat Paul Porter and Mary Sanders Porter,
and to the memory of my paternal grandfather, Alexander C. Porter,
whose parents came to America from Ireland
in the middle of the nineteenth century.*

THIS PUBLICATION WAS MADE POSSIBLE BY A GRANT FROM THE
NATIONAL ENDOWMENT FOR THE HUMANITIES

© 1981, 1992 by the Hagley Museum and Library
Published 1981, Revised Edition 1992
Library of Congress Catalog Card Number: 92-53198
ISBN 0-914650-30-0

Designed by Klaus Gemming, New Haven, Connecticut
Composed by Finn Typographic Service, Stamford, Connecticut
Printed by Meriden Gravure Company, Meriden, Connecticut
Reprinted by Stinehour Press, Lunenburg, Vermont

Preface and Acknowledgments

IN RECENT YEARS many historians have turned their attention to the lives and communities of the ordinary men and women of the past. Although such people seldom left the sorts of voluminous personal papers that have helped us understand the elite in American society, scholars have made good use of other kinds of sources, including census and tax records, legal documents, genealogies, and oral histories. *The Workers' World at Hagley* consists mainly of materials drawn from two rich sources that give us the opportunity to see something of the lives of the working families in the Brandywine River communities near the original black powder works of the Du Pont Company. One of those sources is the body of historical photographs now housed in the Hagley Museum and Library. The other is the collection of oral history interviews gathered by the staff of the Hagley Museum from former employees of the powder yards and their families. That project, like the museum itself, was begun in the 1950s. It was carried out largely under the direction of Norman B. Wilkinson, former director of research at the museum, and Joseph P. Monigle, the museum's former deputy director. The interviews and photographs permit us to experience a portion of the lives of the workers and their families.

The part of the workers' world we see in these pictures and remembrances deals only with the last few decades of the history of the powder yards, which were begun in 1802 and closed in 1921. Most of the photographs

are from the period of the mid-1880s through about 1910, though it is not always possible to be sure. In many respects, however, the experiences of the workers and their families in that era closely resembled those of earlier generations in the community. Many of the mills, homes, churches, and schools pictured in this book had already been in use for decades when the photos were taken. Many still stand today on the grounds of the Hagley Museum and in the surrounding neighborhood.

We owe what we are able to see and understand of that older world in this publication to many people. A substantial body of research into the history of the community of workers at Hagley was carried out over a period of a quarter century at the Hagley Museum and, in recent years, at the Regional Economic History Research Center. Far more than any other, the work of Harold Hancock has informed and shaped our understanding of this topic. In the latter part of the 1950s Professor Hancock wrote three typescript volumes of excellent research reports for the Hagley Museum on the subject of "The Industrial Worker on the Brandywine." All who have worked on the topic since are immensely in his debt, and I have relied very heavily on Hancock's scholarship.

There are other substantial debts owed to researchers. Several of the scholars who were in residence at Hagley in the late 1970s and early 1980s, including Merritt Roe Smith and Donald R. Adams, Jr., worked

on Du Pont materials. Adams's studies of wages, incomes, cost of living, and savings of workers at the Du Pont Company in the nineteenth century have been especially relevant to this publication. A number of the students in my graduate research seminar at the University of Delaware in the fall of 1979 worked on aspects of the workers' lives at Hagley and the adjoining Henry Clay Village area. I am particularly indebted to seminar members Jon Andress, Linda Daur, Dona McDermott, John Rumm, Tim Shickles, William Sisson, Vicky Uminowicz, and Glenn Uminowicz. Scores of other researchers, especially former participants in the Hagley Graduate Program, have contributed essays, reports, and M.A. and Ph.D. theses that have been helpful. Most of these materials are presently stored in the library at Hagley, and I am immensely indebted to Jacqueline Hinsley, former director of research at the museum, for her assistance with those studies, for her generosity in sharing her extensive knowledge of the history of the powder works, and for her unfailing good sense, good humor, and encouragement. Joy Kaufmann, former research assistant at Hagley, helped us with the work of research and the assembling of pictorial and oral history materials. Both Jacqueline Hinsley and Joy Kaufmann participated in the process of choosing the photographs and excerpts from oral history remembrances, and they offered many excellent suggestions about the organization of material.

Others cooperated and assisted in countless ways. Walter J. Heacock, my predecessor as director at Hagley, provided critical support and leadership, not only in con-

junction with this publication but also in the implementation of the important changes implicit for the Hagley Museum in the entire exhibit on "The Workers' World." The staff of the Hagley Library, and particularly the Pictorial Collections Department—Dan Muir, Jon Williams, Charles Foote, and George Rineer—were very helpful. Barbara Benson, former editor at Hagley and now executive director at the Historical Society of Delaware, provided counsel and encouragement. David Gilchrist, former director of publications at Hagley, saw the booklet through the production process. Debra Bowers typed the manuscript in her usual excellent fashion.

We are especially grateful for the assistance of the National Endowment for the Humanities and the Andrew W. Mellon Foundation. The Research Grants Division of NEH and the Mellon Foundation have supported the research programs at Hagley in numerous ways since 1977. Funding for this particular publication and for the entire "Workers' World" exhibit came from the Public Programs Division of the National Endowment for the Humanities, and we acknowledge with thanks their generous assistance. We are pleased that the exhibit and this publication represent an opportunity to make research in the humanities available to a wide public audience. We hope that this 1992 reprinting will make this booklet available to an even wider audience than the original 1981 printing.

Glenn Porter
Director
Hagley Museum and Library
1992

THE WORKERS' WORLD AT HAGLEY

In the sweat of thy face shalt thou eat bread, till thou return unto the ground.

Genesis 3:19

It is as though the world operated on the principle of "truck." If you want some of this then you must take some of that as well, even though you do not want it.

David Pye, *The Nature of Design*, 1964

THIS PUBLICATION came to fruition as part of an exhibit at the Hagley Museum entitled "The Workers' World: The Industrial Village and the Company Town." Like the rest of that exhibit, it represents the joint labors of the staffs of the Museum and of the Regional Economic History Research Center at Hagley. Although the exhibit includes materials on the lives and work of the inhabitants of many industrial villages and company towns, this booklet focuses on a single industrial village—the Brandywine powder-making community founded by Eleuthère Irénée du Pont in 1802.

From the early nineteenth century until the powder yards closed in 1921, that enterprise provided a livelihood for generations of families. Mostly they were immigrants, primarily Irish, but some French, some Italian, and a few others. They lived and worked in a community that lay in the heart of one of the early centers of the American industrial revolution, along the Brandywine Creek in northern Delaware. By the time the yards closed, the small family firm begun in 1802 was well on its way to being the chemi-

cal giant the world now knows as E. I. du Pont de Nemours and Company. But that is the story of the company in the twentieth century, and this publication is a part of its story—primarily the experiences of the workers and their families—in the nineteenth century.

The Workers' World exhibit and this publication are intended to give Americans of the 1980s a sense of the lives and work of some of the men, women, and children who participated directly in what we call industrialization. They are not, and do not claim to be, comprehensive. For the most part the focus is on "the workers" rather than the owners and managers of industrial enterprises, though the latter surely worked too. It is impossible to convey any real sense of the lives of the workers and their families without taking into account their relationship with the owners and managers, but the bulk of the exhibit and of this booklet deals with the people who worked directly with the new machines and processes. In this way we hope to respond, in part, to the lament of the descendant of one Hagley workman. "It is such a pity," she said,

“that the workingmen have actually been forgotten. All these elaborately furnished homes of the wealthy don't give any indication of how the people lived that did the work.”

We cannot, of course, hope to indicate how all the Americans lived “that did the work.” A story so large and varied cannot be told fully in a single museum exhibit or a single book. Therefore, the exhibit concentrates on two related settings in which industrialization took place: the industrial village and the company town. This publication provides a closer look at a single manufacturing village, the sort of small industrial community that was relatively isolated and that occupied a semi-rural setting. Because of the central importance of waterpower in the initial stages of industrialization, many of America's mills and factories arose in such settings. The Pennsylvania village described in Anthony Wallace's *Rockdale* was an example of this kind of community, and so were the manufacturing hamlets along the Brandywine Creek in Delaware, including the Du Pont powder operation and the communities that lay adjacent to it. New England was dotted with such places, and they appeared in the Midwest and in the South and elsewhere in America as the nineteenth century passed.

The other, closely related kind of community treated in the exhibit is the company town. A company town was a community dominated by a single firm which was often responsible for planning, creating, and running it. The distinctions between industrial villages, company towns, and other industrial settings are not always precise, but the “ideal types” are reasonably clear. In general, company towns appeared later than in-

dustrial villages, and they were usually larger. Sometimes, as in Cohoes, New York, industrial villages evolved into company towns. The earliest example of a company town in America was probably Lowell, Massachusetts; the type spread through northern New England, creating such cities as Lawrence, Massachusetts, and Manchester, New Hampshire, which was dominated by the Amoskeag Company and is described in Tamara Hareven and Randolph Langenbach's book, *Amoskeag: Life and Work in an American Factory-City*. The company town also spread to the South, beginning with Graniteville, South Carolina, at the end of the 1840s and extending into many mill and factory towns of the New South. The company town flourished at the end of the nineteenth century and the early years of the twentieth, reaching perhaps its most comprehensive form in George Pullman's “model town” of Pullman, Illinois, in the early 1880s, a community of more than 8,500 people in 1885 and a direct descendant of Lowell. It was the model for many more such towns, including two that are examined in some detail in the Workers' World exhibit—the Pennsylvania Steel Company complex built in the 1880s and early 1890s at Sparrows Point, Maryland, and the World War I “Westinghouse Village” created by that corporation at Essington, Pennsylvania.

Neither the industrial village nor the company town disappeared abruptly or completely from the American landscape. But changes in the broader economy and society, especially the coming of the automobile, the spread of unions, and the growing involvement of government in the workplace, made for basic alterations in such

communities in the twentieth century. Therefore, the exhibit includes materials pertinent to industrial villages and company towns from their beginnings approximately through the era of World War I.

It should perhaps also be emphasized that the exhibit and this publication focus on manufacturing. No significant attention is paid to other forms of work prominent in industrializing America—agriculture, mining, transportation, trade, and so on. Our topic is the work, the homes, and the communities of laboring people directly involved in the manufacture of goods.

For a variety of reasons, the nature of the relations between labor and capital in industrial villages and company towns was somewhat different from that in the cities. One important difference was that there was considerably less *open* conflict associated with industrialization in the kind of places examined in the exhibit. There were, of course, exceptions to this pattern, including the well-known strikes and violence that marked the company towns of Pullman, Illinois, and Homestead, Pennsylvania, during the depression of the 1890s. But the generalization still seems sound.

In the case of the Hagley powder-making community, there was clearly a much greater tendency toward outward calm and much less open industrial conflict than there was in the nearby city of Wilmington. The first real strike at Hagley, for example, did not occur until 1906, after more than a century of operation. At other industrial villages along the Brandywine the story was much the same. In urban Wilmington there was always a stronger tradition of worker organization, of strikes, and of demands for changes such as

shorter working hours. The city's workers—particularly the more skilled ones, such as coopers, cordwainers, carpenters, and machinists—apparently found it both easier and more necessary to organize and to fight for change than did the workers in the semi-rural villages up the Brandywine. As industrialization progressed, however, there was a general trend toward more frequent and more open tension and conflict between manufacturers and workers in industrial villages, in company towns, and in cities.

Neither the conflict nor the calm indicates the full complexity and ambiguity of experiences in the workers' world. There are two stereotypes that most present-day Americans have of our industrial experience in the past. One is the “workers' paradise” view, in which honest, industrious workers sought “progress,” achieved it readily, and found the streets virtually paved with gold. The other, and perhaps more widespread, stereotype is that of the abused, downtrodden, and helpless worker immiserated by capitalism and immortalized in the superb photographs produced by Lewis Hine at one stage of his career. Difficult though it is, we need to try to understand the workers' world as one of mixed blessings, of both good and bad. Neither stereotype is truly accurate.

One of the clearest “good” elements was that industrialization meant material progress. Looking at the economy as a whole and in long-term perspective, it is clear that the material lot of the average worker got better and better from 1800 to 1920. The income and wealth of most workers rose considerably over time; there is no doubt that the material well-being of most individuals improved during their lifetimes. Similarly, it is

clear that things were better economically for most American workers than for their counterparts in other countries, and that was important to a nation of immigrants. As historians David and Sheila Rothman have noted, "The satisfaction of living better than they had before may well have helped wed American workers to the industrial system... many of the workers were immigrants... these people were in fact substantially better off in this country. The American dream... was not all myth." Further, wages and incomes of workers in manufacturing were higher than those of farm laborers and those of most other working-class groups. Economically, the industrial world represented progress for most, whether compared to the past, to conditions prevailing elsewhere in the world, or to other ready job possibilities in America.

For most of the workers at Hagley, material progress was a reality. Most were immigrants, and industrial work on the Brandywine meant the opportunity to enjoy a better life and higher levels of living. Primarily because manufacturing, unlike agriculture, offered virtually year-round work, laborers could earn much larger incomes than they could on the farm. Donald Adams's studies of the wages, incomes, cost of living, and savings of workers at Hagley up to the Civil War clearly show a general pattern of material betterment. In the long run, throughout the process of industrialization the workers' wages and incomes rose, though there were what Adams terms "periodic but temporary setbacks." As the nineteenth century passed, working-class families in manufacturing had more money to spend on things other than the necessities of life. At Hagley, many

workers were able to save substantial portions of their incomes, and they had a strong incentive to do so, because the Du Pont Company paid 6 percent interest on balances in excess of \$100 that were left with the firm, an unusual arrangement in manufacturing. Adams's conclusion is very likely correct for the entire period that the powder yards were in operation: "In terms of real earnings, the industrial workers of the Brandywine region appear to have kept pace and shared fully in the benefits" of American economic growth.

Although that was the experience for most workers, both on the Brandywine and elsewhere, that is not the whole story. Some workers always lived on the edge of subsistence, and the danger of injury, layoffs, and unemployment was a constant threat to the progress of any individual or family. And, if one thinks of poverty as a relative rather than an absolute condition, many workers lived in poverty simply because they had less than those at the top of the social system. The distribution of wealth and of income was always very uneven throughout the period from 1800 to 1920, as it still is today. The average worker did accumulate material wealth during a lifetime, but it was relatively rare for working-class people to move to middle-class or upper-class occupations or to become rich. That *did* happen, and it happened often enough to keep many people believing in "social mobility," but the odds were against its happening to any particular individual.

Whether they were moving up or down or just getting along, most working families in industrial villages and company towns received some benefits in addition to wages. In

varying degrees these included such things as free or subsidized housing, death benefits, medical care, schools, recreational facilities, churches, and the like. The motives of employers in providing or supporting these were mixed. In many cases there was a genuine wish to improve workers' conditions and a real concern for the welfare of the work force. In addition, there were other, nonaltruistic motives, such as the need to attract and hold a work force and to improve productivity by eliciting goodwill on the part of the workers. Furthermore, the provision of such services made employees more dependent on their bosses and permitted more extensive social controls to be exercised over them. The threat of eviction or withdrawal of other benefits discouraged workers from "making trouble." Many of the aspects of community life that were provided or supported by employers enabled them to influence the behavior of workers. Local churches often conveyed messages of stability and conservatism, as did schools. When the Delaware legislature issued a charter to the new Brandywine Manufacturers' Sunday School in 1817, for example, it stated that "the establishment of Sunday Schools, especially in the vicinity of extensive manufactories, is calculated, not only to promote the instruction of youth, in those useful establishments, in the rudiments of learning, but to conduce greatly to their good and orderly behavior." The records of that nondenominational school show that "attentive," "quiet," and industrious behavior was praised, while idleness was attacked. After the spread of public schools, American schoolchildren were frequently given rewards for "good" behavior, including small cards bearing such messages as "Learn

to Wait." Similarly, employers often sought to keep saloons out of their communities in order to encourage sobriety and industriousness and to combat what they saw as laziness and drunkenness.

In its extreme forms, such as in Pullman and Cohoes, company paternalism "followed the working class family from factory to home to leisure activities and moral education," wrote historian Daniel Walkowitz. "Within this semi-controlled environment the manufacturer sought to instruct his work force in the 'moral' discipline which would reinforce factory work discipline." As nineteenth-century economist Richard Ely said of Pullman, "The citizen is surrounded by constant restraint and restrictions, and everything is done for him, nothing by him." In a material sense workers in such environments often were relatively well off, but a price was paid in terms of social control. Economic historian Edward Kirkland once argued that "whether paternalism is good or bad is a matter of definition. If by it is meant a sense of obligation for the welfare of workers or even a spirit of *noblesse oblige*, paternalism would seem more commendable than harmful; if company town paternalism involved interference in the private lives of the inhabitants or gave the employer an immense advantage in his controversies with the workers, the judgment might well be different." In most cases paternalism involved both the positive and the negative aspects mentioned by Kirkland.

Certainly that was true at Hagley. The relatively good income and savings of many workers have already been discussed, and those material rewards were buttressed with others. The du Ponts appear to have had a

genuine concern for their loyal workers and a sense of obligation toward them. In many respects this was manifested in a fashion similar to that in other industrial villages—the provision of inexpensive or free housing, of gardens that workers' families could use to supplement their incomes, of gifts on holidays, of occasional outings, of support for churches and schools for the working class. In some ways the benefits for powder workers were greater than was common: the payment of interest on accounts left with the company; the provision of medical services either free or at low cost, which was rare indeed in nineteenth-century manufacturing; and an unusual program of pensions and other assistance for widows and families of powder workers killed in the explosions that periodically rocked the yards. To some extent this assistance can be attributed to the unusually dangerous nature of work "in the powder," as the workers called it. Industrial work was generally perilous, but work in an explosives manufactory was particularly so, and this made it in the company's own interest to try harder than others to retain its work force by increasing the benefits. But the assistance that was extended to workers at Hagley also rested in the du Ponts' real sense of *noblesse oblige*, a sense of obligation to loyal and productive workers. In many instances the Du Pont Company provided help to those deemed deserving, such as assisting in the immigration of relatives and friends of workers, and helping those rare employees who could afford to buy their own farms or houses to get good titles when they retired or moved on. In 1843, for example, Alfred du Pont personally saw to the securing of a good land title for a worker, explaining, "I am bound to

protect the interests of the people in my employment." Because all these benefits could be taken away from troublesome employees at the discretion of the employer, they also served as one of the elements that gave employers great power over the workers. The paternalistic impulse, resting in part on self-interest and in part on a sense of moral obligation, brought with it to the workers at Hagley the same mixture of material benefits and enhanced employer control that it brought everywhere else in industrial America.

As we have already seen, this combination of relatively good material rewards for workers and the relatively greater power of manufacturers in the often isolated industrial villages and company towns made such environments less prone to outward, overt conflict between workers and managers than was the case in large industrial cities. This appears to have been true in Europe as well as America. In their study of *Strikes in France, 1830-1968*, for example, Edward Shorter and Charles Tilly found that the level of strikes was in direct proportion to the extent of what they called the "associational foundation" (unions and other associations both formal and informal) among workers. Further, they found that larger cities, which usually had several industries and a range of employment opportunities, made available many more "associational possibilities," thereby making interaction, cooperation, and collective action by the workers likelier. This was much less true of single-industry villages or towns. The same phenomenon was noticed by Daniel Walkowitz in his comparative study of the neighboring New York communities of Troy and Cohoes, significantly entitled *Worker City, Company Town*.

Troy offered much more in the way of associational possibilities and industrial conflict than did the company town of Cohoes.

Even in the industrial village and the company town, however, tension and conflict appeared between workers and management. Sometimes this manifested itself in the form of drinking on the job, absenteeism, lower production levels than the workers were capable of, and minor pilferage of company-owned goods. Occasionally it meant open clashes, in the form of strikes, violence, and destruction of property. As the scale and corresponding impersonality of labor-management relations grew in the latter part of the nineteenth century, these conflicts became more frequent. When open clashes did erupt they came most often in times of general depression, such as the 1870s and the 1890s. They also came when the economic fortunes of an individual industry or firm turned down due to shifting markets, tighter competition, and the like. Such situations sometimes led management to cut wages or to lay off workers, and that made more difficult the preservation of the customary quiet relations between bosses and workers. Paternalism meant obligations on both sides, including a responsibility for managers to make on occasion some sacrifice for the workers' benefit, such as keeping factories open even during slack times. In part, to do so was simply enlightened self-interest on the part of firms anxious not to lose their work forces. But it was also a part of the unarticulated set of assumptions and expectations that often convinced workers and owners that they had a mutuality of interests.

In Pullman, for example, the famous strike broke out during the depression year of 1894,

fourteen years after the town began. Matters exploded when the workers came to feel that the company no longer had their interests, as well as its own, at heart. Although it was still making good money on operations elsewhere, it was not doing so on the car manufacturing works at Pullman in the bad times that followed the Panic of 1893. At the town of Pullman the firm cut wages and began layoffs, but it kept rentals on company housing at the old rates. The workers came to feel frustrated, trapped, and abused because it seemed to them that they were being asked to bear all the burden of hard times. A local Methodist clergyman summed up the workers' sense of the mutual obligations under paternalism: "They started," he said, "on the basis that their system is paternalistic... founded upon a desire to improve the workmen and to solve the industrial situation... on the basis of a mutual recognition. Now... the Pullman company... ought not at least to cut them so severely, but share up with them, from the standpoint that it is a paternalistic system." The company, of course, felt that it was "sharing up" with its employees by keeping the works open on a reduced basis, even though it might well have liked to shut them down entirely until orders picked up. Hard times, for a single worker, a single industry, or for the whole economy, put great pressures on the system of mutual obligations and benefits that usually bound workers and managers together in a surface calm.

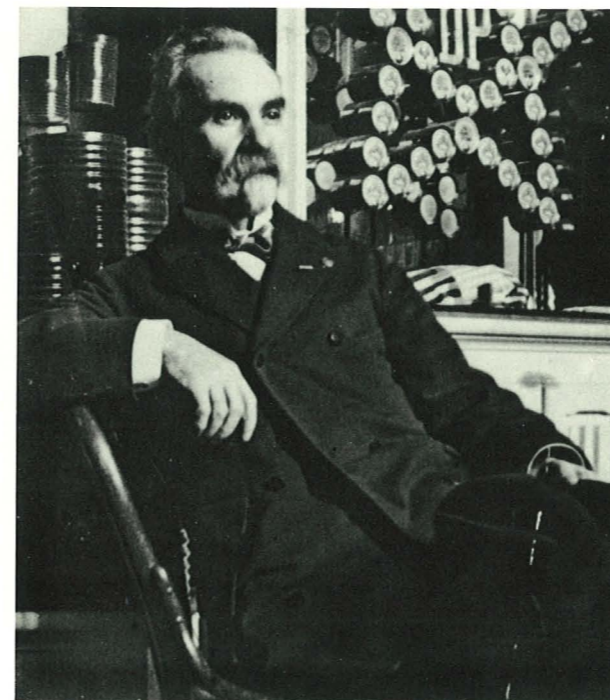
Other stresses came from the interrelated factors of technological change and the growing scale of manufacturing business. For a variety of reasons—the press of competition, the wish to improve output and quality, the

wish to replace unruly but skilled workers—American business introduced new manufacturing technologies, new machines and processes, throughout the 1800-1920 period. This technical and economic progress lay at the heart of the long-run prosperity enjoyed and celebrated by the great majority of Americans, owners, managers, and workers alike. If technical progress is considered in individual situations, however, it again manifests the complexities and ambiguities that marked industrialization as a whole. The introduction of a new machine often threatened the local workers by embodying and replacing part or all of the skills that made them scarce and valuable labor. It also often made it possible for fewer workers to turn out more goods, which again threatened the labor force that was faced with the new technology. In addition, over time the capabilities of the machines tended to define the pace and the nature of work, resulting in a loss of workers' control over the basic nature of their jobs.

In a culture that valued material progress and rising productivity so highly, it was very difficult for workers to admit, even to themselves, that some of their feelings amounted to an opposition to economic progress. In America there was much less of that opposition than in Europe, and it was most strongly evident in the United States in cases where new technologies supplanted older artisan methods of production. Few American workers opposed "progress" in the abstract. But in any individual case that progress often meant a decline in the workers' control of the job, in their power, and in the employment opportunities for those who had been producing with the old technology.

Of course, viewed as a whole, the process of technological advance and economic growth also produced vast new employment possibilities. This is the essence of what economist Joseph Schumpeter called "creative destruction," the replacing of old industries and methods with new ones. To the economist this is a good thing because it represents increased productivity and leads labor to move to the job opportunities that bring the greatest returns: it is efficient for the system as a whole. To the individual laborers, it was often a bad thing because it reduced their power, intensified the pace of work, threatened their jobs, and sometimes forced them to go elsewhere in search of other work.

Technical progress also contributed mightily to the creation of larger and larger productive units. Labor forces grew at individual mills or plants, and eventually many firms became large enough to include several factories. This made it increasingly hard to maintain the older, more personal style of labor-management relations in which owner-managers knew their workers as individuals. Bureaucracy and system came to replace old methods in terms of planning and routing jobs within the factory, controlling materials and tools, combating absenteeism and tardiness, and in defining the nature of work within the factory. The rise of "scientific management" and the creation of personnel departments in large companies were managerial efforts to improve efficiency, but one of their results was that relationships between workers and managers grew more impersonal and mechanical. Labor leader Samuel Gompers spoke for many workers when he complained that "the employees are



Pierre Gentieu, 1842-1930

not known as men at all but are known as numbers."

