



Society for Industrial Archeology · New England Chapters

VOLUME 13 NUMBER 1 1993

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President's Report, NNEC

1 We have a very busy and a very ex-
1 citing year ahead of us. By the time this
reaches you we will have had our
Spring Meeting and tour in Newport,
3 New Hampshire. As you know, the
Northern New England Chapter will be
5 the host for the National Fall Tour on
6 the first weekend in October, 1993.
7 The Newport industrial area (part of
7 which was the subject of local historian
8 Richard Parker's article, "The
9 Mystery of Canal Street," which ap-
9 peared in the last *Newsletter*). The area
has been built up along the course of
the Sugar River and will be highlighted
as part of this event. There will be a
meeting at Chairman Dennis Howe's
house (22 Union Street, Concord, NH)
on June 13 beginning at 4:00 to help
coordinate planning for the tour.

Vic Rolando has become involved in
working on another iron furnace, this
time in Richmond Furnace,
Massachusetts. Vic, whose book *200
Years of Soot and Sweat* chronicled the
history and archeology of Vermont's
iron industry, coordinated a recording
project there on May 21-23, which was
led by David Starbuck and jointly spon-
sored by the Northern and Southern
New England Chapters.

We will continue our work on recor-
ding the 1905 pump mill site at Canter-
bury Shaker Village on June 12-13.
This is an ongoing project on the part
of the Chapter and is in support of an
effort on the part of the staff at Shaker
Village to interpret more fully the in-

dustrial heritage of the Shaker com-
munity there.

Volunteers are needed for either or
both of these projects. We will be look-
ing for people to take photographs, do
some limited excavating, clearing
brush, taking notes, and help with
mapping.

The SIA XXII Annual Conference is
in Pittsburgh, Pennsylvania, on June
3-7. Pittsburgh was not only the center
of the iron and steel industry but was
also a hub of transportation, linking
rails, canals and riverboats.

Our Fall Meeting will be held in
Middlebury, Vermont, on Saturday,
October 16, 1993. This meeting, only
two weeks after the Fall Tour, is our
Annual Meeting with the election of of-
ficers. This is an important meeting as
we will be choosing the people who
will be guiding the affairs of the
Chapter over the next year or so.

Walter Ryan
Claremont, NH

President's Report, SNEC

Annual Conference Recap: Over
eighty enthusiasts braved a brisk
February day to attend the Sixth An-
nual Conference on New England In-
dustrial Archeology at the Boott Cot-
ton Mills Museum in Lowell. At-
tendees were treated to a full schedule
of informative and thought-provoking
papers on a variety of IA topics. Robert
Robles started the morning off with a

timely overview of the historic context surrounding the production of Eli Terry's pillar-and-scroll shelf clocks. Dean Doerrfeld then provided much food for thought with his discussion of the evolution of the Delaware canning industry. Dennis Howe powered the session along with his full discussion and illustration of aspects of the Page Belting Company's 19th century operations. Finally, Peter Stott computed the potential advantages of electronic networking and information exchange to the future of IA. After a brief break, Arthur Krim got things back on track with his speculations on the significance of surviving fragments of the original Boston and Lowell Railroad. Greg Galer marked his return to New England with a wide-spanning discussion of the activities of the Boston Bridge Works. John Goff continued the flow with his presentation on the surviving components of the Souther Tide Mill and the preservation challenges faced by this property. Finally, CeCe Kirkorian and Bob Stewart, having endured the long, drawn-out morning, restimulated everyone with their multi-media presentation on ropemaking sites and processes. A hungry, but high-spirited, group broke for a very late lunch, while some took the opportunity to tour the Boot Mills Museum, and others enjoyed another video provided by Bob Stewart. Those who returned from lunch heard concise overviews of the variety of IA issues currently before the New England State Historic Preservation Offices. Thanks to Roger Reed (Maine), Nancy Boone (Vermont), Christine Fonda (New Hampshire), Rick Greenwood (Rhode Island), and Michael Steinitz (Massachusetts). The day was capped off by an introduction of the IA of Newport, N.H. (NNEC Spring 93 program site) by Richard Parker, followed by a powerful autobiographical evocation of Newport as a historic industrial community by tapestry artist Patryc Wiggins. Many thanks to the presentors especially, and to the participants