On the Brandywine, too, the tensions that were often associated with the growing scale of industrial operations were apparent. The size of the powder-making operation of the Du Pont Company grew in the nineteenth century; the yards steadily occupied more ground, and many buildings that had begun as other industrial sites, such as textile mills, were incorporated into the Du Pont powder plant. More importantly, the company expanded in the decades after the Civil War to include many other factories and sites in addition to the Brandywine powder yards that had given it birth. "By 1894," wrote Harold Hancock, "E. I. du Pont de Nemours and Company owned seventeen complete manufactories" in Delaware, Pennsylvania,

Tennessee, and Iowa. Inevitably, the increase in size brought with it a more complex managerial organization. Although most of the du Ponts remained near the birthplace of their family's enterprise, the old black powder yards grew less and less important in the overall scheme of company operations. The death in 1889 of General Henry du Pont, the head of the firm and the family, marked a shift in the older, close paternalistic relationships between the Hagley workers and the owners of the business. More impersonal and more efficient management techniques were introduced, causing some brief conflicts with a minority of disgruntled employees in the form of a wave of barn burnings and destruction of du Pont property. The trend toward larger scale, more impersonal, and more modern management and organization accelerated even more after 1900 as the Du Pont Company was transformed into a modern corporation. By the time the powder yards closed in 1921, they and the way of life they represented had both become something of an anachronism.

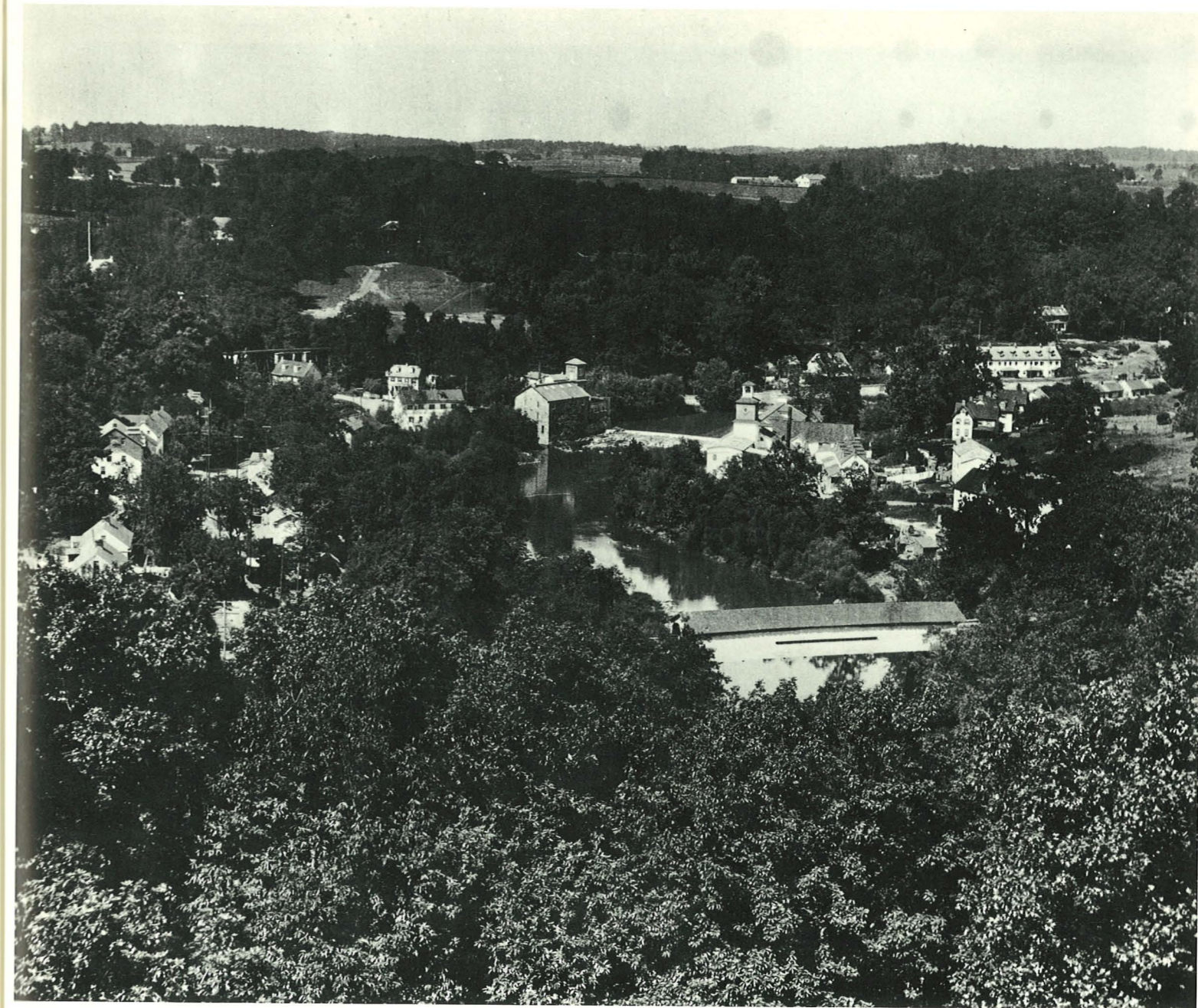
We see glimpses of that way of life in the material that follows. The historical photographs give a tangible sense of the workers' world in the Brandywine Valley at Hagley and nearby Henry Clay Village. Many of the photographs were the work of Pierre Gentieu (1842-1930), a French immigrant worker who rose to a modest management position in the powder yards. Writing, drawing, and photography were his avocations, and it is to him that we owe much of the pictorial record of the workplaces, community institutions, and people of the powder yards in the final decades of black powder manufacture on the Brandywine.

The photographs of Pierre Gentieu and others come even more alive in company with the recollections of former workers and their families. Together they give us a look at the turn-of-the-century Brandywine Valley and at many of the people who lived, worked, and died in it. Their way of life was very different from ours. Home, work, and community were all closely tied together. The "little towns" of worker hamlets and the stores, churches, schools, and saloons were permeated by the sounds of the mill bells and the mills themselves; periodically they were shaken with the sounds of the dreadful explosions that threatened every minute of their lives. Residents shared their experiences in a small-town, almost rural closeness that brought people together and at the same time stifled individuality. It was, of course, a community and time when women's roles were more restricted and more narrowly defined than they are today. Women played vital parts in the life of the industrial village—earning wages mostly in textile mills or as domestic servants, or performing the critical economic roles of taking care of paying boarders, sewing, laundering, cooking, canning, gardening, rearing children, and sometimes earning money peeling the willows used in the charcoal making that was essential to black powder manufacture. Like most working-class communities of the day,

the central events of life were those associated with births, deaths, and marriages. Churches played an important part, particularly for the women, who were excluded from so many activities in society. Politics seems to have been about as important, or unimportant, to people then as it is today. Entertainment was simple, and the community passed most days with little contact with the outside world.

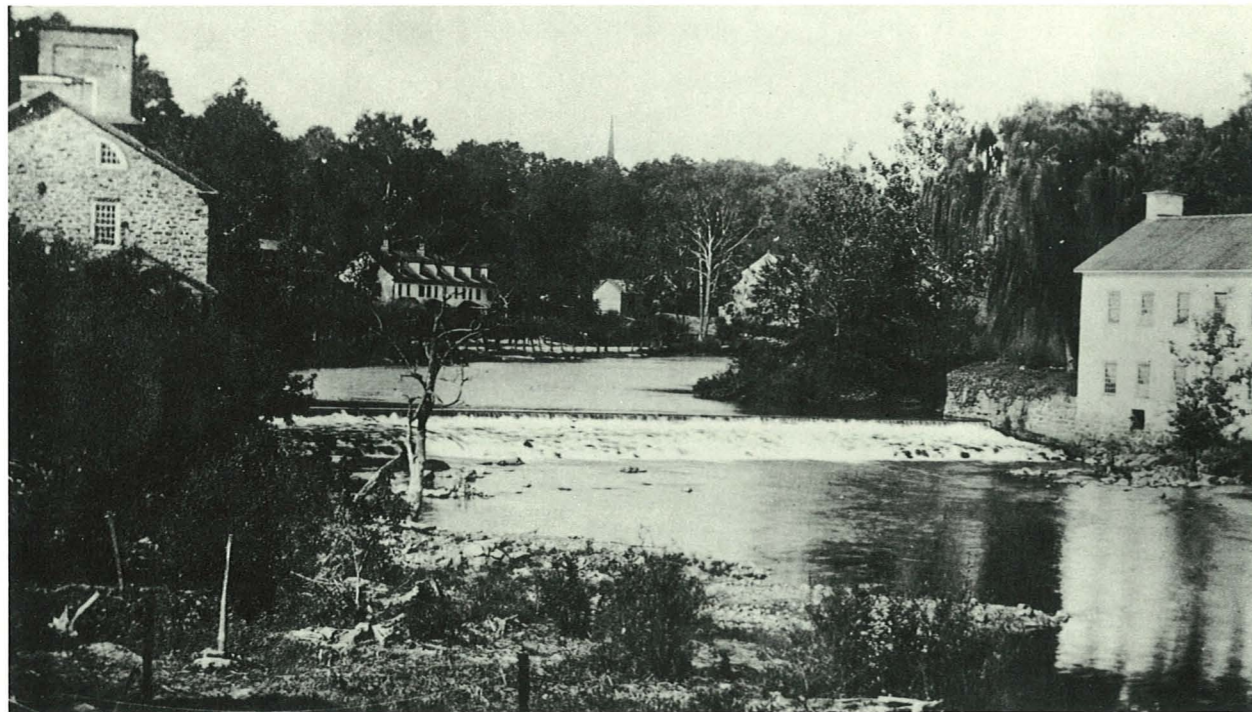
It was neither the good old days nor the bad old days. It was simply different. People neither rejoiced in their freedom from commuting, crime, and big government nor suffered from the lack of television, paid vacations, and automobiles. All that lay ahead. But their world was changing, and the time was not far away when change would cause the powder yards, the economic heart of the community, to shut down. The people who lived there would go on, some to other jobs and some to distant places, just as the company itself had done.

Their way of life, the workers' world of the industrial village, however, did not disappear completely. Some of its old paternal traditions were reshaped and persisted in new, corporate forms. Most importantly, in the photographs, in the memories of the participants and their families, and in the physical setting of the Hagley Museum and its neighborhood, they live on.



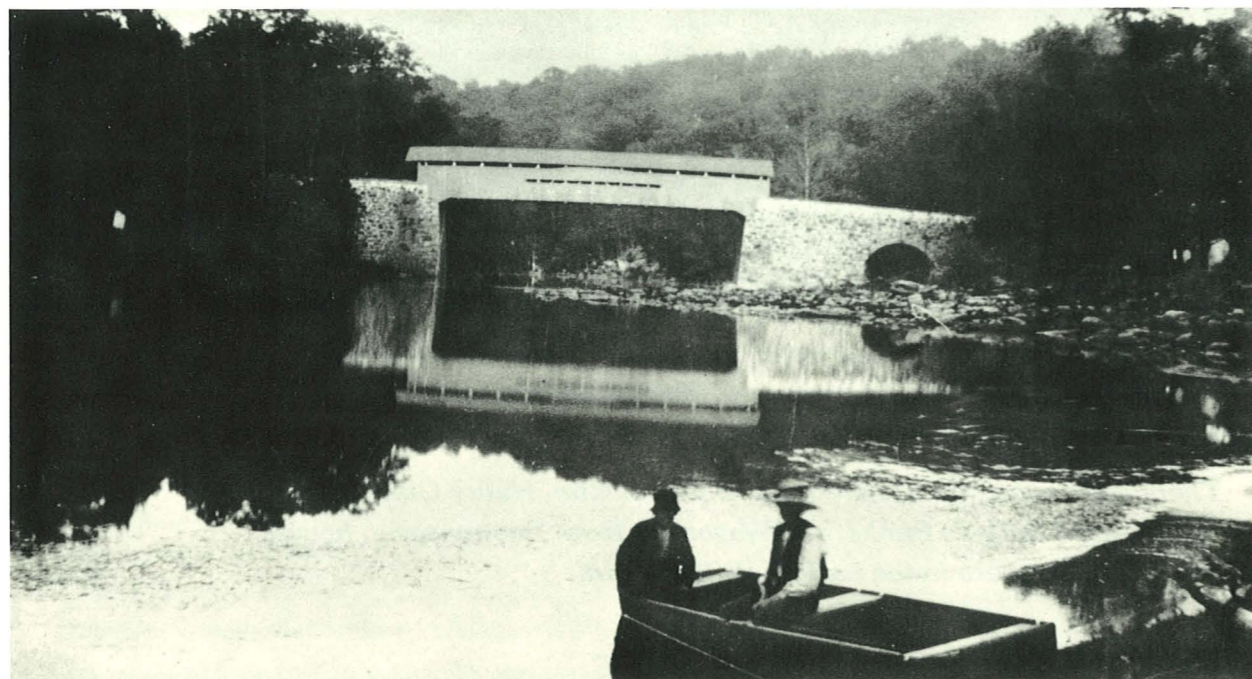
It is pretty through here. I used to go down through that bridge on a moonlit night in November and look up the creek, and it was beautiful.

There were some little towns here: Squirrel Run, Henry Clay, Upper Banks and Charles's Banks, and Wagoner's Row. Twenty-seven houses were right up there in the back of Walker's Mill.

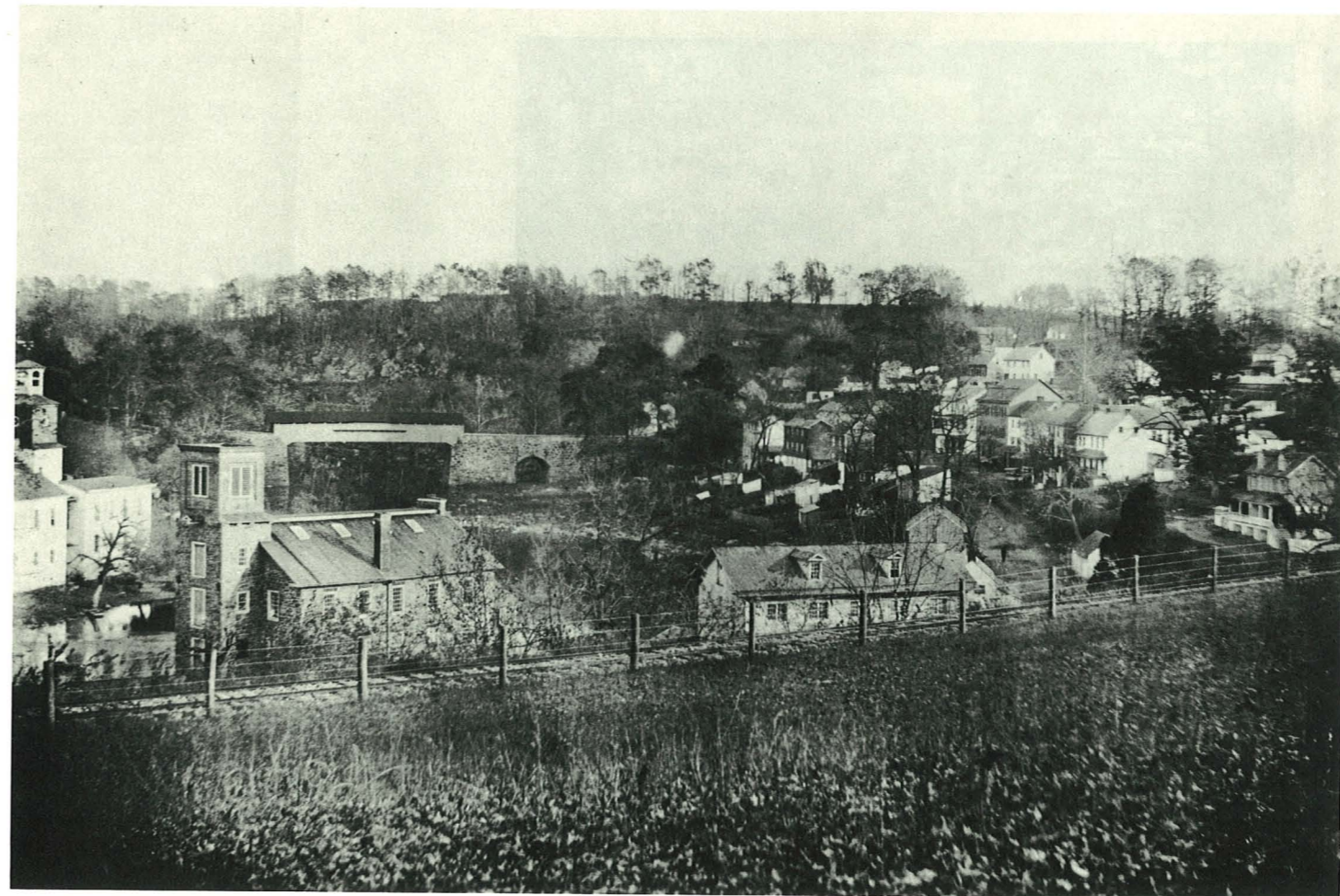


All my life I was around the powder yards. I played around the yards and fished in that creek many times. You could drink that water if you wanted to.

They used to call that the "Poor Man's Beach."



People had cows, and most of the people used the right-hand side of the bridge going over and coming back, but these old cows would get in there in the summertime and lay down at night, and, by gosh, you'd come over there and stumble over a darned old cow. That's true. Saturday night the people would get drunk around here. Oh, it was terrible. The saloons would close up.



They didn't bother much with what was going on in the rest of the world.

We had no jail or nothing like that. We didn't even know what a policeman looked like.



Many a day I put in skating. The ice used to be eight and ten inches thick. We found the best skating right down here.

When the creek froze, people skated on the Brandywine, but always outside the Yards.





Tom Toy had a saloon there along the Creek road. He had two bars on Sunday. He had a Catholic and a Protestant bar. I was never in there, to tell you the truth. That was ahead of my time. Anyhow, when St. Joseph's Mass was over they'd come down there – and when Green Hill Presbyterian Church [was over]. It was about equally divided, about half Catholics and half Protestants worked in the Yards at that time . . . northern Irish, they'd fight and raise the devil – beat one another.

There was never very much contention among them. Maybe on pay nights they'd go down and have a little fun and have a little bat around town.



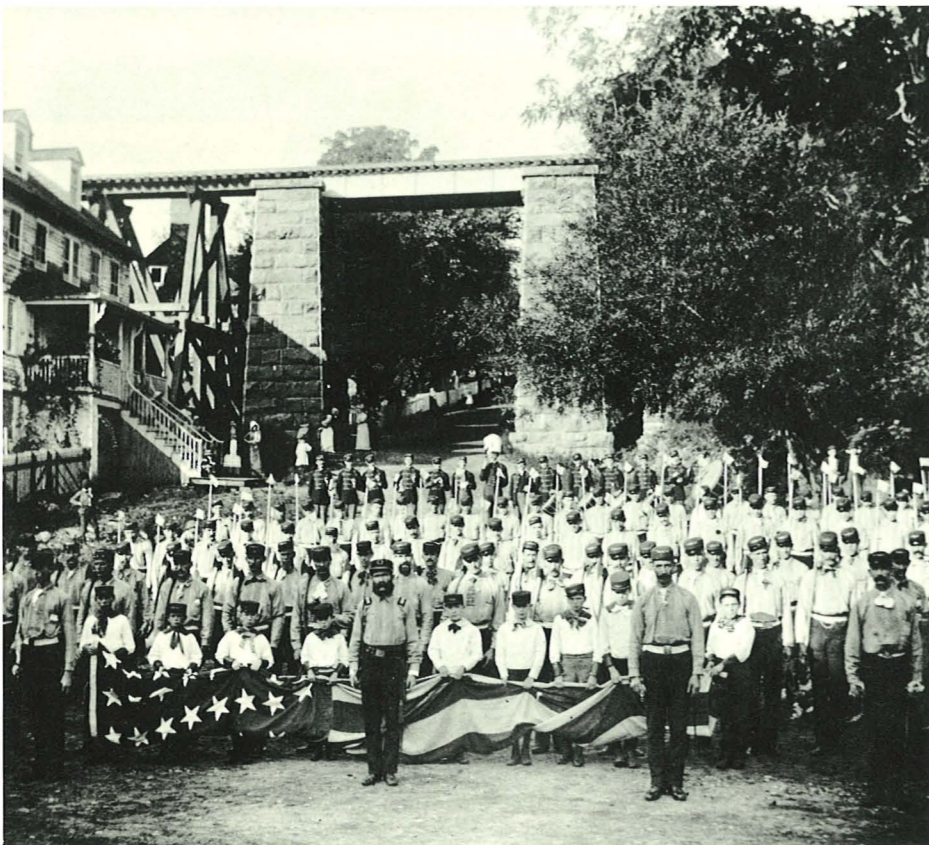
Bob Blakely had a store in Squirrel Run. Sam Frizzell's was right this side of Breck's Lane, and Harry Gregg had a store there at the bottom of Rising Sun Lane. Billy Hunter had the old Stirling Store at Wagoner's Row.



The men were Democratic or Republican. They used to have all the elections at the Mt. Pleasant Saloon, up there.

There was a tavern up at the corner at St. Joseph's Church. There were a lot of taverns along the creek. The Black Cat and Blakely's. There were clubs—the Hibernians were the Irishmen, and the Italians had their own.

They had a Republican [Club] here, and they used to call it Tippecanoe.





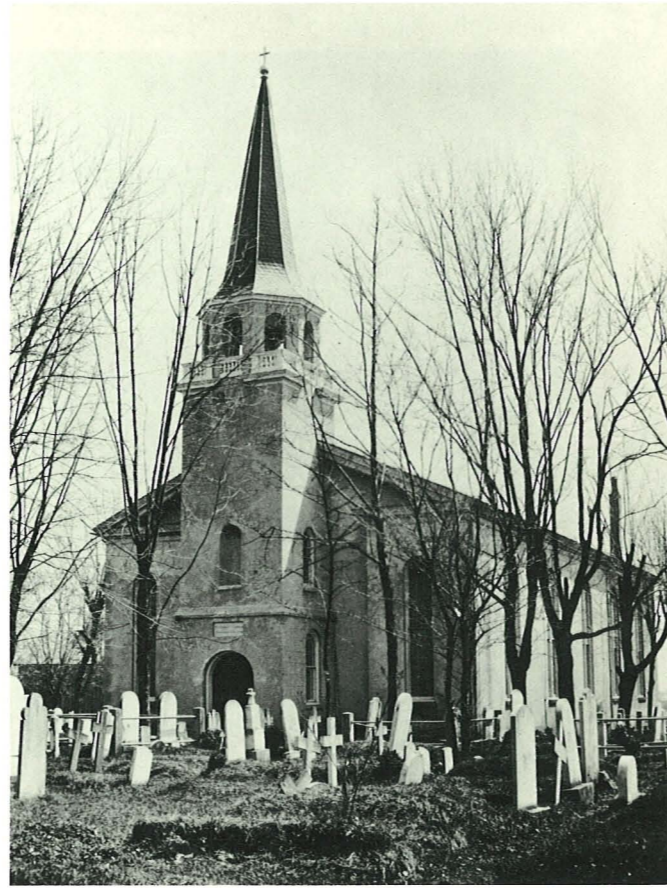
They had what they called a Businessman's Parade when McKinley was running for president. They went around to every man to get him to turn out in the parade. They told him it wasn't political, it was business. They were working for McKinley. And this Francis G. du Pont was the man who went around and asked them to go out. And I know lots of men went out in that parade because he asked them but didn't vote for McKinley. As they went along, people would say, "Hey, you son-of-a-bitch, you turned out for your job!"



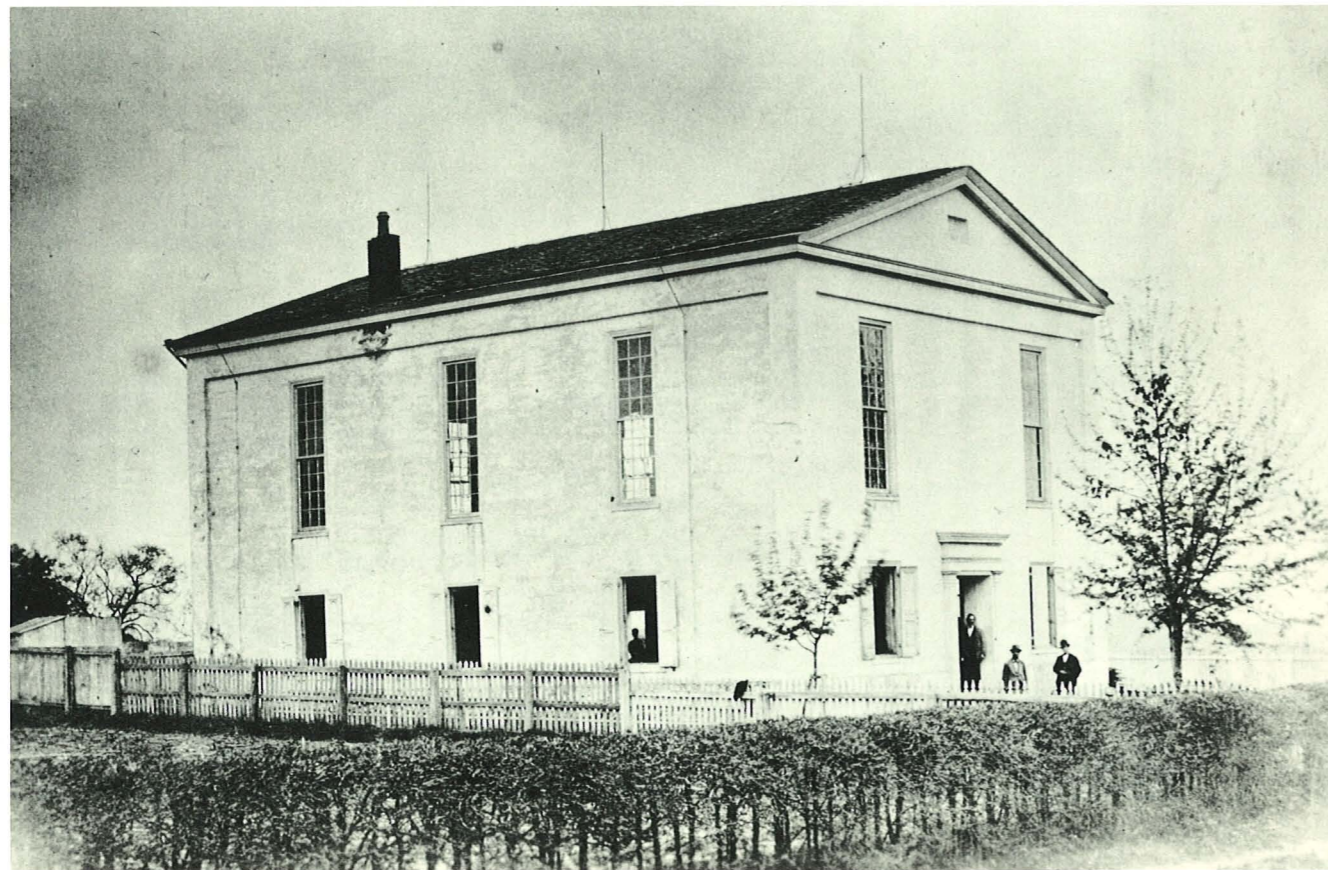
Before the trolley line was built, people used to come out to Rising Sun Hill and walk down to go to work if they didn't live here.

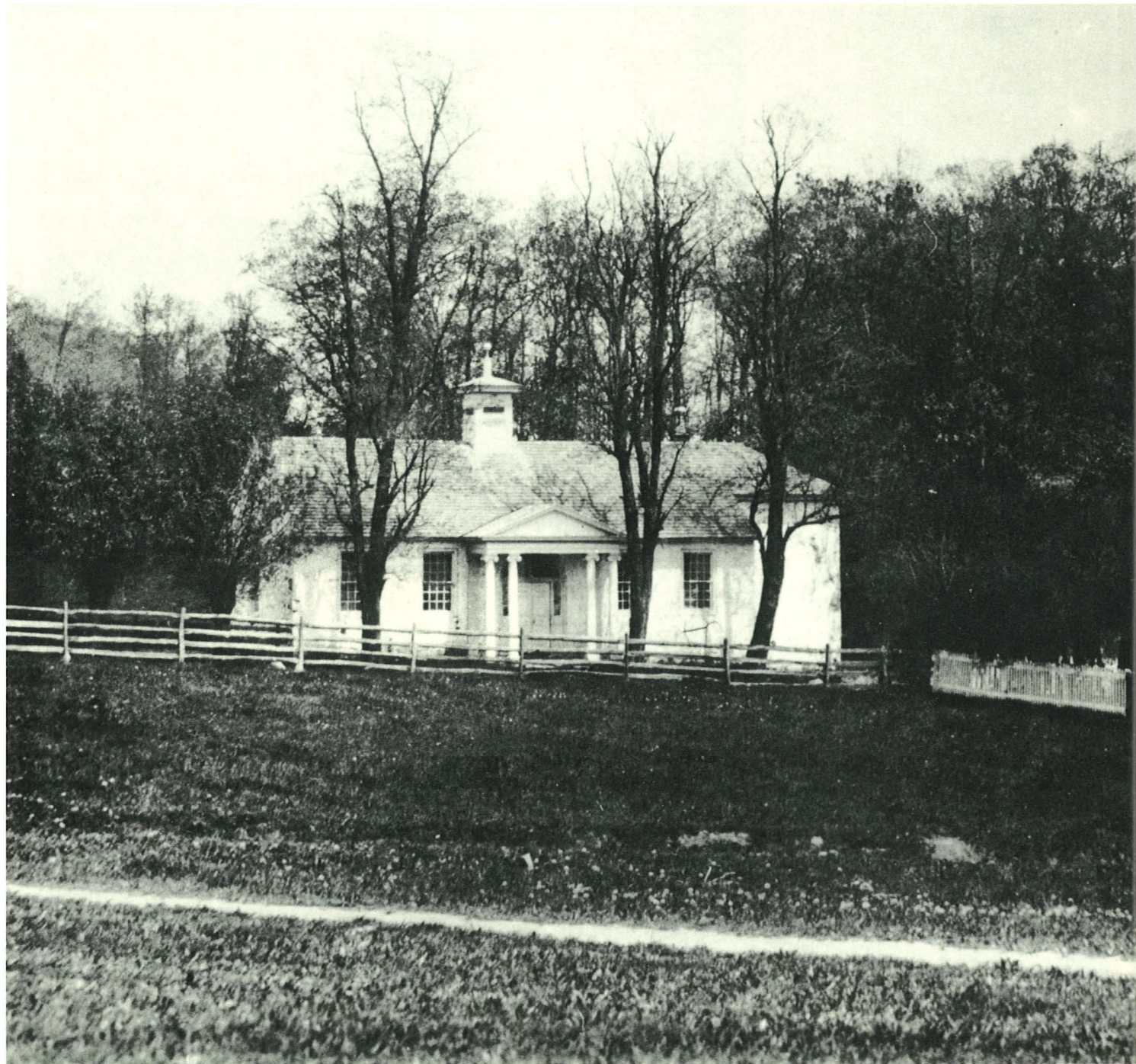


*Sunday was observed very well.
They rested. Of course, they
had been working six days.*

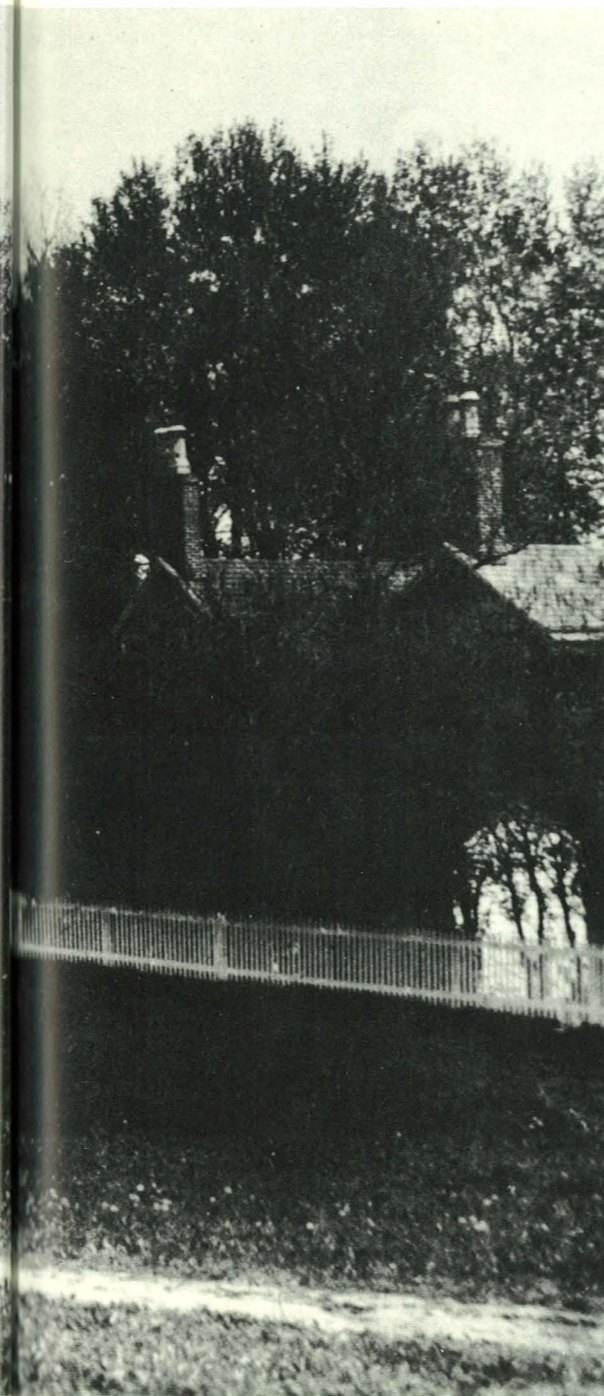


We had very little social life, except what we had at church.





We knew everybody over there because we went back and forth across that field to Sunday school, and people that lived there, we knew all those people.



We all attended Alexis I. [du Pont School].

I went to the Yellow School up at Barley Mill Lane and Montchanin Road. There were four grades and two teachers. There was quite a few teachers over the years. There was Sally Pickles, and Mamie Withers, and Bess Stirling, the daughter of Victor Stirling, the store man.

Most of them stopped after the fourth grade. The girls stayed home and did housework and that kind of stuff.

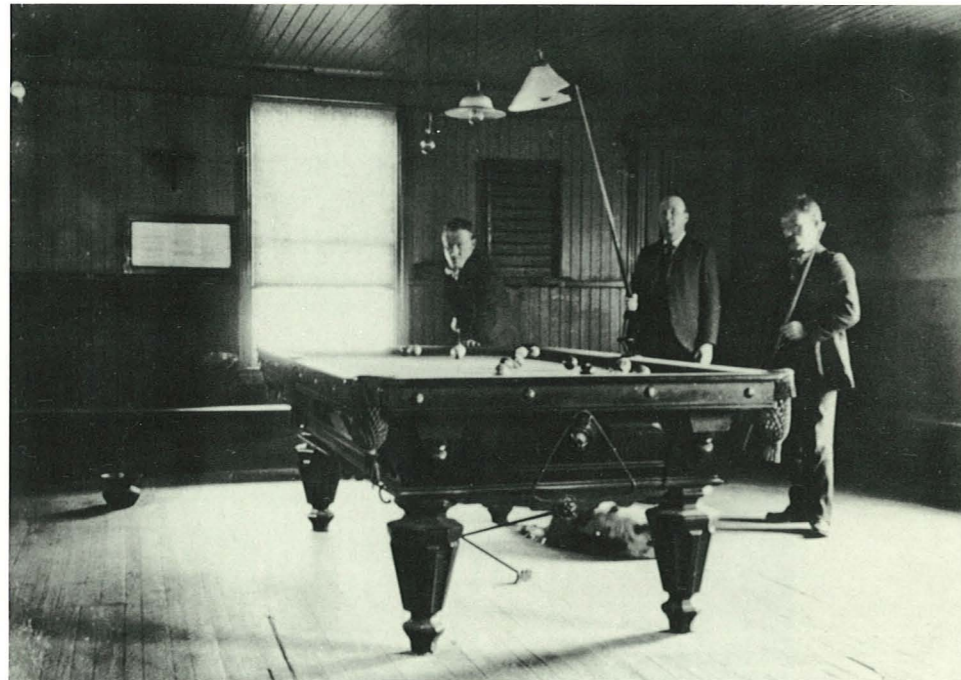




We used to play "Run, Sheepie, Run," where you kept on the move all the time, and they'd try to catch you. Then there was a game called "Hunt the Hare." You used to hide in that game, sort of like hide-and-seek.

When we took a bath, that was maybe once a week or maybe once every two weeks. Of course, in the wintertime, you didn't take one quite so often.

We used to have square dances at Breck's Mill and up at the Du Pont Club. They had a club for the workingmen up there. Had a nice club up there. We used to have a wonderful time.



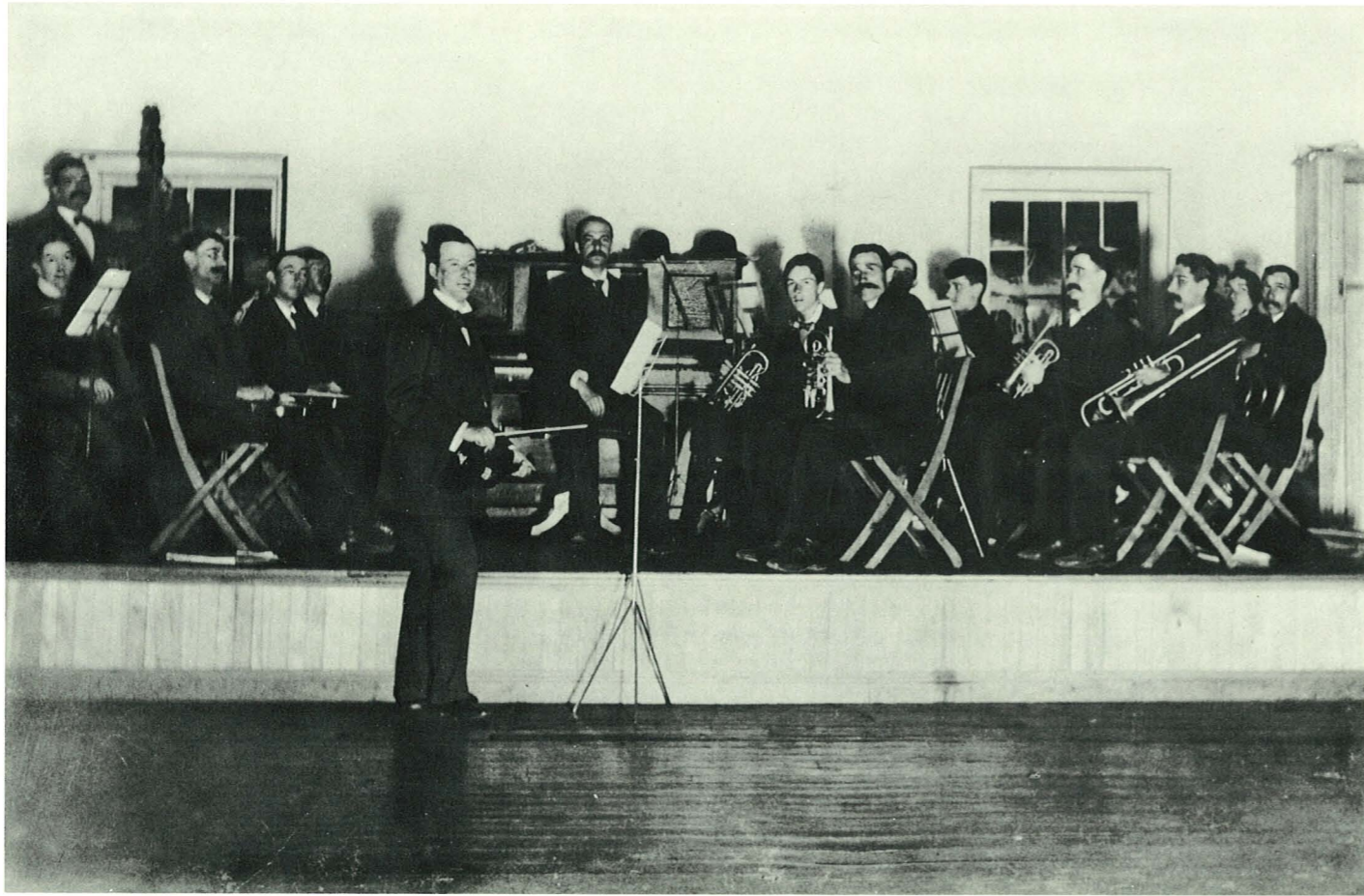
If they wanted to have a dance they would swing in your own house and kick up a party. Breck's Mill was used for a lot of dances, balls, and parties.



When the barley mill burned the piles of wheat burned there for six weeks afterward, just smoldering. They'd throw water on it, but finally they left it go.

I think it was a Saturday that Rokeby [Mill] burned.





The men really loved Mr. Alfred I. [du Pont]. When my father died he sent a great big wreath of flowers. He always had parties for us in Breck's Mill every Christmas. Mr. Alfred I. was very fond of music. He would play Santa Claus, and he would give us all a box of candy and also a toy, and refreshments would be served, and we'd have a good time. After you passed fourteen you didn't get invited, but some of those kids on the Brandywine never got older than fourteen.

He took over Breck's Mill, which wasn't used any more by the company, for the orchestra, and also for the entertainment of the boys and girls of the community. Every Christmas we were invited there, and we all filed by Mr. du Pont and the wife and children and were presented with gifts. Mr. du Pont also invited us to come to his house, "Swamp Hall," on Halloween night. He always had a large bag of dimes and nickels, and he threw them up in the air and watched us scramble for them.

The du Ponts were so nice to us. We had no fear of any du Pont. We did respect them very much; it was like seeing the President of the United States or the King of England when any of them came along. It was always "Mr. Alfred," or "Mr. Frank," or "Mr. Henry," or "Mr. Eugene," and "Miss Louise" and "Miss Joanna."

We would speak, but there was always that class distinction there. You were workers on the place, and there was a difference.

He'd tell you what to do. He'd send you there. He'd do that because he was monarch of all he surveyed.



First came the French, and then came the Irish, and then came the Italians.

I'm of Irish descent. My daddy was born in Ireland. My mother was born and raised on the Brandywine, in the same house where I was born, but it's torn down now.

It took him seventy-three days to come here from Ireland. He came in a sailboat. He left Ireland when he was seventeen. The first place he worked was Du Pont's. He had a cousin who worked here. His name was also Campbell. He came here first, and then he sent for my father. He was from the same part of Ireland.

They didn't have much luggage or baggage. I still have my father's tin box, and it isn't very big. It's marked "Steerage," so I guess that's the way he came.

Several of our relatives came over here and lived at our house until the du Ponts had a place for them in the Yard, or the girls were given positions in the du Ponts' homes. They liked to get girls from Ireland for maids.



This wood-grained tin trunk was brought from Ireland by Edward Beacom, who came to work in the powder yards in 1870. (Hagley Museum)



I'll tell you what the houses were like. Just four walls, no conveniences. They were comfortable. They had the privies in the backyard – and they were good substantial houses, good and warm.

A lot of them had fireplaces in them, and then they got stoves, what they used to call "parlor" stoves. And the cookstoves in the wintertime, they did the cooking.

I know we loved that little house. Everyone had flower boxes in the front. Squirrel Run was so clean. Right across the street from our house there was a little shed. Then outside beside the shed was the coal box for our stove. My mother baked many a loaf of bread in that stove. We had the living room and the kitchen downstairs. Then there was two bedrooms upstairs. We had plenty of room even though we had all those children.

My father was the first one of our family to come to Squirrel Run about the 1870s. My mother came in 1881, but she wouldn't go back because she had such a rough voyage.

My father came from County Fermanagh, North Ireland, and my mother came from County Armagh.



Some had gardens there as you go up Blacksmith Shop Hill. That was all gardens there. The blacksmith shop was there at the gate.

There was this great big living room and then what we called the pantry; and the stairway, which was a crooked one, went up out of the pantry. Then on the other side of that there was a great big kitchen which was only one story. My mother had a kitchen stove, a settee and a big sideboard, about eight or ten chairs, and a bench table. We ate off the table, and our schoolbooks were kept on the seat underneath. Then we had a pair of steps go up the hill in back, and we had a chicken shed.



Everybody in our house had a chore. Usually mine was cleaning. Then you had the dishes and beds to make. That's what amazes me today, just amazes me, to think of the children not having anything to do. My mother found things for you to do. And then when the canning season was on, you always had to help with that.



She generally bought on a large scale. She'd bake her own bread, and this sounds like exaggeration but it's the truth, she'd bake fifty-two loaves of bread a week.

We lived in a house in Walker's Banks. My father, on account of being a powderman, didn't have to pay no rent. Anybody who worked in the powder mills didn't pay. Then later on, I think they charged.





Everybody lived out there worked or did something for the Company or the Yard. Or they didn't live there.



We had potatoes and string beans and beets and cabbage and lettuce and tomatoes, and they put in enough potatoes to do them for the winter.

Every Fourth of July we'd have our first potatoes. We did all the preparing of the garden by hand.



We had chickens and a garden. I used to deal in rabbit dogs.

All through here used to be open country. Some had two or three rabbit dogs, foxhounds. Oh, we had a good time.



Right across from the dam was Chicken Alley.

They had carpenters, to maintain the houses, but if the occupant wanted to paint a door or a shed, or something like that, he'd go get the paint at the [company] Paint Shop. They supplied materials and you did some of the work.



In those days they raised such large families, they worked and came home from work and walked around and talked to their neighbors, and went to bed because they had to get up early in the morning.



My niece Elsie said she thought the world was coming to an end that day. She finally got underneath the dining room table. It damaged the houses so that they moved some of the families out.

Bell used to ring about five minutes to seven in the morning and five minutes to one in the middle of the day. Just enough time for them to get their overalls on and blouse. Start right on the dot.

He asked me why I wanted to come here and I told him I was young and I could grow up with the business, and you have steady work here.

Once they did try to form a labor union. I don't know about the feeling of the men. I never bothered with it. I stayed away from the yard until they got it settled. There was no serious trouble. That was the only time. It was for about a month. I can't tell you just when it was – close to 1900.

When my father began he worked on General Henry [du Pont's] farm. He went from the farm to the composition house, and then he went from there to yard foreman. Yard foreman had charge of building roads, shoveling snow, keeping up the track, etc. After being foreman about thirty years he was pensioned off.

My father-in-law was watchman in that place. He used to be boss carpenter and he got his arm blew off by the cannon up here at a celebration of the Fourth of July. So they put him in here "watching."

My granddaddy was killed there in 1861. My grandmother got a widow's pension – \$8.00 a month and a free house – and the right to keep boarders.

Some of them would go toward Long Row and we wouldn't see them leave but the others crawling up from the yard – tired out from working hard. Yet I think most of the workmen were satisfied with their jobs.



Worker's dinner pail, tinned steel, ca. 1890. (Hagley Museum)



They'd say, "Here comes the powder monkey." Every month, you know, we would go into town. Get paid every month. Walk up to the top of Rising Sun Hill.



Many people thought working here was worth the money, but they were scared to work in the powder – outside of the Italians and the Irish. There was something fascinating about it, though.

They would ring it for lunch. They didn't ring it at quitting time – not that I know of. Morning, then at noon. I never heard tell of them ringing at quitting. The people knew when it was time to quit.



It was six days, ten hours a day. Worked nine hours on Saturday. We got paid for sixty hours a week. All hours were the same except we had no light in wintertime and had to quit when it got dark. They had candles we could work by if we had something in particular.



I just forget what year that was, but they had a strike here, and, of course, these Irish, they wouldn't give in and the company wouldn't give in. Of course, the company didn't have to because they had too many others – they could just let them sit. They let them sit I guess for three or four months.

They simply decided to strike. Mr. Lamnot du Pont told them, "Nothing doing." And the thing went off and they never had a bit of trouble after that.



Mr. Frank du Pont – his son fired a man in the black powder for doing something there. He asked him what he fired him for and he told him. Well, he asked him, "Don't you know that man has a family? He has a family to support. Now you take him back again." And it was done.

[My father's] duties was at night and he had to patrol the Yard after this big explosion. And he was going through the Yard about 2:00. Somebody put their hand on his shoulder, and it was Mr. Frank du Pont. He said, "I just came to see if you were on the job." Father said he knows his hair turned white. He said he was really scared.



There was no notion of unionism in my day. Never heard tell of it. All a sociable crowd and everybody seemed to be satisfied. You met every man somewhere. He either lived in that section or going to work or something. You had fun everywhere you went. All the people knew each other. Give you a hand at anything. Almost everyone lived around here in my day. They all footed it to work.



I considered anything dangerous where powder was.





I was a mile and a half from the Yard. When we heard the explosion we were let out of school, and we ran to the Upper Yard to see it. The houses were all demolished. I saw a lady out on the roof of a house on a "bed tick," we called them. She was dying. Her name was Rose Ann Dougherty. She had a boardinghouse there. Her husband had been killed in the powder [mills] years before.

I'll never forget the scenes I witnessed from our house right after an explosion. They used to flock down – the people from Free Park used to flock down past our house. It was just terrible! You would hear these Irish women calling out, "Worra, worra, where's my John?" Just ring in your ears for weeks afterward. And they would come up and you could tell by the way that woman was supported by another woman that that woman's husband was gone.



There was a good many boys worked in the keg factory, you know. You had to be a pretty quick worker around them machines. About once every two weeks a boy would get his finger off if he didn't watch himself. Right here in the Keg Mill.

Little boys got their fingers smashed up in the tin shop here. Dr. Greenleaf, he was the du Pont family physician and also the surgeon. He would take them little boys in the summertime right out on the porch. He'd get a good strong man around the neighborhood. He'd put his instruments there, and he would take them little boys' fingers off and dress them and there would be no ether or nothing. Those poor little boys were howling and screaming. I saw that. You know that was terrible. They didn't know anything about hospitals.

We used to have fun, though. Everybody was happy and we walked a lot.



The first thing he told me, "First of all, you know, when you're in an office you keep your mouth shut."

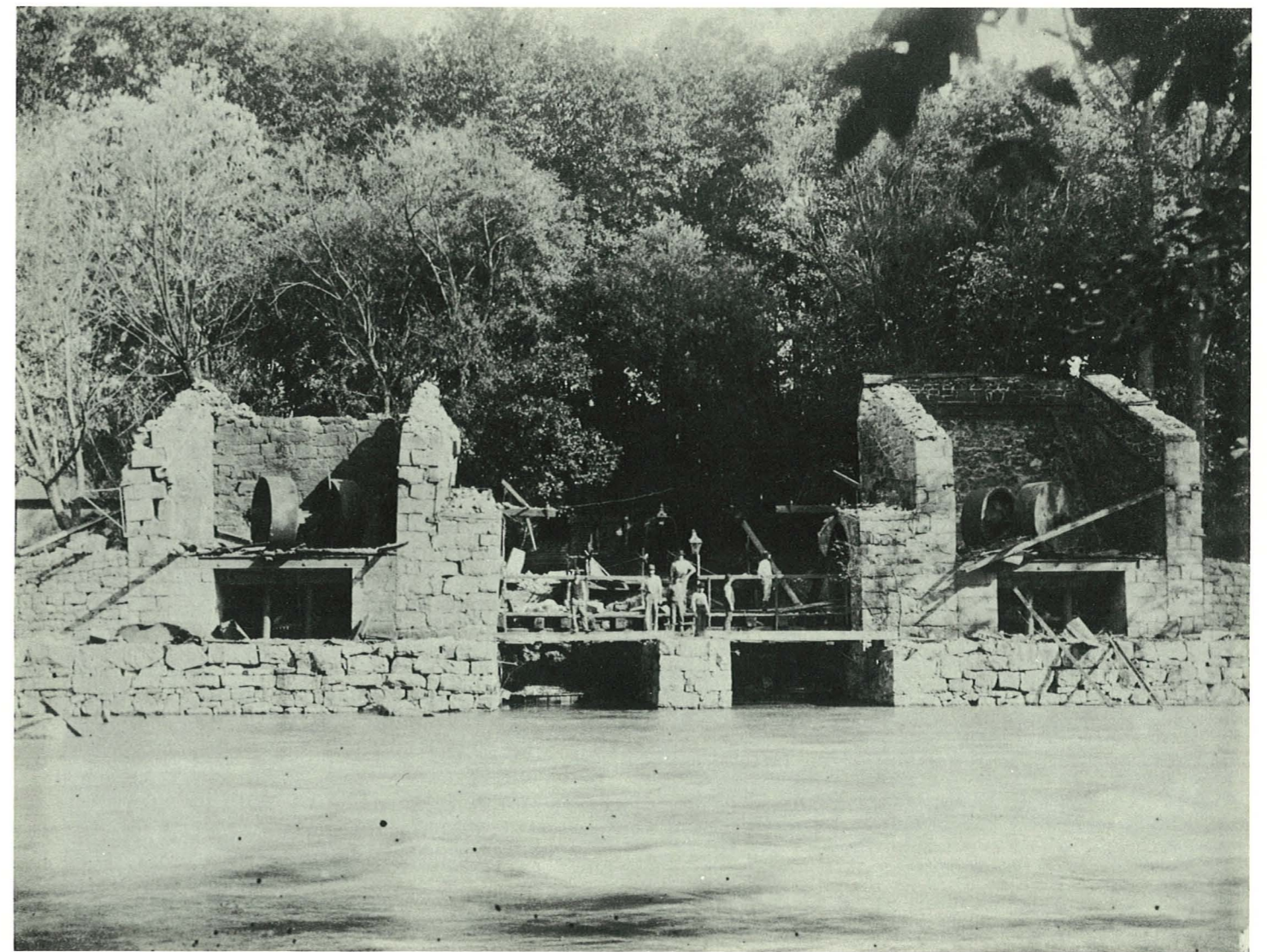
I said, "I'm well aware of that, Mr. du Pont. That's been a Brandywine characteristic. Keep your mouth shut. Don't hear anything. Don't see anything, or don't talk."

He says, "That's it."

They knew that their life depended on this being careful. If you were working in the mill with me I watched you. I wasn't afraid myself but I was afraid that the other fellow might do something.

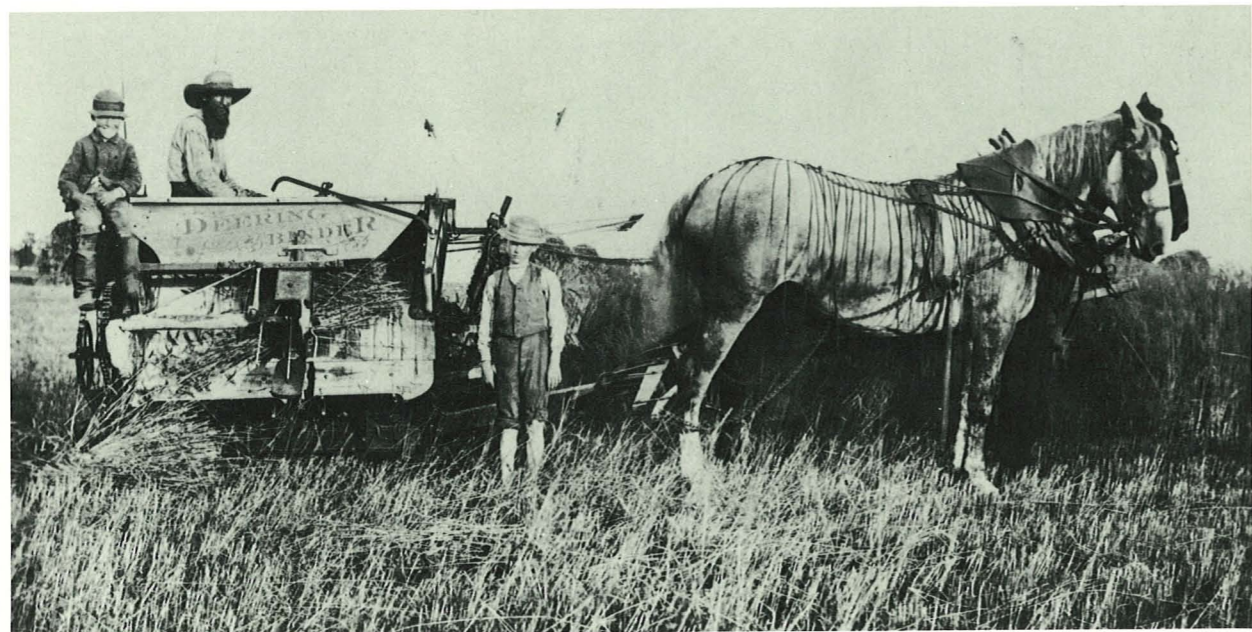
I was working with my old man in Walker's Mill when the explosion happened. The first thing I saw was the weather coming in. Coming right down in. All the windows blew out all along on one side of the mill there. One right after the other.

I still have a very good memory of the men, after there would be an explosion, the men going around with these buckets with a red handkerchief over it and picking up the pieces of the men, you know.

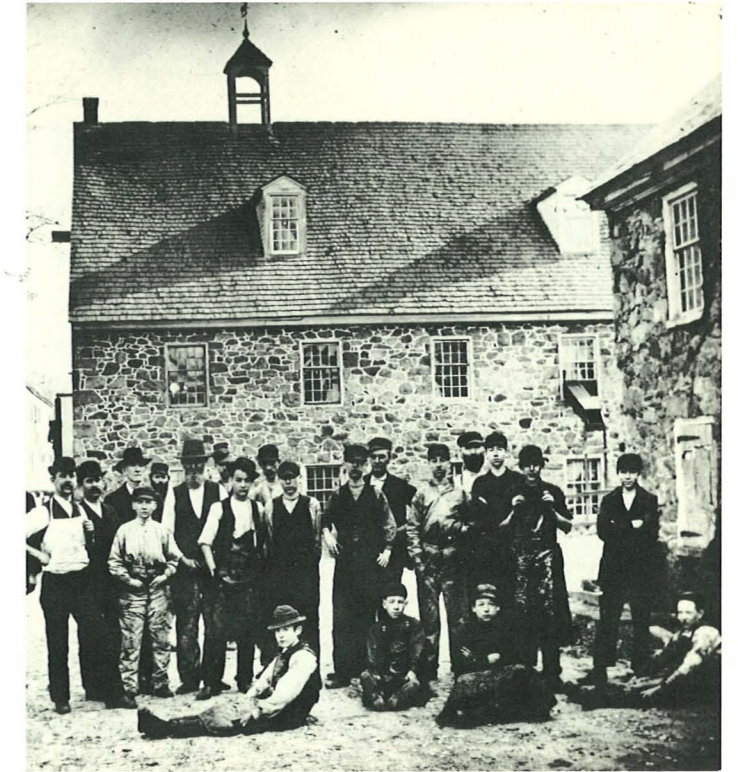




There were no vacations then. They never got a vacation only when they were sick. Six days a week.



There were five of us and my grandmother lived with us all, either my grandmother or my aunt lived with us all the time, and we usually had two boarders because my father didn't make enough money to support the whole family and so of course my mother fed the boarders. And then in harvest time she had to feed the harvesters. Just lunch, but a lunch was a dinner.



The blacksmith shop [was] where we children spent hours, watching the blacksmith or his assistant fashioning objects on the anvil for use in the mills.





The wagons were built by the company. Most of them, I guess, would have been [built] up at the old wheelwright shop in the middle of the Yard. Most of them were painted green with red wheels. Some of them were covered.



Photograph captions

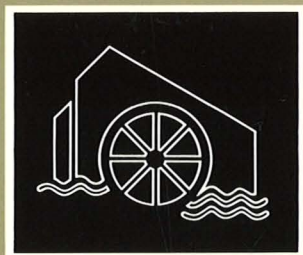
PAGE	
Cover	Gaino family, Squirrel Run, 1890
Frontispiece	Workers' housing, Free ("Flea") Park
17	Overview of Henry Clay Village
18, top	Breck's Mill Dam
18, bottom	Covered bridge at Rising Sun Lane
19	Henry Clay Village, Breck's Mill in foreground
20, top	Breck's Mill and covered bridge
20, bottom	Henry Clay Village in winter
21	Skaters on the Brandywine
22	Hagley workmen in Robinson's Saloon, Wilmington
23, top	Miller's General Store, Rising Sun Lane
23, bottom	Frizzell's Store, Henry Clay Village
24	Tippecanoe (Republican) Club, 1888
25	Lawless's Tavern, Barley Mill and Montchanin Roads
26	Election Day, 1888, Stirling's Store, Buck and Montchanin Roads
27, top	Meadowbrook Fife & Drum Corps, ca. 1907
27, bottom	People's Railway car, Henry Clay Village
28, top	St. Joseph's Roman Catholic Church, Barley Mill Road
28, bottom	Mt. Salem Methodist Episcopal Church, built 1847
29, top	St. Joseph's Church Sunday School group
29, bottom	Green Hill Presbyterian Sunday School excursion, 1885
30	Brandywine Manufacturers' Sunday School
31, top	Alexis I. du Pont School, Kennett Pike, 1894
31, bottom	Old Yellow School House, Barley Mill and Montchanin Roads, 1894
32, top	Children of Du Pont workers
32, bottom	Eleutherian Mills Residence, in use as workers' club, 1890s
33	Breck's Mill, in use as Hagley Community House
34	Fire at Barley Mill at foot of Barley Mill Road, 1897
35	Fire at Rokeby Mill, Henry Clay Village, 1906
36	Alfred I. du Pont leading his orchestra, Breck's Mill
37	General Henry du Pont and family, Eleutherian Mills, ca. 1865
39	Workers' housing, Free ("Flea") Park
40	Andrew Fleming and family, Squirrel Run
41	Gibbons (Foreman's) House near Hagley Yard
42	Gaino family, Squirrel Run, 1890
43, top	Mrs. Joseph Maxwell at home
43, bottom	Workers' housing, Walker's Banks in summer

44	Workers' housing, Walker's Banks
45, top	Seitz family, Free ("Flea") Park
45, bottom	Chicken house at rear of Belin (Bookkeeper's) House
46, top	Chicken Alley housing area
46, bottom	Mr. and Mrs. Emile Krauss and family
47	Damage following explosion of 1890
49	Powder workmen in Hagley Yard
50, top	W. F. Lynch and pipefitters, 1905
50, bottom	Transporting powder in Hagley Yard
51	Old Machine Shop, Hagley Yard
52	Lammot du Pont, 1880-1952
53	Francis Gurney du Pont, 1850-1904
54, top	Women and children, Walker's Mill
54, bottom	James Bright, tinsmith at Hagley Yard
55, top	Labor gang, Hagley Yard
55, bottom	Explosion scene near Hagley Yard
56	Upper Banks after explosion of 1890
57	Workers at Henry Clay Keg Mill, 1895
58, top	Interior, Du Pont Company Second Office, ca. 1900
58, bottom	Samuel Frizzell, errand boy, Hagley Yard
59	Rolling mills damaged in 1889 explosion
60, top	Entrance gate to Lower Hagley Yard
60, bottom	William Hetherington, "Boss Farmer," Du Pont farm
61, top	Green and Wilson's Keg Shop, Charles's Banks
61, bottom	Blacksmith Shop, Hagley Yard
62, top	Lutton's covered wagon team in Hagley Yard
62, bottom	Eleutherian Mills barn

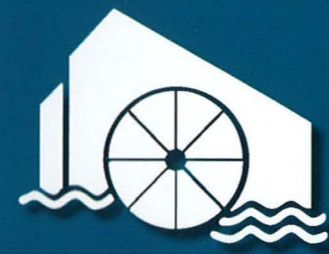
All photographs are from the collections of the Hagley Museum and Library.

List of Persons Whose Oral History Interviews are Quoted

Edward Bader	Machinist in the powder yards beginning 1896.
Elizabeth Beacom	Her father was employed in the saltpeter refinery at Hagley and later worked as gatekeeper.
William Buchanan	Born in Henry Clay Village; he and his father both worked in the powder yards.
Joseph Campbell	Third-generation powderman. He worked in the yards at the time of the Spanish-American War.
Catherine Cheney	Grandfather and father worked at the powder mills. Grew up in the area; occupied house next to the Gibbons (Foreman's) House.
Katherine Collison	Resident of the Belin (Bookkeeper's) House, 1870-1892. Her father followed three generations of Belins as the company bookkeeper.
John Dougherty	Grandson and son of powdermen; lived at Upper Banks. Began work in the yards in 1894 at the age of fifteen.
Philip Dougherty	Reared at Charles's Banks, son of a powderman. He began work in the Keg Mill in 1887 at the age of thirteen.
Gino Ferraro	Millwright at Hagley. His father worked in Walker's Mill, and the family lived in Walker's Banks.
Pierre Ferraro	A blacksmith by trade, he became a powderman. Gino Ferraro was his brother.
William Flanigan	A third-generation Du Pont employee, he drove a team in the yards. His grandfather was killed in an explosion at Hagley in 1872.
Samuel Hackendorn	Lived in Charles's Banks, Squirrel Run, and Flea Park while his father was employed in Hagley Yard.
Joseph Haley	Joined the Du Pont work force in 1898; became yard foreman by World War I.
Ann Hudson	Born in Upper Banks. Daughter of a powderman.
Faith Betty Lattomus	Born in Squirrel Run. Her father was the "boss farmer" on the Du Pont farm.
Harry Lee	A Du Pont employee from 1906; he boarded at the Upper Banks.
William Lynch	Grandson of a "boss cooper" at the Du Pont Company, he became head of the plumbing and pipefitting crew at Hagley.
F. L. Mathewson	Born in 1895 on Breck's Lane, the great-grandson of a powderman who came from Ireland to work in the yards.
John Peoples	Born in Ireland in 1871. Attended the Yellow School in the 1880s and then went to work in the Keg Mill at Hagley.



HAGLEY MUSEUM AND LIBRARY
WILMINGTON, DELAWARE



- Car Show
- Craft Fair
- Patent Model Exhibit Opening
- Harvest Party
- Upcoming Lectures



Hagley Car Show





From The Executive Director

Geoff Halfpenny
Executive Director

Cover: 1910 REO owned
by Lee and Helen Turner.
Hagley's Soda House is in
the background.

Back cover: An autumn
view of the boxcar along
the millrace at Hagley.

Following on from my last column I am delighted to report that Dr. Thomas M. Connelly, Jr., Executive Vice President & Chief Innovation Officer at DuPont, was voted on to our Board of Trustees on June 1, 2009. Both the board and staff at Hagley Museum and Library look forward to working with this multi-talented individual, and to continuing to forge ever stronger links with the mighty company that was born here on the Brandywine.

I hope that you managed to attend at least one of our two evenings of spectacular pyrotechnics "Fireworks at Hagley: Innovation Along the Brandywine." Thanks as always to our presenting sponsor, the Wilmington Trust Company, the professionalism of Fireworks by Grucci, colleagues Adam Albright, Linda Gross, Kim Kelleher, and Jill MacKenzie for their tremendous hard work, and to everyone who prayed for good weather!

Our exhibition "Nineteenth-Century Patent Models: Innovation in

Miniature" is proving very popular with our general visitors and we're excited about its new school group program. Our coordinator of education, Briana Feinberg, is developing an essay contest for middle school students to give teachers another connection to the patent model exhibit that they can use in their classrooms. Themed on the importance of intellectual property, the contest will be open through the fall, and we will present prizes to both students and teachers at our Invention Convention.

As I write, the final touches are being made to the plans for our fourteenth annual Hagley Car Show, scheduled rain or shine (please shine) for Sunday, September 20. The special feature is Brass Era Pre-1916 Rarities. New this year is on-site parking, so please prepare yourselves for a memorable drive along the most beautiful mile of the Brandywine before parking and entry to the show. I'll be there and look forward to seeing you!

Hagley Magazine is published quarterly by Hagley Museum and Library, a 501(c)(3) nonprofit organization. Address: P. O. Box 3630, Wilmington, DE 19807-0630 (302) 658-2400 • www.hagley.org

Editing: Jill MacKenzie, Meg Marcozzi, Catherine Riley

Design: Adam Albright

Photography: Kathleen Buckalew

Board of Directors

Henry B. duPont IV
President

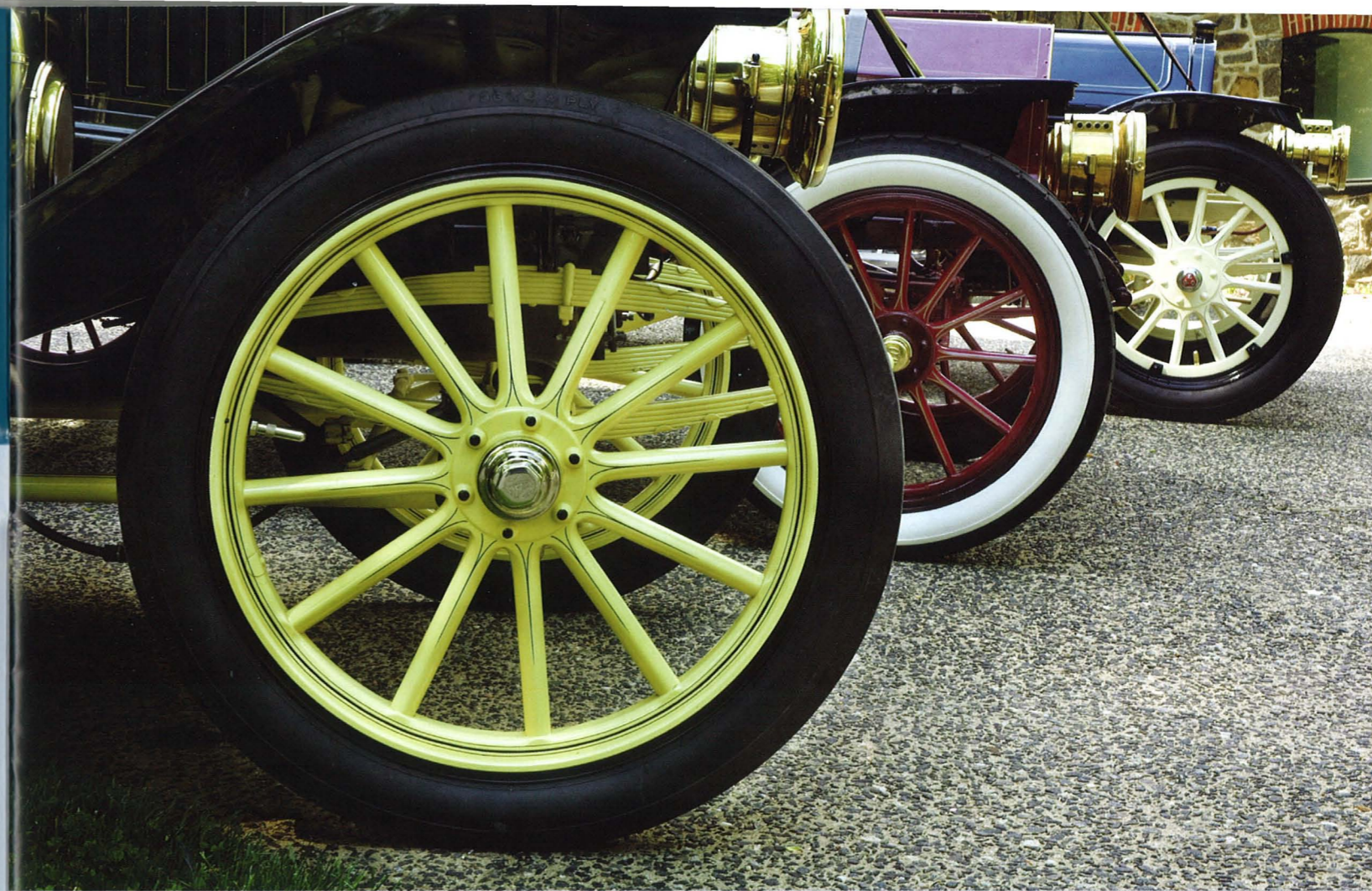
Blaine T. Phillips
Vice President

E. Matthew Brown
Treasurer

Ann C. Rose
Secretary

Carol A. Ammon
Edward J. Bassett

Howard E. Cosgrove
Augustus I. duPont
Edward B. duPont
Louis Galambos
Robert V. A. Harra, Jr.
Eldon du Pont Homsey
Darla L. Pomeroy
Margaretta K. Stabler
M. Gary Talley
JoAnne Yates



Hagley Car Show: Brass-Era Rarities

Does anyone remember the family car from twenty-five years ago? Chances are, you may find one like it in the general field at this year's car show. A combination of more than five hundred cars, trucks, and motorcycles will be on display on September 20, marking our fourteenth year that Hagley celebrates the history of the automobile.

This year's featured brass era cars or "horseless carriages" mark the beginning of automotive history, when vehicles had fancy brass trim and lanterns. From the 1890s until 1916, these wood and forged steel beauties ruled the road. You can see a 1907 Autocar Runabout, 1909 Mitchell Open Touring, and 1911 Ford Touring among this special group.

Autos from the early 1900s through 1984 will be included in this year's

show. Imagine having to hand-crank your car to start it or having to use fire to heat water to produce steam before your car would move. It wasn't until 1912 that Cadillac introduced "the car without a crank," making the electric starter available. Many vehicles were equipped with cranks for starting well into the 1930s.

Visitors will be treated to cars from the Roaring Twenties era when autos became larger, with long hoods, powerful engines, and unlimited paint color options. Cars could be custom-ordered as opposed to mass-produced. The post-war cars of the forties can be seen as the bodies become flowing and styled and running boards disappear.

Come to Hagley and enjoy the best of automotive history.

Hagley Car Show

September 20, 2009
10 a.m. to 4 p.m.

Pre-event Tickets
(from the Hagley Store or
www.hagley.org)
\$8 adults, \$4 children 6-14

Day-Of-Show Tickets
\$10 adults, \$5 children 6-14

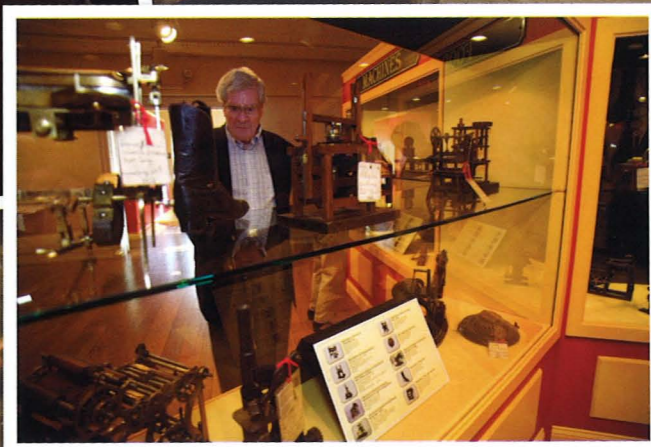
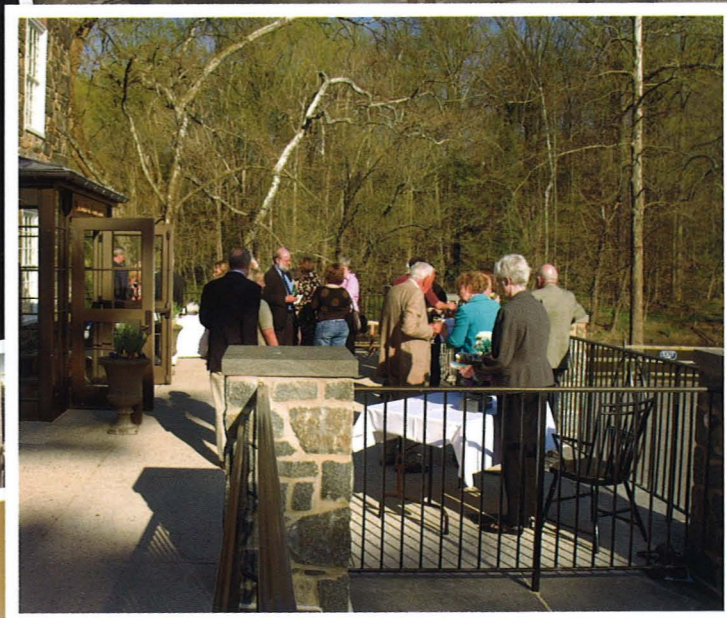
Free for members and
children five and under.
Event held rain or shine.

The Hagley Car Show
is sponsored in part
by Delaware Cadillac-
Saab-Subaru, Eagle
Transportation, and Nuclear
Electric Insurance Ltd.

NINETEENTH-CENTURY
INNOVATION
IN MINIATURE
PATENT MODELS



Thank you, Hagley members and guests, for making the April opening of "Innovation in Miniature: Nineteenth-Century Patent Models" such a success!





A visitor explores Hagley's "Easy Does It!" exhibit.

Golden Pheasants Harvest Party

Hagley's Golden Pheasants membership group is sponsoring a Harvest Party for members and friends on Saturday, September 26, from 4 p.m. to 7 p.m. The party will celebrate the beauty of the Brandywine with music, demonstrations, family activities, and a delicious barbecue.

The festivities begin with music by Dan and Dan. New this year, this exciting band plays contemporary music, featuring everything from Dave Matthews Band to Coldplay. They have performed at a variety of local venues, from Kid Shelleen's to Chesapeake Inn. Enjoy a ride on our jitney bus, visit our "Easy Does It!" exhibit, play our gears scavenger hunt game, and enjoy games from yesteryear with spirograph and hula hoops. There will also be a

tree seek-and-find activity game and nineteenth-century games. This is a full afternoon of family fun.

The picnic dinner, catered by the Wilmington Club, will feature all of the traditional favorites, including barbecued chicken, hot dogs, hamburgers, baked beans, potato salad, mixed fruit, and dessert. Specialty beers, courtesy of Twin Lakes Brewing Company, and wine will also be served (only to those twenty-one years of age and older).

Hagley's Golden Pheasants membership category is recommended for the young and young at heart (twenty-one to forty-five years of age) and their children. Hagley members can join the Golden Pheasants for as little as \$5.

Golden Pheasants Harvest Party

\$15 - young adult (17-20)
\$7 - youth (5-16)
free - children under 5

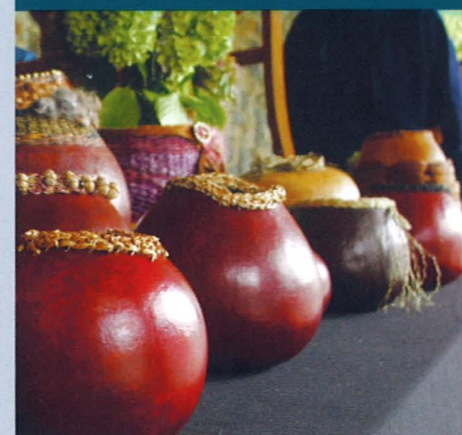
Before September 4
\$30 - member adults
\$45 - not-yet-member adults

After September 3
\$40 - member adults
\$45 - not-yet-member adults

Reservations required by September 18, 2009.

Tickets can be purchased at www.hagley.org.

Questions? Contact the membership office (302) 658-2400, ext. 235 or kkelleher@hagley.org.



Hagley Craft Fair

The breathtaking colors and textures of fall on the Brandywine provide the perfect backdrop for Hagley's annual Craft Fair. The Craft Fair offers a great way to enjoy the beauty of the site while appreciating the talent of artisans who are so often inspired by these same colors and textures.

Nature is reflected in the works of many artists, from Delaware's exquisite textile landscapes to the sundials and armillary spheres that John Shultz of Lititz, Pennsylvania, creates to track time and space. Pen and ink nature drawings by Ramona Maziarz of Middletown, Delaware, reflect her belief that "nature leaves no space untouched." They join whimsical clay birdhouses by Cynthia Lawrence of Tusnela Pottery in Downingtown, Pennsylvania; natural

soaps, balms, and lotions produced by Scott Blackson of The Soap Fairy, Inc., in Milford, Delaware; and fused glass creations by Cagla Inselbag, who is fascinated by the interplay of glass and light, to illustrate a few of the unlimited ways in which nature inspires craftsmanship.

The Craft Fair, October 17 and 18, is held on Hagley's upper property in the Soda House and Library from 10 a.m. to 5 p.m. with free shuttle service between both buildings. Lunch service is available. \$4 admission, free to members.

Hagley's Craft Fair features a wide selection of handcrafted items.

Hagley Craft Fair

October 17 and 18, 2009
10 a.m. to 5 p.m.

Library and Soda House,
with free shuttle service

\$4 admission
Free for members

Hagley Fall Lectures and Conference

David Pensak: "Innovation: It's Not Just for Breakfast Anymore ..."
September 23, 7 p.m., Copeland Room

David Pensak is an expert on the process of innovation. Dr. Pensak founded Raptor Systems, the company that produced the commercially successful Internet firewall; he also founded the company Authentica, a pioneer in the field of digital rights management. His recent publication, *Innovation for Underdogs*, describes the innovation process as a practical methodology for uncovering solutions to problems. Pensak will discuss his ideas about innovation, followed by a question and answer session, as well as book sales and signing. Dr. Pensak worked as a research scientist at the DuPont Company for thirty years, and is currently on the faculty of the George Washington University School of Law and the University of Delaware. The lecture is free and open to the public.

Norman W. Henry: "Radiation Awareness"
October 21, 7 p.m., Copeland Room

We are exposed to radiation every day of our lives, either in our homes, natural environment and work environment, or when we go for medical diagnosis or treatment. Sometimes, we can feel it as heat or see it as light from the sun. It is a form of invisible energy that in spring is responsible for flowers blossoming and trees and grass turning green. This presentation will give a brief history and introduction to radiation chemistry and physics, review the use and application of radiation in our society today, and discuss past experiences and present

expectations for the future. The lecture is free and open to the public.

Norman W. Henry is a retired senior research chemist and certified industrial hygienist from DuPont. He currently works as a radiation control specialist for the State of Delaware. He served on the Radiation Authority for the State of Delaware for twenty-five years and was a Radiation Safety Officer for DuPont. The lecture is free and open to the public, and is sponsored in part by the Delaware Academy of Chemical Sciences.

Conference: Understanding Markets: Information, Institutions and History
October 30 and 31, 2009, with co-sponsorship from the German Historical Institute

Hagley is pleased to announce the opening of the Ernest Dichter papers. Dichter was a Vienna-trained psychologist who came to New York in 1938 to escape the Nazis. He became a pioneer in the development of motivational research, a marketing tool that used psychological techniques to probe consumers' desires and responses to market products. His clients include an impressive list of American corporations, including Mattel.

The conference will feature presentations on how businesses tried to adapt products as diverse as gas stations, synthetic fabrics, indigo dye, automobiles, and medicine to meet consumer expectations. Also, presenters will explore efforts by retail stores and patent medicine companies to understand consumer preferences. Registration is required, see sidebar.



Our members are also our best advertisers.

As a member of Hagley, you're already familiar with the beautiful 235-acre site with miles of walking trails.

Have you told your friends and relatives about Hagley? Why not surprise them with gift memberships to Hagley Museum and Library, so they can enjoy all Hagley has to offer?

Your recipient will receive a card announcing your gift along with a letter detailing the benefits of membership. There are several different levels of membership to choose from, and the benefits of these are listed in the Hagley membership brochure and on www.hagley.org.

To order a gift membership, contact the membership office at (302) 658-2400, ext. 235, or at kkelleher@hagley.org.

Hagley Fall Conference

For registration information, visit www.hagley.org or contact Carol Lockman at 302-658-2400, ext. 243, clockman@hagley.org.

MEMBERSHIP APPLICATION FORM

Information

Mr. & Mrs. Mr. Mrs. Ms. Miss Dr.

Name: _____

Address: _____

Phone: _____

E-mail: _____

Please do NOT send me e-mail.

Membership Level (choose one)

- Individual\$30
- Scholar\$35
- Hagley Staff/Volunteer ...\$50
- Household.....\$60
- Patron.....\$150-\$499
- Sponsor.....\$500-\$999
- Benefactor\$1,000+

Payment Amount: \$ _____

Check (payable to Hagley)
 Visa MasterCard Discover AMEX

CREDIT CARD NUMBER

EXPIRATION DATE

NAME ON CREDIT CARD (PLEASE PRINT CLEARLY)

SIGNATURE

Please return this form to: Hagley Museum and Library • Membership Office • P. O. Box 3630 • Wilmington, DE 19807-0630

Broadway Musical Day Trip

The Addams Family

Join Hagley members for a theatre outing to New York to see the much-anticipated Broadway hit musical, *The Addams Family*, on Saturday, April 17, 2010. Depart at 8:30 a.m. from Hagley's library overflow parking lot. Please use the Buck Road entrance off Route 100 and follow the signs to the trip parking lot.



Terrace in the Sky

We anticipate returning at 7:30 p.m.

The weird and wonderful Addams family, created by New Yorker cartoonist Charles Addams, comes to life in a new Broadway musical starring Nathan Lane and Bebe Neuwirth. This magnificently macabre new musical was created by Jersey Boys authors Marshall Brickman and Rick Elice, with music by award-winning songwriter Andrew Lippa.

Storm clouds are gathering over the Addams Family manse. Daughter Wednesday, now 18, is experiencing a sensation that surprises and disgusts her—caring for another person. Young Pugsley, jealous of his sister's attention, begs her to keep torturing him, while mother Morticia, conflicted over her

daughter's lurch into womanhood, fears being upstaged and discarded! All the while, father Gomez—master of the revels, mischievous and oblivious as ever—would prefer everything and everyone to remain they are. But when outsiders come to dinner, the events of one night will change forever this famously macabre family—a family so different from your own...or maybe not!

Lunch before the show will be at Terrace in the Sky with a choice of menu. You may choose your entrée at the restaurant.

Costs: \$227 for Hagley members and guests. Full payment is due with each reservation no later than February 17, 2010. No refunds with any cancellations after February 17, 2010, unless replaced by another passenger. We suggest you make early reservations to avoid being disappointed.

Trip includes round-trip transportation from Hagley to New York; lunch at Terrace in the Sky; orchestra seats for *The Addams Family*; and taxes and gratuities for lunch and for the motor coach driver.

Greenbrier Christmas Extravaganza Tour

Space is still available on our December 8-11, 2009, Greenbrier Christmas Extravaganza tour. Contact the membership office at (302) 658-2400, ext. 235 or via email at kkelleher@hagley.org to reserve your space. \$100 deposit is due with each reservation.

TRIP RESERVATION FORM - BROADWAY TRIP ON APRIL 17, 2010

Name: _____

Guest(s) Name(s): _____

Address: _____

Telephone: _____

Please reserve _____ spaces for the Broadway Trip on April 17, 2010 (enclose \$227 per person).

Payment: Check (payable to Hagley) Visa MasterCard Discover American Express

Name on Card: _____

Number: _____ Expiration Date: _____

Signature: _____

Return this form to Hagley Membership Office, P.O. Box 3630, Wilmington, DE 19807-0630



Fireworks light up the night sky at Hagley along with the multicolored lights of viewers' glow toys.

Mark your calendars! Wilmington Trust will present Hagley's fireworks shows, "Lights, Camera, Action!" on June 11 and 18, 2010.



Creek Kids Start Year Three

Visitors enjoy a sample of homemade ice cream at one of Hagley's Creek Kids programs.

Hagley's Creek Kids is sponsored in part by Artisans' Bank; Capital Growth Management; Endo Pharmaceuticals, Inc.; and Valero Delaware City Refinery.

With the Natural World of the Brandywine event on August 16, the Creek Kids Youth Leadership Program finished its second year of providing fun, family programming at Hagley. Throughout the spring and summer, visitors had the opportunity to build boats, play nineteenth-century baseball, experience a ladies' tea, and watch live Irish dancing, as well as many other activities.

The Leadership Program experienced tremendous growth as the number of high school students participating in the program doubled. The Junior Creek Kids Program witnessed an increase in members as well.

Applications are currently being accepted for students interested in joining the 2009-2010 Creek Kids Youth

Leadership Program. This unique volunteer opportunity enables students to build teamwork and leadership skills, all while working in a fun museum setting. More information on both the leadership program and the Creek Kids' events can be found at www.hagley.org.

On April 23, Delaware recognized the Creek Kids of the 2007-2008 Youth Leadership Program during an awards ceremony in Dover. The group won a 2009 Governor's Youth Volunteer Service Award. These awards are given to youth volunteers who offer exemplary volunteer service while demonstrating high levels of commitment, leadership, and innovation. The 2007-2008 Creek Kids worked very hard and certainly deserved this great honor.

WHO'S ON THE DOLLAR?

During Thursdays in July and August, you can enjoy one dollar admission to Hagley. Members can always visit the museum for free.

Can you match the people with the correct denomination of dollar bill on which they appear?

- | | |
|-----------------------|---------------|
| A. Andrew Jackson | 1. \$1 bill |
| B. Ulysses S. Grant | 2. \$2 bill |
| C. Thomas Jefferson | 3. \$5 bill |
| D. Benjamin Franklin | 4. \$10 bill |
| E. Abraham Lincoln | 5. \$20 bill |
| F. Alexander Hamilton | 6. \$50 bill |
| G. George Washington | 7. \$100 bill |

Bonus question: Which person of the above list was NOT a president of the United States?

MATCHING PUZZLE

At the **Hagley Car Show** on September 20 you can browse through more than 500 antique and restored cars that date from the early 1900s to the 1980s. Can you help the Powder Keg Kid get to the car show?



HEY, KIDS!
Visit www.hagley.org/kids for Hagley's youth activities and a copy of this month's PKK page!

GEAR PUZZLE

At the **Golden Pheasants Harvest Party** on September 26 you can explore Hagley's interactive "Easy Does It!" exhibit, which features simple machines such as the lever, gear, pulley, and wheel and axle. Can you figure out which direction the red gear will turn when the blue gear is turned clockwise?



ANSWERS FOR DOLLAR: A-5, B-6, C-2, D-7, E-3, F-4, G-1 — BONUS: D
GEAR PUZZLE: THE RED GEAR WILL TURN COUNTERCLOCKWISE

For more information, visit www.hagley.org and click on "Calendar of Events" or call (302) 658-2400.



Hagley's Car Show is one of the largest in the Mid-Atlantic.

Help Hagley Save Paper and Postage

If you would like to receive event notices and membership renewals via e-mail, contact Kim Kelleher at kkelleher@hagley.org.

Your e-mail address will be for Hagley use only.

September 20 - Sunday - 10 a.m. to 4 p.m.
Hagley Car Show: Pre-1916 Rarities
Browse through more than 500 antique and restored cars that date from the early nineteen-hundreds to the nineteen-eighties. The show features vehicle parades, motoring music, video and go-kart racing, and a festival food court. Day of event tickets are \$10 for adults and \$5 for children 6-14.

New for 2009: Buy advance admission tickets to save time and money! Parking is on site, with a special express entrance for members and advance-ticketed guests. Advance tickets are \$8 for adults, \$4 for children 6-14. Visit www.hagley.org. Advance tickets are nonrefundable. Hagley members are admitted free and do not need to purchase advance tickets.

September 23 - Wednesday - 7 p.m.
Fall Lecture: David Pensak
David Pensak will present "Innovation - It's Not Just For Breakfast Anymore..." in the Copeland Room of Hagley Library. Pensak worked at DuPont Company for thirty years; founded Raptor Systems, the company that produced the commercially successful internet firewall; and founded the company Authentica, a pioneer in the field of digital rights management. He is currently on the faculty of the George Washington University School of Law and the University of Delaware. The lecture will be followed with a question and answer session as well as book sales and signing by the author. Lecture is free and open to the public. Use Hagley's Buck Road East entrance off Route 100 in Wilmington, Delaware.

September 26 - Saturday - 4 to 7 p.m.
Golden Pheasants Harvest Party
This Saturday afternoon event is perfect for the young and young-at-heart and their families. Event includes music by a local band, food catered by the Wilmington Club, games, and more. See page 6 for prices. Discounts for early ticket purchases, check www.hagley.org. Reservations required. Rain or Shine. Use Hagley's main entrance off Route 141 in Wilmington, Delaware.

October 1 - Thursday - 6 p.m.
Research Seminar
Jennifer Armiger, University of Delaware, will present her paper, "The Gender of Industrial Decline: Race, Gender, and Corporate Change at Western Electric in the 1970s," in the Copeland Room of Hagley Library. Free. Participants are asked to read the paper in advance; obtain a copy by contacting Carol Lockman, clockman@hagley.org.

October 17 and 18
Saturday and Sunday - 10 a.m. to 5 p.m.
Hagley Craft Fair
This artisans' marketplace brings talented artisans from the Mid-Atlantic area to display and sell fine arts and crafts. This premier show will feature works in wood, pottery, jewelry, fibers, metal, and other media. Admission is \$4; free for members and children under six years old. Use Hagley's Buck Road East entrance off Route 100 in Wilmington, Delaware.

October 21 - Wednesday - 7 p.m.
Fall Lecture: Norman W. Henry
Norman W. Henry will present "Radiation Awareness" in the Copeland Room of Hagley Library. He will explore radiation as source of energy in the future and its potential to be a solution for problems such as greenhouse gas emissions and global warming. Henry is a retired senior research chemist and certified industrial hygienist from DuPont. He currently works as a radiation control specialist for the State of Delaware. He served on the Radiation Authority for the State of Delaware for twenty-five years and was a Radiation Safety Officer for DuPont. The lecture is in partnership with the Delaware Academy of Chemical Sciences to bring science education to the public and will be followed with a question and answer session. Lecture is free and open to the public. Use Hagley's Buck Road East entrance off Route 100 in Wilmington, Delaware.

November 12 - Thursday - 6 p.m.
Research Seminar
Janneken Smucker, University of Delaware, will present her paper, "The Amish Brand: Cottage Industries Making and Selling Quilts," in the Copeland Room of Hagley Library. Free. Participants are asked to read the paper in advance; obtain a copy by contacting Carol Lockman, clockman@hagley.org.

November 27, 2009, through January 1, 2010
Christmas at Hagley
The 1803 du Pont ancestral home, Eleutherian Mills, is decorated primarily in Colonial Revival style for the holidays. Dried flowers, greenery, fruits, and other natural materials create a beautiful holiday ambiance accentuated by soft lights and Christmas music. Exhibit included in regular admission. Free for members. Use Hagley's main entrance off Route 141 in Wilmington, Delaware.

December 10 - Thursday - 6 p.m.
Research Seminar
Victoria Saker Woeste, American Bar Foundation, will present her paper, "Henry Ford: Unmasking the Self-Made Myth," in the Copeland Room of Hagley Library. Free. Participants are asked to read the paper in advance; obtain a copy by contacting Carol Lockman, clockman@hagley.org.



Smart Looks and Great Reading

1) Patent Model Tie

This beautiful tie is covered with dozens of small patent model illustrations, just like those in Hagley's current exhibit in the Visitor Center, "Innovation in Miniature: Nineteenth-Century Patent Models."

From 1790 to 1880, the United States Patent Office required a small model, descriptive drawing, and written specifications for the patent application package.

This 100 percent silk tie will make a fine addition to any wardrobe.

Item #21007 - \$28.95

2) Solar Wind and Power - Smart Ways to Power the World

This book, written by Peter Lerangis, explores the possibilities of these two renewable energy forms. It includes everything you need to build a solar-powered model car.

Item #6993 - \$17.99

3) Falling Cloudberry - A World of Family Recipes

This Gourmet Cook Book Club Selection, written by Tessa Kiros, is a global journey of taste and experience and an eclectic compilation of 170 simple and delicious recipes reflecting the author's world travels, multicultural heritage, family traditions, and amazing cooking combinations.

Item #6438 - \$29.99



Hagley Store Information

Visit the Hagley Store online at www.hagley.org.

Hagley members receive a 10 percent discount at the Hagley Store and the Belin House Restaurant.

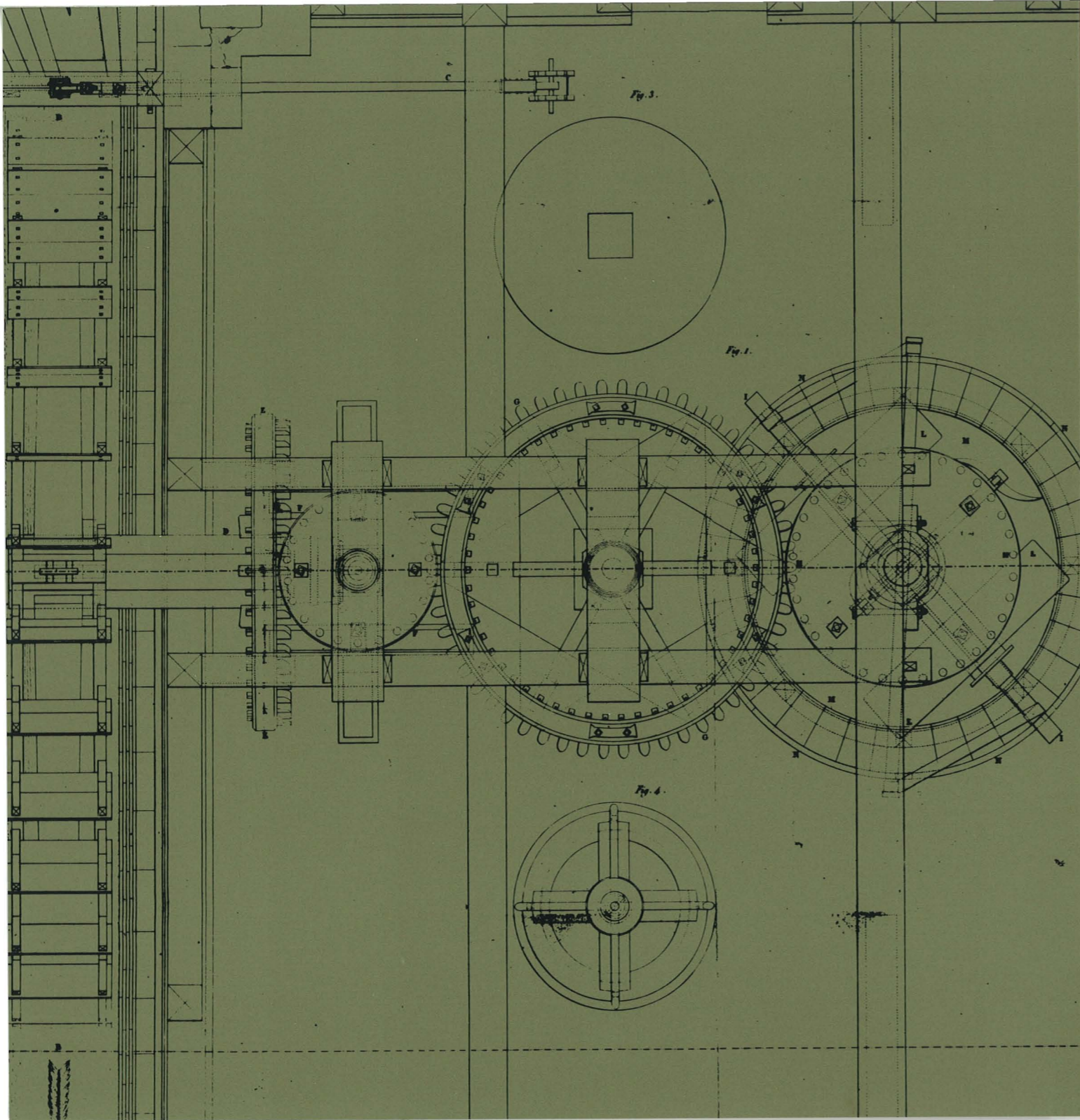
Regular Hours - March 14, 2009, to January 3, 2010
Open daily from 9:30 a.m. to 5 p.m.

(302) 658-2400, ext. 274

HAGLEY MUSEUM AND LIBRARY
P.O. BOX 3630
WILMINGTON, DE 19807
302 658 2400



Impressions of Hagley



THE ORIGINAL
DU PONT MILLS, ESTATE,
AND GARDENS

WILMINGTON, DELAWARE

PORTRAIT OF SOPHIE
MADELEINE DU PONT ON
PAGE 14 COURTESY
OF MR. AND MRS. HENRY
E. I. DU PONT

DESIGN
MICHAEL GUNSELMAN

PHOTOGRAPHY
MARTIN KANE
CHARLES FOOTE

PRINTING
STRINE PRINTING COMPANY

TYPOGRAPHY
PHP TYPOGRAPHY

EDITOR
JILL MACKENZIE

Hagley Museum

COPYRIGHT 1991
BY THE HAGLEY MUSEUM
AND LIBRARY

ISBN 0-914650-28-9



Henry Clay Mill

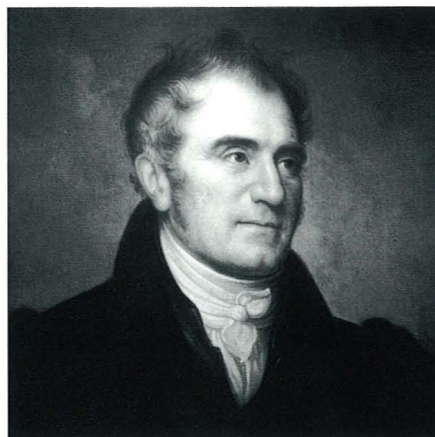
IN 1802 A YOUNG FRENCH IMMIGRANT, ELEUTHÈRE IRÉNÉE DU PONT, FOUND THE BRANDYWINE RIVER TO BE THE PERFECT SPOT ON WHICH TO BUILD HIS BLACK POWDER MILLS. THE NATURAL ENERGY OF THE WATER AS WELL AS AVAILABLE TIMBER AND QUARRIES OF BRANDYWINE GRANITE HELPED CONVINCE DU PONT TO LOCATE HIS ENTERPRISE, HOME, AND GARDEN IN WILMINGTON, DELAWARE. FOR THE NEXT 120 YEARS THE BRANDYWINE WAS THE HEART OF THE E. I. DU PONT DE NEMOURS & COMPANY'S BLACK POWDER WORKS.

ON THE OCCASION OF THE DU PONT COMPANY'S 150TH ANNIVERSARY IN 1952 PLANS FOR A MUSEUM WERE ESTABLISHED. FIVE YEARS LATER HAGLEY MUSEUM OPENED ITS DOORS, WELCOMING VISITORS FROM AROUND THE WORLD. TO THIS DAY THE RIVER AND MILLS REMAIN AN IMPORTANT CHAPTER IN AMERICAN HISTORY.

ENCOMPASSING THE ORIGINAL DU PONT MILLS, ESTATE, AND GARDENS, HAGLEY PROVIDES A UNIQUE GLIMPSE INTO NINETEENTH-CENTURY AMERICAN LIFE AT HOME AND AT WORK. A NATIONAL



*Eleuthère
Irénée du Pont
(1771-1834)*



HISTORIC LANDMARK AND NATIONAL RECREATION TRAIL, THE MUSEUM IS ONE OF THE TREASURES IN THE BRANDYWINE VALLEY WHICH IS ALSO HOME TO THE NATIONALLY-RECOGNIZED LONGWOOD GARDENS AND WINTERTHUR MUSEUM. SET AMID MORE THAN 230 ACRES OF TREES AND FLOWERING SHRUBS, HAGLEY OFFERS A DIVERSITY OF DEMONSTRATIONS, RESTORATIONS, AND EXHIBITS THAT ARE FASCINATING IN EVERY SEASON. FROM THE DRAMATIC WINTER LANDSCAPE TO THE BURSTS OF SPRING COLOR TO THE WATERCOLOR PANORAMA OF FALL FOLIAGE, HAGLEY PROVIDES A RICH PALETTE OF IMAGES.

ON ENTERING THE MUSEUM, VISITORS PASS THROUGH THE IRON GATES THAT COMMEMORATE THE COMPANY'S CENTENNIAL IN 1902 AND BEGIN A VISIT TO HAGLEY IN THE HENRY CLAY MILL. CONSTRUCTED IN 1814 AS A COTTON SPINNING VENTURE, THE FORMER MILL NOW PROVIDES VISITOR RECEPTION AND AN INTRODUCTION TO THE HISTORY OF THE SITE THROUGH VIDEO, EXHIBITS, MODELS, AND DIORAMAS.

EXHIBITS ON THE FIRST FLOOR TELL THE STORY OF THE EIGHTEENTH- AND EARLY NINETEENTH-CENTURY HARNESING OF THE BRANDYWINE, A SUBSTANTIAL POWER SOURCE IN THE ERA WHEN INDUSTRY RELIED ON WATERPOWER. ON THIS RIVER A SERIES OF ENTREPRENEURS BUILT MILLS TO PRODUCE A VARIETY OF CONSUMER GOODS FROM FLOUR, COTTON, AND PAPER TO LINSEED OIL, WOOL, AND GUNPOWDER.

RIISING IN THE WELSH MOUNTAINS OF PENNSYLVANIA, THE TWO STREAMS THAT MAKE UP THE BRANDYWINE FLOW THROUGH RICH FARMLAND BEFORE CONVERGING NEAR LENAPE, PENNSYLVANIA TO FORM A MORE POWERFUL STREAM. AS THE RIVER SURGES THROUGH DELAWARE'S HILLS IT GAINS MOMENTUM, ITS DAILY VOLUME OF 600,000 TONS OF WATER DROPPING 124 FEET IN THE LAST FIVE MILES. THIS POWER OF FALLING WATER WAS THE POWER TO DO WORK, TO PRODUCE GOODS, AND TO MAKE TECHNOLOGICAL ADVANCE POSSIBLE.

THE PRODUCTION OF GUNPOWDER WAS AN IMPORTANT CHAPTER IN THE STORY OF THE GROWTH OF AMERICAN INDUS-



*Meadowbrook
Rifle & Drum Corps,
ca. 1907*

TRY. ONE OF THE LARGEST MANUFACTURERS OF POWDER WAS E. I. DU PONT. DU PONT, HIS BROTHER VICTOR, AND THEIR FAMILIES HAD COME TO AMERICA IN 1800 WITH THEIR FATHER PIERRE SAMUEL DU PONT DE NEMOURS, A WELL-KNOWN FRENCH GOVERNMENT OFFICIAL AND ECONOMIST.

THE FAMILY HAD PLANNED TO ESTABLISH A RURAL COMMUNITY IN AMERICA BASED ON THE FATHER'S PHYSIOCRATIC PRINCIPLES OF THE SUPREMACY OF LAND OWNERSHIP AND AGRICULTURE, BUT WHEN IT BECAME APPARENT THAT THIS PLAN COULD NOT BE REALIZED, OTHER MEANS OF EARNING A LIVELIHOOD WERE EXPLORED. IT WAS DECIDED THAT IRÉNÉE, WHO HAD WORKED IN THE FRENCH GOVERNMENT'S BLACK POWDER MANUFACTORY UNDER THE SUPERVISION OF THE FAMOUS CHEMIST ANTOINE LAVOISIER, SHOULD OPEN SUCH A FACTORY IN AMERICA.

IN THE EARLY NINETEENTH CENTURY E. I. DU PONT BEGAN CONSTRUCTION OF HIS MILLS, SOON PRODUCING A PRODUCT OF SUPERIOR QUALITY THAT HELPED SHAPE THE COURSE OF AMERICA'S WESTWARD EXPANSION AND THE



FUTURE OF THE NATION. BUT THE MILLS WERE NOT IRÉNÉE DU PONT'S ONLY CONCERN. IN PREPARING THE PLANS FOR HIS POWDER MANUFACTORY, HE SPECIFIED THAT HIS HOUSE SHOULD BE SITUATED ON THE BANKS OF THE RIVER, CLOSE TO THE OPERATION.



IN THE SUMMER OF 1803 THE FAMILY MOVED INTO WHAT IS NOW THE DU PONT ANCESTRAL HOME. DU PONT'S NATURAL LOVE OF BOTANY ALSO LED HIM TO BEGIN HIS GARDEN AS SOON AS THE FIRST BLOCKS OF GRANITE WERE BEING LAID IN HIS MILLS.

TODAY VISITORS TO HAGLEY TAKE A SCENIC RIDE ALONG THE RIVER TO TOUR DU PONT'S ESTATE AND GARDEN, SEEING THE GEORGIAN-STYLE MANSION, THE FIRST OFFICE OF THE DU PONT COMPANY, A BARN FILLED WITH ANTIQUE VEHICLES (INCLUDING A CONESTOGA WAGON), A SMALL WORKSHOP-LABORATORY, AND HIS RESTORED FRENCH GARDEN.

TODAY VISITORS CAN LEARN ABOUT THE INTRICACIES OF MAKING GUNPOWDER BY FOLLOWING A POWDERMAN AS HE MAKES THE ROUNDS IN THE POWDER YARD. TO GIVE A SENSE OF THE MEN,

*Early nineteenth-century
Conestoga Wagon*



WOMEN, AND CHILDREN WHO LIVED ALONG THE BRANDYWINE, BLACKSMITH HILL OFFERS VISITORS A CHANCE TO WRITE WITH A QUILL PEN IN THE SUNDAY SCHOOL OR SIP TEA IN THE KITCHEN OF THE POWDER YARD FOREMAN'S HOME. AFTERWARD THERE IS TIME TO RELAX OVER REFRESHMENTS IN THE BELIN HOUSE COFFEE SHOP.

HAGLEY TODAY IS MANY THINGS TO MANY PEOPLE. THROUGH A VARIETY OF SPECIAL EVENTS SUCH AS THE IRISH WORKERS' FESTIVAL IN THE SPRING, FAMILY DAY, TEXTILE TRADITION: A CRAFT FAIR, AND THE FESTIVAL OF MUSEUM SHOPPING IN THE FALL, PLUS A CHRISTMAS DISPLAY IN DECEMBER, VISITORS CAN EXPERIENCE A TASTE OF OUR RICH HISTORICAL LEGACY.

MEMBERSHIP IS OFFERED IN THE HAGLEY ASSOCIATES FOR YEAR-ROUND GENERAL MUSEUM ADMISSION. OTHER BENEFITS INCLUDE DISCOUNTS IN THE HAGLEY STORE AND THE OPPORTUNITY TO PURCHASE TICKETS TO HAGLEY'S FIREWORKS EXTRAVAGANZA, A MEMBERS-ONLY EVENT.







Eleutherian Mills

HIGH ON THE BANKS OF THE BRANDY-WINE RIVER OVERLOOKING THE ORIGINAL POWDER MILLS, E. I. DU PONT BUILT HIS GEORGIAN-STYLE MANSION. FOR ALMOST A CENTURY THE RESIDENCE SERVED AS THE CENTER OF THE FAMILY BUSINESS OPERATIONS AND SOCIAL LIFE. MEMBERS OF THE FAMILY OCCUPIED THE HOUSE FROM ITS COMPLETION IN THE SUMMER OF 1803 UNTIL A PARTICULARLY SEVERE POWDER YARD BLAST IN 1890 DAMAGED THE STRUCTURE, FORCING THE FAMILY TO LEAVE. IT REMAINED EMPTY UNTIL 1893 WHEN IT WAS CONVERTED TO A CLUBHOUSE FOR COMPANY WORKERS AND LATER TO A HOME FOR THE HEAD OF THE DU PONT COMPANY'S FARM.

IN 1921 THE MILLS ALONG THE BRANDY-WINE CLOSED AND PARCELS OF PROPERTY WERE SOLD. HENRY ALGERNON DU PONT, A GRANDSON OF THE ORIGINAL OWNER, PURCHASED THE HOUSE IN 1923 FOR HIS DAUGHTER, MRS. LOUISE EVELINA DU PONT CROWNINSHIELD. EXTENSIVE RENOVATIONS TRANSFORMED THE RESIDENCE, WITH PORTIONS OF IT SUGGESTING THE EARLIEST PERIOD OF DU PONT OCCUPANCY.



*Eleutherian Mills
during years as
Brandywine Clubhouse,
ca. 1894*



THE FIRST FLOOR REMAINS MUCH AS MRS. CROWNINSHIELD LEFT IT. THE SECOND FLOOR IS A SERIES OF PERIOD ROOMS—FEDERAL, EMPIRE, AND VICTORIAN—REFLECTING THE TASTES OF SEVERAL GENERATIONS OF THE DU PONT FAMILY. THE SPACIOUS CENTER HALL LEADS FROM THE FRONT ENTRANCE TO DOUBLE GLASS DOORS OPENING ONTO THE PIAZZA, WHICH AFFORDS AN EXPANSIVE VIEW OF THE BRANDY-WINE RIVER VALLEY.

ON THE FIRST FLOOR THE TOUR INCLUDES A MORNING ROOM FURNISHED WITH EARLY COUNTRY ANTIQUES REFLECTING THE QUEEN ANNE AND CHIP-PENDALE STYLES. THE DINING ROOM OCCUPIES THE NORTH WING AND IS PAPERED WITH A FRENCH BLOCK-PRINTED WALLPAPER ENTITLED "SCENIC AMERICA" THAT DEPICTS A VARIETY OF POINTS OF INTEREST. DURING THE CHRISTMAS SEASON THE TABLE IS SET FOR A TWELFTH NIGHT CELEBRATION HIGHLIGHTING A LOVELY PLUM-COLORED-BAND FRENCH PORCELAIN DES-SERT SERVICE. IN THE PARLOR A

NINETEENTH-CENTURY PIANOFORTE IS REMINISCENT OF THE FAMILY'S INTEREST IN MUSIC.

ON THE SECOND FLOOR ARE A SERIES OF ROOMS THAT RECALL SEVERAL GENERATIONS OF THE DU PONT FAMILY. THE DAUGHTERS' ROOM IS FURNISHED WITH MAPLE ANTIQUES FROM THE EMPIRE PERIOD AND HIGHLIGHTS SOPHIE MADELEINE DU PONT'S LOVE OF PAINTING AND SKETCHING.

IN THE BLUE ROOM IS A COMBINATION OF FURNITURE OWNED BY E. I. DU PONT, OR KNOWN TO HAVE BEEN USED IN THE RESIDENCE, AS WELL AS ANTIQUES APPROPRIATE TO THE PERIOD 1800-1830. AMONG THE PIECES THAT HAVE A HISTORY OF OWNERSHIP AT ELEUTHERIAN MILLS ARE THE PHILADELPHIA DESK, A BLACK WINDSOR CHAIR, A SMALL RUSH-BOTTOM ROCKER, AND A MAHOGANY SLEIGH BED.

THE NURSERY WITH ITS COLLECTION OF NINETEENTH-CENTURY TOYS, A NOAH'S ARK, AND A ROCKING ROOSTER, LEADS TO THE BEDROOM OF E. I. DU PONT AND HIS WIFE, SOPHIE. THE MAHOGANY BED ATTRIBUTED TO PHILADELPHIA CABINET-



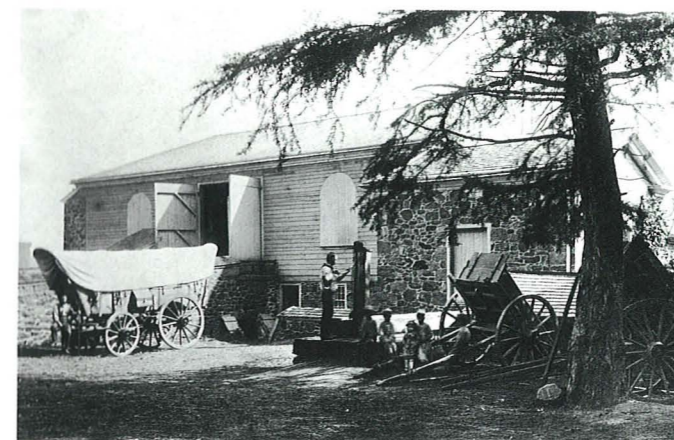
*Eleutherian Mills
barn*

MAKER JOSEPH BARRY IS BELIEVED TO BE ONE THAT IRÉNÉE PURCHASED BETWEEN 1807-1810. A MAHOGANY CRIB ONCE OWNED BY THE DU PONT FAMILY IS SITUATED NEXT TO THE BED AND FEATURES A TAMBOUR-WORKED MUSLIN BED CURTAIN, BABY CLOTHES, AND AN ORIENTAL IVORY RATTLE.

ONE OF THE PERIOD ROOMS AT ELEUTHERIAN MILLS IS THE LIBRARY. ARRANGED ACCORDING TO THE DICTATES OF THE TASTE OF THE VICTORIAN ERA, THE LIBRARY HAS AN ORIENTAL FLAVOR, FURNISHED WITH ANTIQUES THAT ADMIRAL SAMUEL FRANCIS DU PONT ACQUIRED AS THE RESULT OF HIS NAVAL VOYAGES TO THE ORIENT IN 1857-1859.

AT NO TIME DID THE RESIDENCE STAND AS AN ISOLATED STRUCTURE BUT RATHER WAS THE CENTER OF A COMPLEX OF BUILDINGS TODAY KNOWN AS THE UPPER PROPERTY.

THE FIRST OFFICE OF THE DU PONT COMPANY WAS CONSTRUCTED IN 1837 AFTER THE QUARTERS THAT HAD BEEN IN THE RESIDENCE BECAME CRAMPED.



IT SERVED AS THE COMPANY'S MAIN OFFICE FOR MORE THAN HALF A CENTURY. RESTORED TO THE PERIOD AROUND 1850, DURING HENRY DU PONT'S PRESIDENCY, THE OFFICE CONTAINS SEVERAL OF HENRY'S POSSESSIONS INCLUDING HIS DESK.

WALKING FROM THE FIRST OFFICE TO THE RESIDENCE LENDS A VIEW OF THE E. I. DU PONT RESTORED GARDEN. ENCOMPASSING TWO ACRES, THE GARDEN IS FILLED WITH VEGETABLES, HERBS, PERENNIALS, BULBS, FRUIT TREES, AND FLOWERING SHRUBS. THE FRENCH CHARACTER OF THE GARDEN IS ILLUSTRATED BY THE USE OF SECTIONS, OR PARTERRES. THESE QUADRANTS ARE BORDERED BY ESPALIERED FRUIT TREES. A GAZEBO BUILT IN 1817 HAS BEEN RECONSTRUCTED IN THE SOUTHWEST CORNER OF THE GARDEN.

THE GARDEN HAS BEEN RESTORED ON ITS ORIGINAL SITE TO THE PERIOD OF ITS CULTIVATION BY E. I. DU PONT, 1803-1834. AN EXPERIENCED GARDENER FROM HIS YOUTH, DU PONT SET ABOUT PROVIDING HIS FAMILY WITH FRESH FRUITS AND VEGETABLES IN THE ISOLATION OF THEIR BRANDYWINE HOME.

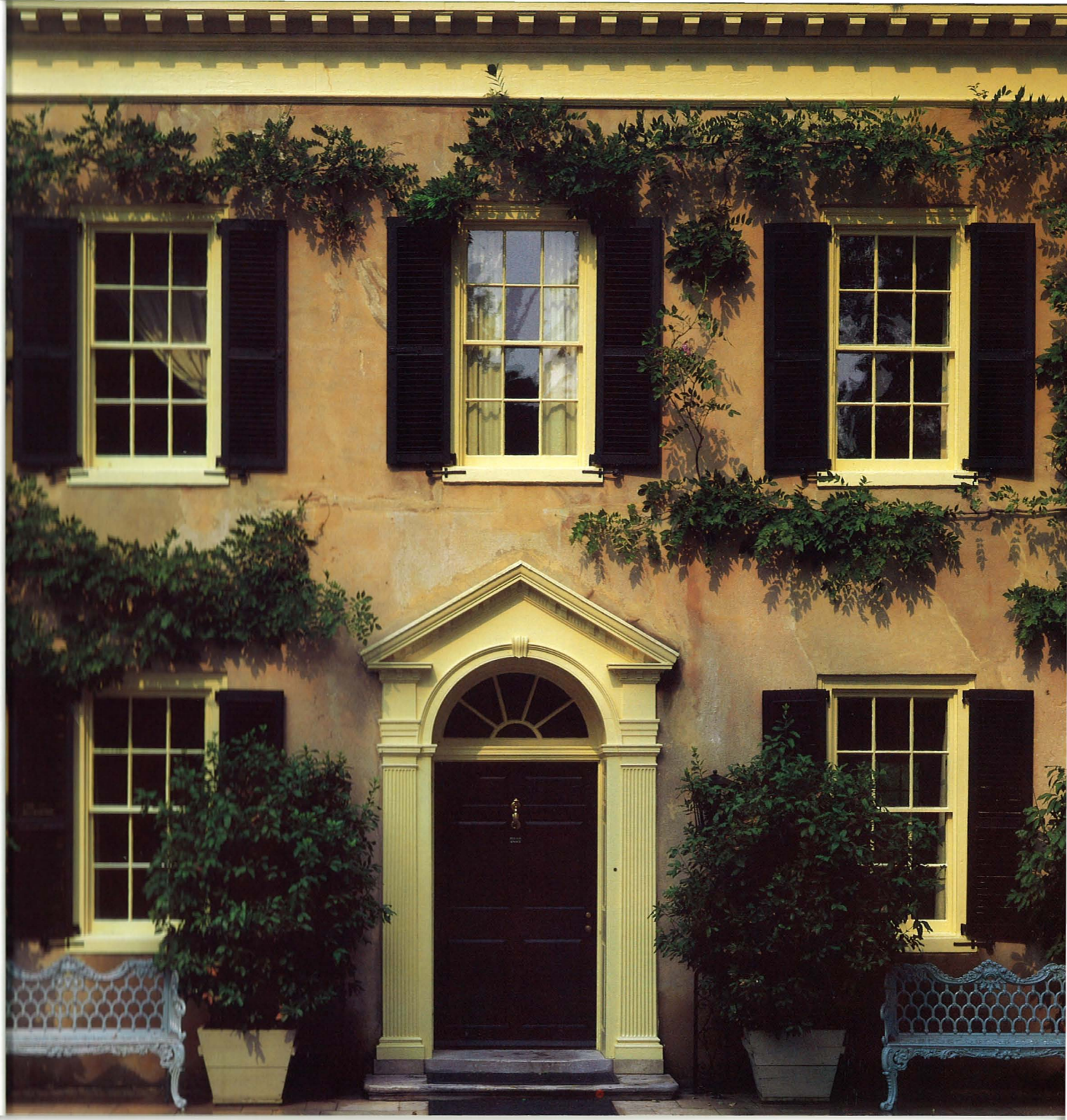
*Sophie
Madeleine du Pont,
oil painting by
Rembrandt Peale,
1831*



HE PLANTED HIS GARDEN WITH FRUIT TREES, NUTS, BERRIES, ROSES, AND WITH SEEDS—OF VEGETABLES, FLOWERS, AND HERBS—SHIPPED TO HIM FROM FRANCE. TO THOSE HE SOON ADDED INDIGENOUS AMERICAN PLANTS AND NATURALIZED WILDFLOWERS FROM NEARBY WOODS. HE ALSO EXCHANGED PLANTS WITH OTHER GARDEN ENTHUSIASTS.

FARMING WAS AN IMPORTANT SUPPLEMENT TO THE POWDER-MAKING OPERATIONS AND THE STONE BARN BECAME A CENTER FOR MUCH OF THIS AGRICULTURAL VENTURE. TODAY THE BARN FEATURES A COLLECTION OF NINETEENTH CENTURY DOMESTIC, FARM, AND POWDER YARD VEHICLES, A COLLECTION OF WEATHER VANES, AGRICULTURAL TOOLS AND IMPLEMENTS, AS WELL AS A CONESTOGA WAGON.

ON THE LOWER LEVEL OF THE BARN AN ANTIQUE AUTOMOBILE EXHIBIT HIGHLIGHTS THE DU PONT MOTORS CAR MANUFACTORY, FEATURING A 1928 DU PONT MOTORS PHAETON AND CONTRASTING IT TO A 1911 DETROIT ELECTRIC CAR THAT ALSO BELONGED TO A FAMILY MEMBER.





As soon as E. J. du Pont acquired land along the Brandywine River, he set about planting a garden and orchard to complement his home. Archaeological work provided the basis for the garden's restoration and it now appears much as it did during Trénée's lifetime.





Eleutherian Mills, the first du Pont family home built in America, has a unique character. Visitors often mention the home's charm and warmth as evidenced by the handsome floral arrangements throughout and by the fine collections of porcelain, furniture, and hooked rugs.



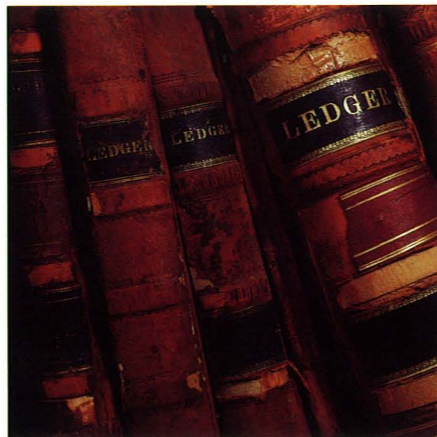


The ruins of the earliest powder mills are still visible. Set into the steep bank of the river below the house, brick-arched tunnels once led to the subterranean furnace of the old refinery. These vestiges from an earlier time have been transformed with flowering trees, rhododendrons, and azaleas.



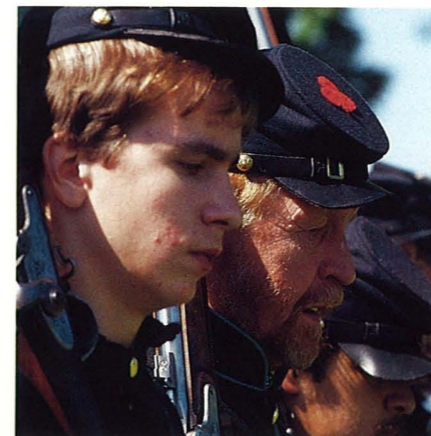


The First Office of the Du Pont Company, constructed in 1837, remained the nerve center for the Company for more than fifty years. An early typewriter, ledgers, and telegraph key reflect the business activities that were once housed in this building.





In the area surrounding the old stone barn several of Hagley's special events take place. On a brisk day in autumn, families are welcomed to watch as a Civil War reenactment group pitches tents, musters for drills, and plays nineteenth-century baseball.





Powder Yard

IN 1811 THOMAS JEFFERSON WROTE TO E. I. DU PONT FROM MONTICELLO AND PRAISED THE SUPERIOR QUALITY OF HIS BLACK POWDER. THIS COMMITMENT TO QUALITY ENSURED THE SUCCESS OF THE BUSINESS AND EVENTUALLY MADE THE DU PONT COMPANY THE NATION'S LARGEST MANUFACTURER OF BLACK POWDER.



THE FIRST POWDER WAS SOLD IN 1804 AND EXPANSION FOLLOWED DUE TO INCREASED DEMAND. IN 1813 DU PONT PURCHASED A NEIGHBORING TRACT OF LAND KNOWN AS HAGLEY AND BUILT A SECOND POWDER YARD. BY 1840 A THIRD YARD WAS IN OPERATION FARTHER DOWN THE RIVER.

THE ENERGY THAT COULD BE HARNESSSED FROM THE FALLING BRANDYWINE WAS THE MOST IMPORTANT FEATURE OF THIS PROPERTY FOR BUILDING AN INDUSTRY DEPENDENT ON WATERPOWER. THE SITE ALSO HAD OTHER SIGNIFICANT ATTRACTIONS. THE DEPOSITS OF GRANITE PROVIDED MATERIALS FOR CONSTRUCTING THE STONE MILLS WITH MASSIVE WALLS DESIGNED TO DIRECT THE FORCE OF OCCASIONAL, ACCIDENTAL EXPLOSIONS. WILLOW

Transporting powder in Hagley Yard



TREES, USED TO PRODUCE THE QUALITY CHARCOAL NECESSARY FOR SUPERIOR BLACK POWDER, WERE GROWN THROUGHOUT THE YARD DURING THE YEARS OF OPERATION. THE MUSEUM USES THE HAGLEY YARD TO ILLUSTRATE THE POWDER-MAKING PROCESS THROUGH WORKING MODELS AND DAILY DEMONSTRATIONS OF FULL-SIZE MACHINERY.

VISITORS CAN FOLLOW THE POWDER-MAN ON HIS ROUNDS STARTING AT THE EAGLE ROLL MILL WHERE THE THREE INGREDIENTS OF BLACK POWDER—SULPHUR, SALTPETER, AND CHARCOAL—WERE MIXED UNDER THE WEIGHT OF TWO EIGHT-TON WHEELS FOR SEVERAL HOURS. TODAY'S WHEELS TURN WHEN WATER RUSHES DOWN THE BLACK PIPE AND HITS THE VANES OF THE WATER TURBINE. ONCE THE POWDER WAS MANUFACTURED, TESTING IT WAS AN IMPORTANT METHOD OF QUALITY CONTROL. IN ANOTHER MUSEUM DEMONSTRATION A POWDER TESTER IS FIRED TO SHOW HOW THE QUALITY OF A FINISHED BATCH WAS MEASURED.

ONCE FINISHED, THE POWDER WAS PACKAGED IN PAPER WRAPPERS, METAL CANNISTERS, AND KEGS OF WOOD AND IRON. AFTER PACKAGING, THE POWDER WAS SHIPPED BY CONESTOGA WAGON AND BY OCEAN-GOING VESSELS TO DISTANT PORTS. FOLLOWING THE CIVIL WAR, RAILROADS REPLACED THE WAGON AS THE MAJOR MEANS OF TRANSPORT.

CENTRAL TO A SUCCESSFUL OPERATION WAS THE ABILITY TO DO PROMPT REPAIRS TO MACHINES. A MACHINE SHOP LOCATED IN THE YARD REPAIRED THE POWDER-MAKING MACHINERY. METAL-WORKING MACHINERY IS DEMONSTRATED IN THE ORIGINAL BUILDING, NOW RESTORED TO REFLECT THE SHOP AS IT APPEARED IN THE 1870s. A SYSTEM OF LEATHER BELTS AND PULLEYS DIRECTS POWER TO THE MANY LATHES AND DRILLS.

OPPOSITE THE MILLWRIGHT SHOP, WHICH HOUSES THE MACHINE SHOP, IS A STONE QUARRY WHERE THE EQUIPMENT FOR LIFTING, DRILLING, AND CUTTING IS ON EXHIBIT. THE HILLS SURROUNDING THE BRANDYWINE RIVER ARE RICH WITH GRANITE DEPOSITS AND THE STONE QUARRY WAS ONE



Labor gang, Hagley Yard



OF SEVERAL ON THE PROPERTY FROM WHICH BUILDING STONE WAS TAKEN FOR INDUSTRIAL AND DOMESTIC STRUCTURES.

FARTHER UPSTREAM A GRAINING MILL HOUSES THE HUGE MACHINERY USED TO SIFT AND SORT GRAINS OF POWDER BY SIZE. OUTSIDE THE BUILDING ARE THE TRACKS OF A NARROW GAUGE RAILROAD THAT CONNECTED THE MANY MILL BUILDINGS. THE RAILROAD TRESTLE ON THE WATER-SIDE OF THE GRAINING MILL AFFORDS A DRAMATIC VIEW OF THE BRANDYWINE RIVER.

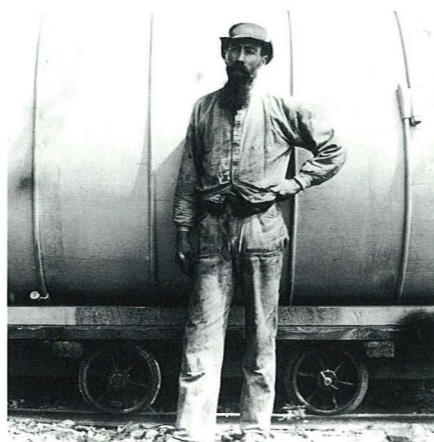
SAFETY WAS A MAJOR CONCERN TO THE OPERATORS OF THE POWDER YARD. AS THE NARROW GAUGE RAILROAD CAME CLOSE TO MILL BUILDINGS, THE TRACK CHANGED FROM IRON TO WOOD SO THAT THE CARS' WHEELS WOULD NOT CAUSE SPARKS AS THEY ROLLED OVER IT. WOODEN SHOVELS, DISPLAYED IN THE EAGLE ROLL MILL, WERE USED FOR HANDLING BLACK POWDER.

FLOWING THROUGH THE POWDER YARD, THE MILLRACES WERE CRITICAL TO THE

POWDER-MAKING OPERATION. THE MILLRACE RAISES THE WATER LEVEL ABOVE THE MAIN BODY OF THE RIVER, ALLOWING IT TO BE DROPPED THROUGH PIPES TO POWER THE MILLS VIA WATERWHEELS OR TURBINES. ONE OF THE MOST SCENIC AREAS OF THE PROPERTY IS THE VIEW ALONG THE MILLRACE UP TO THE BIRKENHEAD MILLS. THESE MILLS, BUILT IN 1822-1824, ARE THE OLDEST ROLL MILLS IN THE HAGLEY YARD AND TODAY FEATURE AN OPERATING SIXTEEN-FOOT WOODEN BREAST WHEEL.

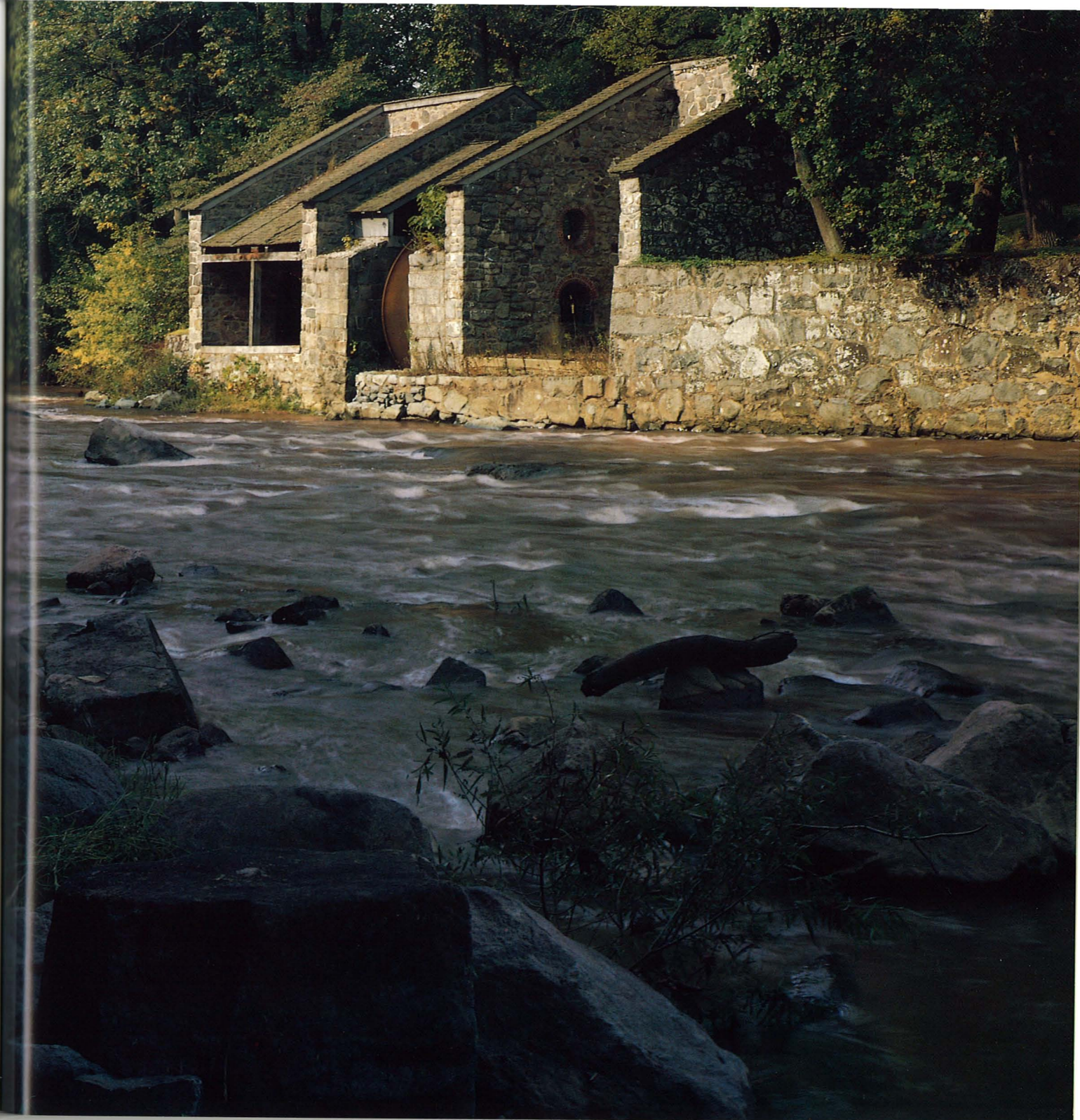
AT THE FARTHEST END OF THE YARD, IN THE ENGINE HOUSE, AN 1870S ENGINE OPERATES UNDER LIVE STEAM. IN PERIODS OF DROUGHT, FLOOD, OR DURING A FREEZE, THE AUXILIARY POWER OF STEAM ENGINES KEPT MACHINERY OPERATING. THE ENGINE HOUSE HAS BEEN RESTORED AND SUPPLIED WITH A HORIZONTAL SLIDE-VALVE, BOX-BED STEAM ENGINE OF MID-NINETEENTH CENTURY VINTAGE PIPED TO A COAL-FIRED LOCOMOTIVE TYPE BOILER. POWER IS TRANSMITTED FROM THE ENGINE'S FLYWHEEL BY BELT TO A COUNTER SHAFT AND THEN LINE SHAFT WHICH ORIGINALLY POWERED A PACK HOUSE THAT WAS LOCATED 100 FEET TO THE REAR.

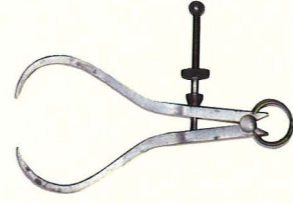
*Glazing barrel
with
Moses Campbell*



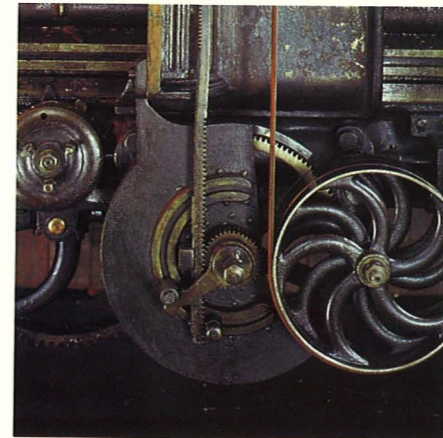
THE BUILDINGS REMAINING AT HAGLEY ARE SUGGESTIVE OF THE MANY MORE WHICH COVERED THE RIVER'S BANK AND THE HILLSIDES A CENTURY AGO. AN INTRICATE SYSTEM OF LINE SHAFTS, WIRE ROPES, AND PULLEYS TRANSMITTED POWER FROM THE WATERWHEELS AND TURBINES AT THE WATER'S EDGE TO MORE DISTANT LOCATIONS. A CENTRAL STEAM PLANT WAS CONSTRUCTED IN 1883 TO PROVIDE HEAT AND POWER FOR A NUMBER OF THE POWDER-MILL OPERATIONS. THIS STRUCTURE HOUSED A LARGE CORLISS STEAM ENGINE AND THREE COAL-FIRED BOILERS. THE EXTERIOR OF THIS BUILDING HAS BEEN PARTIALLY RESTORED.

TODAY VISITORS TO HAGLEY CAN ENJOY WALKING THROUGH THE POWDER YARD, CHOOSING THE ROADWAY, A RIVER PATH, OR A WOODED HILLSIDE ROUTE. IN EVERY SEASON HAGLEY OFFERS NATURE'S BEST. FLOWERING DOGWOODS AND VIBRANT AZALEAS DOT THE MILLRACE IN THE SPRING, PROVIDING A SCENIC BACKDROP. AUTUMN LEAVES THEN BLANKET THE YARD, GIVING WAY TO THE DRAMATIC WINTER LANDSCAPE.





In the din of the working Machine Shop, volunteer machinists explain how the series of leather belts and pulleys power the many lathes and drills. Precision work to help repair Hagley's machinery is still done from time to time in the shop.



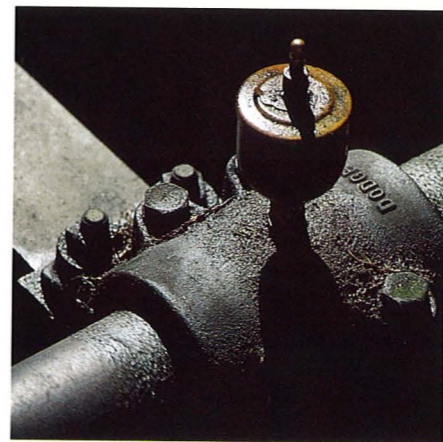


Demonstrations in the powder yard illustrate several steps in the production of black powder. From the massive roll wheels that mixed the ingredients to the final explosion when the powder is tested, nineteenth-century technology continues to fascinate visitors to the museum.



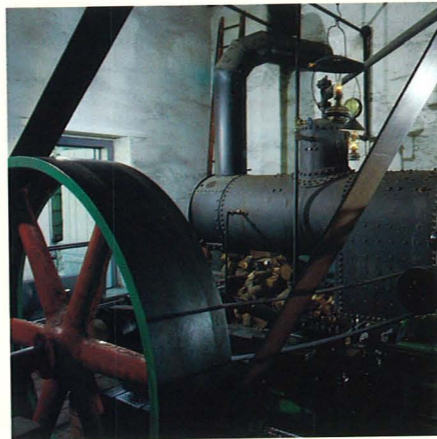


The millrace, which played a vital part in channeling energy to the mills, is often a photographer's delight. Canada geese, wood ducks, blue herons, and other water birds make their homes here. In the spring and summer, wildflowers are abundant.





*The haunting whistle from the Engine House signals that the coal-fired boiler is in operation.
The colorful red and green wheel turns under steam power providing visitors with another opportunity to see what kept the mills in production.*





Blacksmith Hill

A SYSTEM OF FENCING AND GATES SEPARATED THE MILLS FROM AREAS OF WORKERS' HOUSING. ACCESS TO THE ONE REMAINING COMMUNITY ON THE MUSEUM GROUNDS IS THROUGH THE IRON GATES ON BLACKSMITH HILL.

BUILT INTO THE BANK OF THE HILLSIDE IS THE GIBBONS HOUSE, HOME TO POWDER YARD FOREMAN JOHN GIBBONS FROM THE LATE 1850S TO THE 1880S. IT HAS BEEN RESTORED AND FURNISHED TO ILLUSTRATE THE LIVES OF THE WORKERS AND THEIR FAMILIES. VARIOUS ETHNIC GROUPS COMPRISED THE WORK FORCE. THROUGHOUT MOST OF THE NINETEENTH CENTURY, THE IRISH PREDOMINATED. EVERY SPRING A CELEBRATION OF SONG AND DANCE IS HELD DURING HAGLEY'S IRISH WORKERS' FESTIVAL TO RECOGNIZE THE ROLE OF THE WORKERS AND THEIR FAMILIES IN THIS INDUSTRIAL VILLAGE.

IN THE NINETEENTH CENTURY THERE WERE MANY HOMES SCATTERED ABOUT THE HILLSIDE. SOME WORKERS PAID MONTHLY RENT AND RECEIVED FREE MAINTENANCE WHILE OTHERS LIVED RENT FREE. THESE BUSY COMMUNITIES WERE THE CENTER OF HOME AND SOCIAL LIFE.



*Gaine
family, Squirrel Run,
1890*

TODAY A RECREATED WORKERS' GARDEN IS FILLED SUMMER AND FALL WITH VEGETABLES AND ROOT CROPS THAT HELPED PROVIDE SUSTENANCE THROUGH THE WINTER. MUSEUM INTERPRETERS USE THE VEGETABLES TO DEMONSTRATE ON A WOODBURNING STOVE THE TECHNIQUES OF MAKING IRISH STEW.

THE BRANDYWINE MANUFACTURERS' SUNDAY SCHOOL WAS INCORPORATED IN 1817 AND ENROLLED PROTESTANT AND CATHOLIC CHILDREN FROM THE FAMILIES OF MILL AND FARM WORKERS. CLASSES WERE HELD ON SUNDAY MORNINGS. STUDENTS LEARNED TO READ, WRITE, AND MEMORIZE ASSIGNED LESSONS. MUSEUM VISITORS MAY "ATTEND" THE SCHOOL ANY DAY OF THE WEEK TO TRY WRITING WITH A QUILL PEN.

ACROSS THE ROAD STANDS THE BELIN HOUSE, HOME TO SEVERAL GENERATIONS OF COMPANY BOOKKEEPERS. TODAY IT HOUSES A COFFEE SHOP WHERE VISITORS MAY PAUSE TO ENJOY THE PANORAMA OF BLACKSMITH HILL.





The aroma of the woodburning stove welcomes visitors to Blacksmith Hill to see aspects of life in days gone by. The Gibbons House kitchen was the heart of the home, and today cookies and biscuits are often baking in the oven as sounds from the parlor organ fill the house.

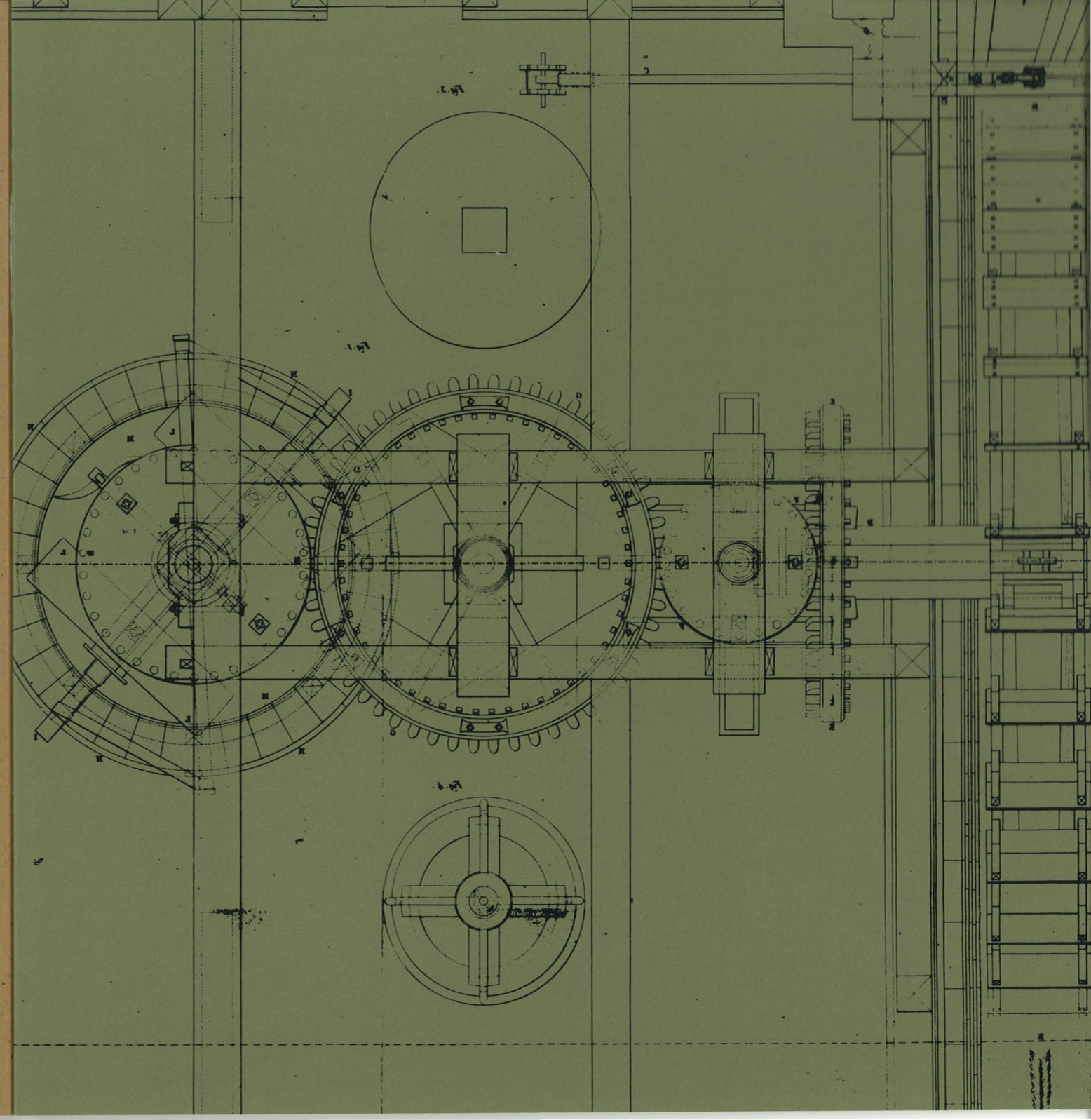




In the Brandywine Manufacturers' Sunday School, rows of wooden desks with quill pens beckon visitors to try their hands at a nineteenth-century writing technique. The superintendent rings the brass bell to signal that another class is about to begin.







VISITOR SERVICES

Regular Hours: Open daily from 9:30 a.m. to 4:30 p.m. The last bus for a tour of the du Pont residence leaves at 3:30 p.m. Tickets purchased after 2 p.m. are valid for the following day. Closed on Thanksgiving and Christmas. The Belin House Restaurant is open 11:30 a.m. to 4 p.m.

Winter Hours: January through mid-March

Open weekdays for one guided tour at 1:30 p.m.
Open weekends - 9:30 a.m. to 4:30 p.m.

Visitors with special needs should inquire at the Visitor Center concerning available services.

Contact any staff member for first-aid assistance.

Several self-guided special tour leaflets are available at the Visitor Center.

Photography is allowed everywhere except the du Pont family home and the First Office.

For everyone's pleasure and safety, the following are prohibited:

Using cell phones while on the bus or during a guided tour

Walking beyond the Steam Engine House
Pets

Food or drink in exhibit buildings

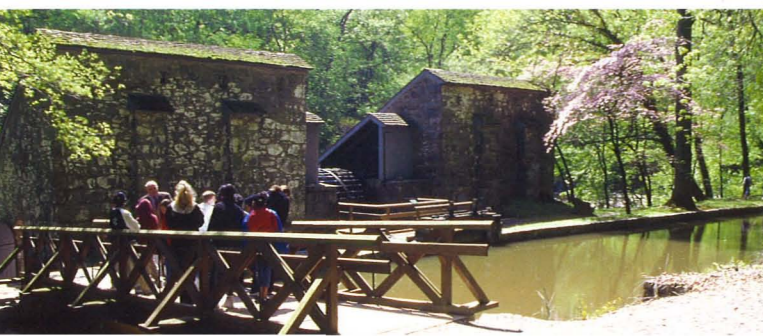
Smoking

Picking plants or climbing trees

Strollers in the du Pont family home, the First Office or the Gibbons House

Enjoy the benefits of becoming a Hagley member. Apply today and you will receive free admission for this visit and throughout the coming year. Visitor Center staff can assist you with enrollment. Consider joining today!

Visit www.hagley.org for more information about educational programs, group tours, and special events.



WORKERS' HILL

Workers' Hill is the remains of one of several workers' communities built by the DuPont Company within walking distance of the powder yards.



The Gibbons House reflects the lives of the powder yard foremen and their families.

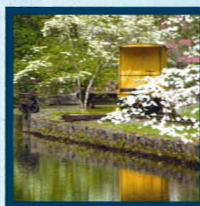
The Brandywine Manufacturers' Sunday School illustrates early nineteenth-century education where workers' children learned to read and write.

The Belin House, where three generations of company bookkeepers lived, is a seasonal restaurant, open 11:30 a.m. to 4 p.m. from mid-March to December.

Workers' Hill is open from 11:30 a.m. to 4:30 p.m. You may walk or take a bus to this area.

POWDER YARD

E. I. du Pont began building black powder mills on the Brandywine in 1802 and his company soon became the largest American manufacturer of this important explosive. The Hagley Yard, named by a former owner, was part of the first expansion in 1812.



"Easy Does It," a hands-on, fun exhibit of simple machines, is open weekends. Exhibits on power transmission and explosions are nearby.

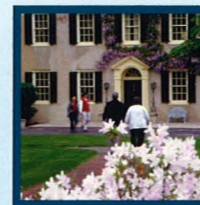
The Millwright Shop has working models of the powder-making process. The gunpowder demonstration and the machine shop demonstration start here.

The Birkenhead Mills and the 1870s steam engine are at the farthest end of the powder yard.

To learn more about the Powder Yard sites, pick up the Powder Yard Trail brochure in the Visitor Center lobby or the lobby of the Millwright Shop.

Allow at least an hour for your self-guided visit to the Powder Yard. You may walk or take a bus to see this area.

ELEUTHERIAN MILLS, THE DU PONT FAMILY HOME



Eleutherian Mills, the first du Pont home in America, was named for its owner, Eleuthère Irénée du Pont. He acquired the sixty-five-acre site in 1802 to build a gunpowder manufactory. The home today has furnishings and decorative arts that belonged to his family and the generations that followed.

E. I. du Pont's restored French Garden is the beginning of the du Pont family garden tradition in the Brandywine Valley.

The First Office (1837) reflects business practices of the nineteenth century.

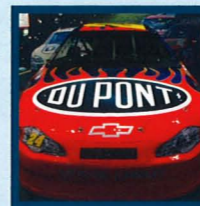
The Lammot du Pont Workshop illustrates the creative mind of Lammot du Pont, known as the family chemist.

The barn contains wagons, carriages and antique cars, as well as a collection of weathervanes and a cooper shop display.

Allow one and a half hours for your guided tour. This area is reached by bus only.

VISITOR CENTER

The Visitor Center was constructed in 1814 as a cotton spinning mill. Today it contains three floors of self-guided exhibits.

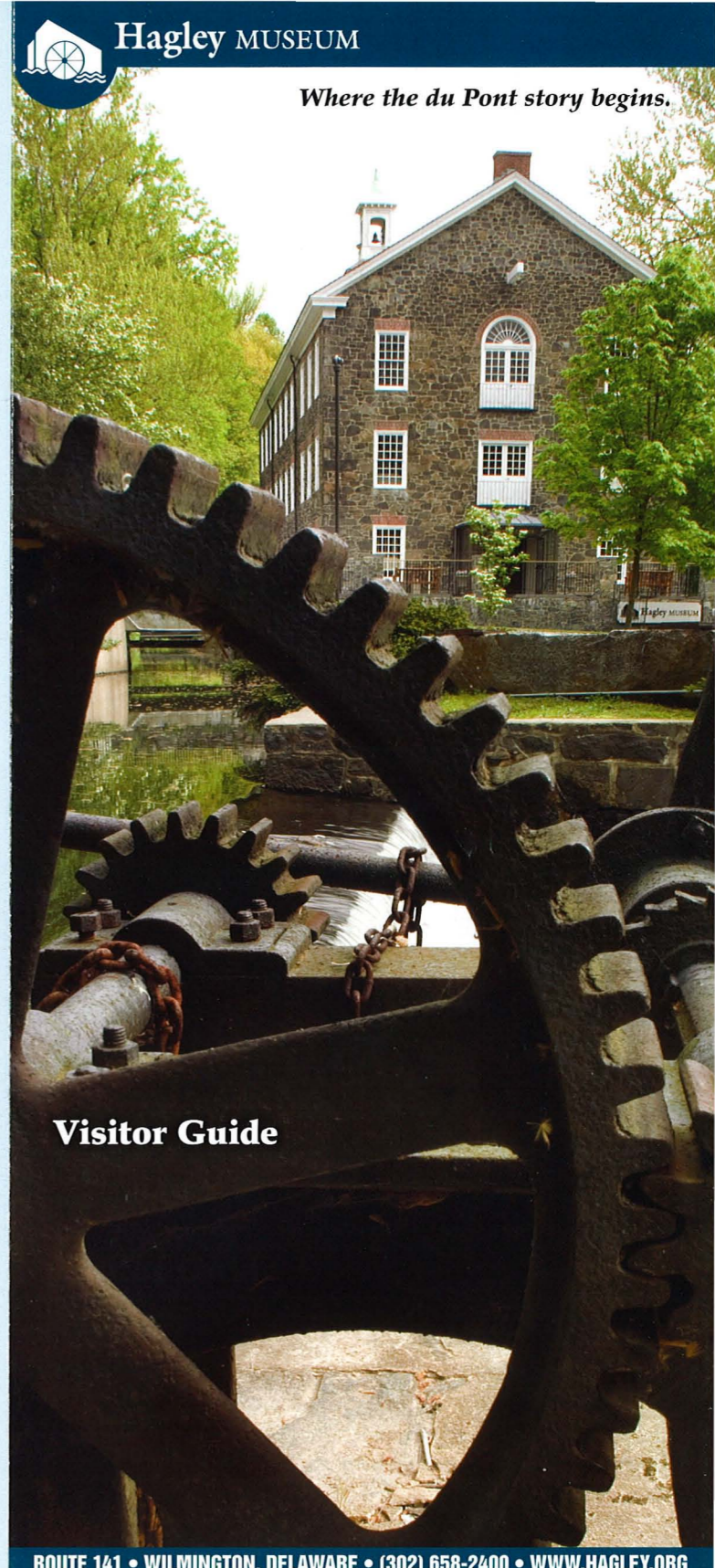


On the first floor, dioramas tell the story of "Industry on the Brandywine" and "DuPont: The Explosives Era."

The second floor features changing exhibits that highlight the extensive collections of Hagley Museum and Library.

On the third floor, the interactive exhibit "DuPont Science and Discovery" examines how the country's largest maker of explosives became its largest chemical firm.

The Hagley Store, located in the stone building next to the Visitor Center, carries a large selection of unique gifts, books, posters, postcards, and souvenirs. Open 10 a.m. to 5 p.m.



Visitor Guide

PLANNING YOUR VISIT

Located on 235 acres along the banks of the Brandywine River, Hagley is the site of the gunpowder works founded by E. I. du Pont in 1802. This example of early American industry features indoor and outdoor exhibits, including restored mills, a workers' community, and the ancestral home and garden of the du Pont family.

A visit to Hagley can take anywhere from two hours to a full day. Hagley has four main areas:

Eleutherian Mills - du Pont Family Home

- This area features the first du Pont family home, garden, barn, and First Office.
- This is a guided tour; allow one and a half hours.
- This area is reached by bus only.

Powder Yard

- Restored mills, dioramas, and demonstrations illustrate the process of making gunpowder.
- This area is self-guided; allow at least an hour.
- Gunpowder demonstrations are held on the hour from 10 a.m. to 4 p.m.
- Machine Shop demonstrations are held on the half hour from 10:30 a.m. to 3:30 p.m.
- There are ongoing steam engine demonstrations. The bus stops on the return trip from the du Pont family home and waits during the demonstration.
- You may walk or take the bus from the Visitor Center.

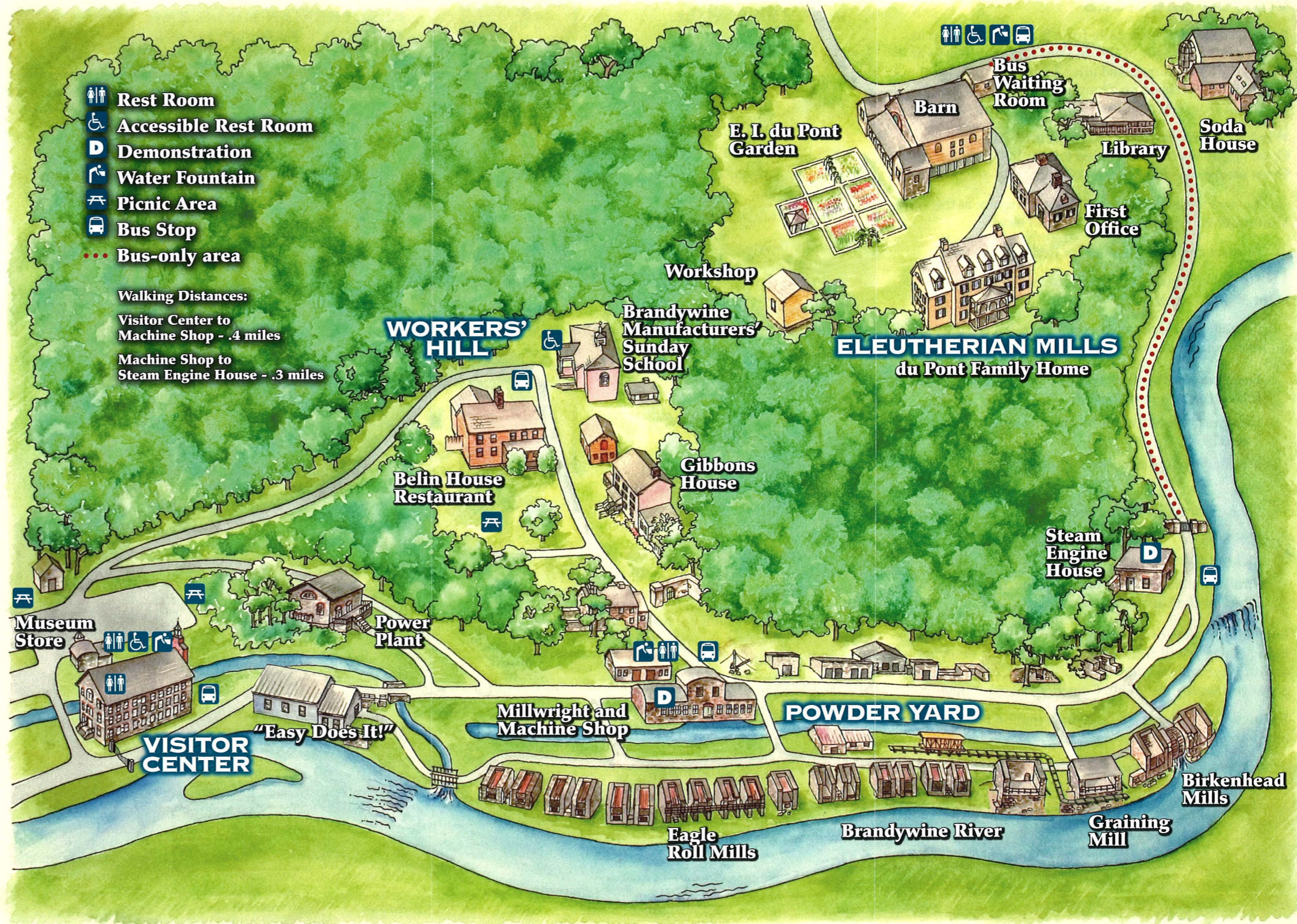
Workers' Hill

- This nineteenth-century workers' community includes a foreman's home, the Brandywine Manufacturers' Sunday School, and the Belin House Restaurant, which is open seasonally.
- This area is self-guided; allow at least half an hour.
- You may walk or take the bus.
- This area is open from 11:30 a.m. to 4:30 p.m.

Visitor Center

- There are three floors of self-guided exhibits.
- Allow half an hour minimum.

Buses leave the rear of the Visitor Center every half hour from 10 a.m. to 3:30 p.m., traveling through the Powder Yard to Eleutherian Mills, the du Pont family home. Buses travel up Workers' Hill on the return trip.





Located on 235 acres along the banks of the Brandywine River, Hagley is the site of the gunpowder works founded by E. I. du Pont in 1802. This example of early American industry includes restored mills, a workers' hill, and the ancestral home and gardens of the du Pont family.

The lure of Hagley's stunning riverside landscape reveals a remarkable combination of experiences for visitors to bring this chapter of American history alive:

- Tour the du Pont family ancestral home, filled with antiques, memorabilia, and artwork.
- Stroll through the formal French garden.
- See spectacular views of massive stone powder mills and an operating waterwheel.
- Watch dramatic demonstrations of a water turbine, a steam engine, and a working machine shop.
- Visit a restored workers' home and schoolhouse perched atop a scenic hill.

General Information

Hagley is located on Route 141 in Wilmington, Delaware.

Directions from the south: Take I-95 north to exit 5B (Newport exit) in Delaware. Follow Route 141 north for 7 miles. After crossing Route 100, watch for Hagley's main entrance on the left. **From the north:** Take I-95 south to exit 8B (West Chester exit) in Delaware. Follow Route 202 north (Concord Pike) for 1.3 miles. Stay in the left lane to turn left onto Route 141 south. Follow Route 141 south for 2 miles; get into the right lane to turn right onto the bridge. Shortly after crossing the bridge, watch for Hagley's main entrance on the right. For motorcoach directions, call our tour office or visit www.hagley.org.



Museum Hours: Mid-March through December, open daily 9:30 a.m. to 4:30 p.m.

Winter Hours: January through mid-March, open weekends 9:30 a.m. to 4:30 p.m.; weekdays guided tour at 1:30 p.m. Closed: Thanksgiving Day and Christmas Day.

Planning Your Visit: Wear comfortable shoes for a visit to Hagley's 235-acre property that can last from two hours to a full day. The grounds include both indoor and outdoor exhibits. There is free parking, a restaurant (open mid-March through November), picnic areas, and transportation to major interpretive areas. Pets are not permitted.

Accessibility: Because of the extensive nature of this historic site, there are areas of limited accessibility. Please call in advance for further information.

Admission: \$11 for adults, \$9 for students and senior citizens, \$4 for children six to fourteen, free for children five and under. (Prices are subject to change.)

Memberships: Save on admission and enjoy the many benefits of a Hagley membership. For more information, ask at the admission desk, visit www.hagley.org, or call the Hagley membership office at (302) 658-2400, ext. 235.

Dining: The Belin House Restaurant, located on Hagley's Workers' Hill, offers a lovely spot for lunch or snacks from mid-March through November.

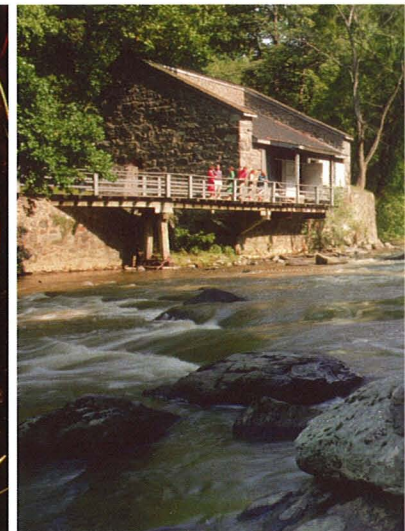
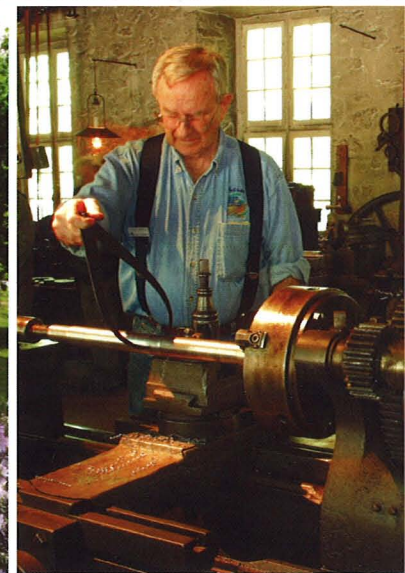
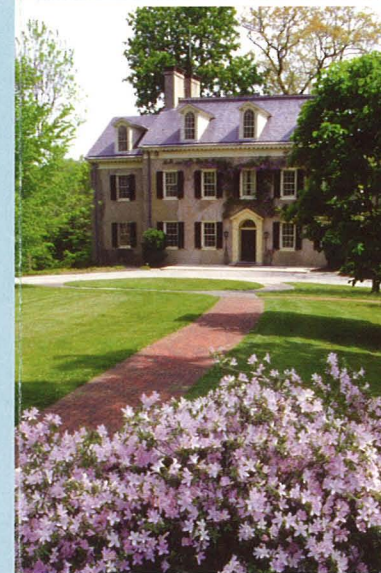


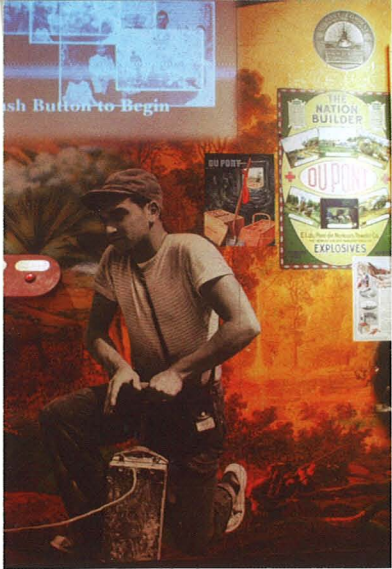
Hagley MUSEUM

HAGLEY

MUSEUM

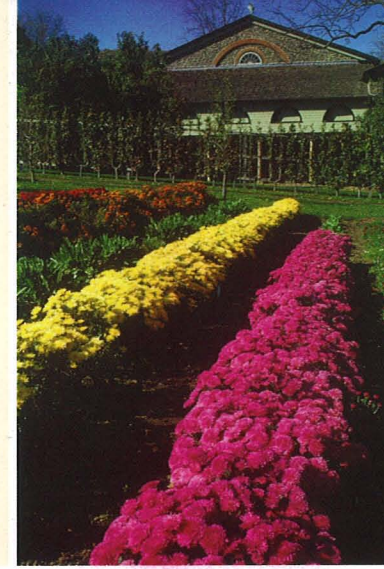
Where the du Pont story begins





Eleutherian Mills and Garden ►

Eleutherian Mills, the first du Pont family home built in America is a charming Georgian-style residence furnished with antiques, artwork, and memorabilia from five generations of family. The adjoining E. I. du Pont Restored Garden is planted with flowers, herbs, and vegetables in a traditional French style. Also adjacent to the residence is the First Office of the DuPont Company. It depicts another side of the workings of a gunpowder manufactory through artifacts from the DuPont Company's earliest presidents. Hagley's Barn houses a Conestoga wagon and antique automobiles produced by the Du Pont Motors, Inc.



Visitor Center Area ▲

In Hagley's Visitor Center, exhibits and dioramas document the Brandywine Valley's early eras, look at the role of explosives in nineteenth- and early twentieth-century life, and provide an interactive tour of the DuPont Company's history. The Visitor Center also has temporary exhibits highlighting aspects of Hagley's collections. The Hagley Store, which carries a unique selection of merchandise, is adjacent to the Center. Just a short walk from the Visitor Center is the "Easy Does It" exhibit. Open on weekends, this hands-on exhibit offers an exploration of machine technology.



Workers' Hill ▼

On the Workers' Hill, the focus is on the social and family history of the workers who operated the powder mills. Interpreters show what home life was like in the late nineteenth century. A period schoolhouse and recreated workers' garden are also part of this picture.

The Belin House Restaurant is located across the road from the school. It's a quaint spot for a snack or lunch. (Open mid-March through November.)



Powder Yard ▲ ◀

A tour of the Powder Yard offers an in-depth look at the making of the DuPont Company's original product, gunpowder. Here, you can watch dramatic demonstrations as period machinery uses water from the river to go to work. A restored nineteenth-century machine shop brings you into the din of old metal-working tools operating with whirring belts and grinding wheels. Machinists will explain what they do while they work.

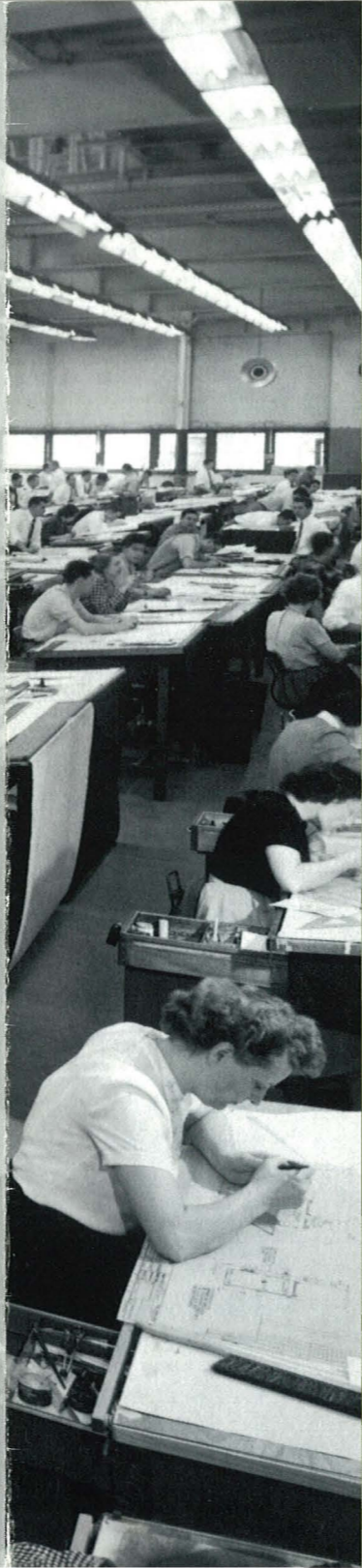


Publications

The Center encourages publication of a wide range of material, especially papers delivered at its conferences. The essays in *His and Hers: Gender, Consumption, and Technology* (University Press of Virginia) originated at the Center's 1994 conferences. Papers delivered at the Center conference, "Boys and Their Toys? Masculinity, Technology, and Work," appear in the Fall 1999 issue of *Men and Masculinities*. Beginning in 2000 *Enterprise & Society: The International Journal of Business History* will publish selected essays from the Center's conferences and research seminars, starting with a special issue containing papers from the "Beauty and Business" conference. In the future, books comprised of revised conference papers will be issued by the new Routledge series, "Hagley Perspectives on Business and Culture," co-edited by Center Director Philip Scranton and Associate Director Roger Horowitz. Scranton also edits the Hagley-supported "Industry and Society" series for Johns Hopkins University Press.

The Hagley Program in the History of Industrialization

The center actively supports the Hagley Program in the History of Industrialization of the University of Delaware History Department. Among other benefits provided by Hagley, Hagley Fellows receive funding from the center for a biennial conference.



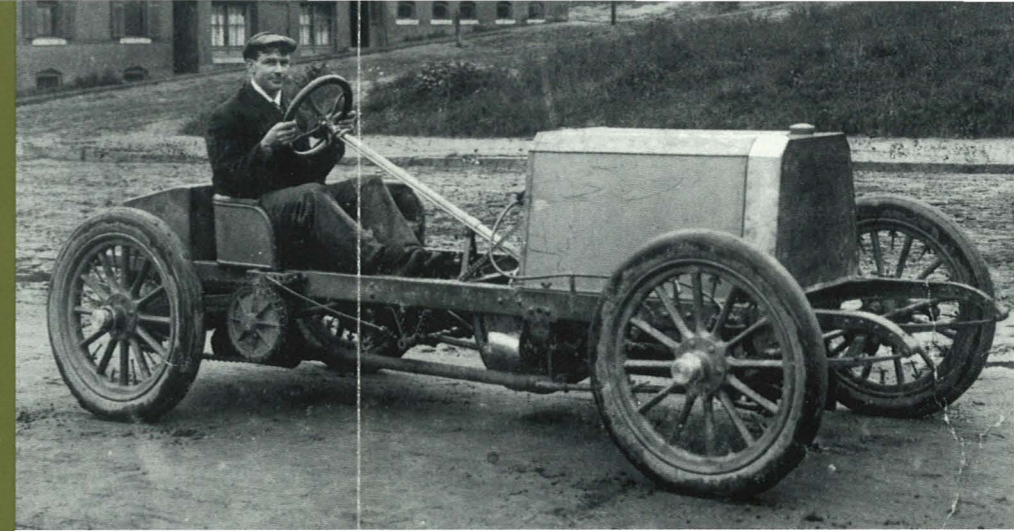
THE CENTER
FOR THE HISTORY
OF BUSINESS,
TECHNOLOGY,
AND SOCIETY

C
H
B
T
S

Cover image: Main drafting room, Sperry Gyroscope Company, Nassau, New York, 1953

Image this page: Tom Cooper, 1905, Matheson Vanderbilt Racing Car

Inside image: Demonstrating the strength of DuPont "Mylar" film, ca. 1954



Center Overview

The Center for the History of Business, Technology, and Society organizes and administers the Hagley Museum and Library's interaction with the world of scholarship. Its efforts are designed to bring attention to Hagley's research collections and to generate intellectual dialogue at Hagley. The center has long supported activities and research focused on Hagley's traditional strengths in American business, economic, industrial, and technological history. Recently it has organized events and stimulated use of Hagley's resources in new areas, especially cultural, architectural, labor, and women's history. The center strengthens Hagley's ties with scholars working in all these areas and with those in business and public policy. It also serves as the administrative center of the Business History Conference and the coordinating office for the book review section of its journal, *Enterprise & Society: The International Journal of Business History*.

Access to Hagley's rich collections is an important benefit of the center's programs along with the collegial associations these programs provide. With its focus on advanced study, the center fosters a community of scholars that includes Hagley staff, faculty and graduate students in North American universities and colleges, museum professionals, research fellows and associates, and visiting scholars from around the world.

A wide range of programs has been developed to meet these goals, including research fellowships, appointment of research associates, conferences, an annual seminar series, occasional lectures, and publications.

The center's staff is: Philip Scranton, Director; Roger Horowitz, Associate Director; Susan Strasser, Senior Resident Scholar; and Carol Ressler Lockman, Center Coordinator.

For more information, contact:

Center for the History of Business, Technology, and Society
Hagley Museum and Library
P.O. Box 3630
Wilmington DE 19807-0603
Phone: (302) 658-2400 Fax: (302) 655-3188
Email: crl@udel.edu Internet: www.hagley.org

Research Programs

The center's research programs are designed to support use of Hagley's collections and encourage projects pertinent to our interests. Researchers may use housing on Hagley's grounds. Applicants are encouraged to discuss their research objectives with Hagley staff before submitting a proposal.

GRANTS-IN-AID and H.B. DU PONT FELLOWSHIPS support research in the collections of the museum and library. Grants-in-aid are awarded for research of under two months. H. B. du Pont Fellowships can be for periods as long as six months. Deadlines for applications are March 31, June 30, and October 31.

HAGLEY-WINTERTHUR FELLOWSHIPS IN ARTS AND INDUSTRY support projects that use the research collections of the Hagley Museum and Library and the Winterthur Museum, Garden, and Library. The annual application deadline is December 1.

THE HENRY BELIN DU PONT DISSERTATION FELLOWSHIP IN BUSINESS, TECHNOLOGY, AND SOCIETY supports research and writing by candidates for doctoral degrees. Projects should demonstrate superior intellectual quality and make substantial use of Hagley's collections. The annual application deadline is November 15.

RESEARCH ASSOCIATES are unpaid positions that allow scholars to establish academic affiliation with Hagley. Associates can obtain office space, computer and Internet access, housing on Hagley's grounds, and access to the library stacks.

Public Programs

The center organizes a wide range of public events to bring attention to Hagley and its research collections.

CONFERENCES are held twice yearly, in the spring and fall. Meeting for one or two days, the conference assembles a group of scholars, students, and members of the public who deliver papers and meet in discussion sessions. Conference themes since 1998 include:

- Food and Drink in Consumer Societies
- Beauty and Business
- Technology and Artistic Practice
- Women and Historic Preservation

RESEARCH SEMINARS meet monthly on Thursday evenings during the academic year. Papers are circulated in advance to the seminar mailing list of students, faculty, public historians, and independent scholars in the region surrounding Hagley. Proposals for research seminar papers should be sent to the center by November 30. Topics over the past few years include:

- Black Market Birth Control: Contraceptive Entrepreneurship, Consumption and Criminality in Gilded Age America
- Robots for Salesmen? Vending Machines and Consumer Culture in the 1920s and 1930s
- Household Accounts: Working Class Family Economy in the Interwar Years
- Mining Colonies: Technology, Race, and Empire in the Nuclear Age
- Creating the 'Organization Man': Post-war Business Culture and Its Critics
- Transnational Labor and the Mushroom Industry: The Emergence and Growth of Mexican Enclaves in Southern Chester County, Pennsylvania

PUBLIC LECTURES are organized occasionally to attract a wide local audience to Hagley. Topics sponsored by the center include:

- Frederick Winslow Taylor and the Enigma of Efficiency
- Madam C.J. Walker and African American Business Culture

RESEARCH LUNCHEONS are arranged on an occasional basis to allow visiting scholars to share their work in progress with Hagley staff and other researchers.





It was six days, ten hours a day. Worked nine hours on Saturday. We got paid for sixty hours a week. All hours were the same except we had no light in wintertime and had to quit when it got dark. They had candles we could work by if we had something in particular.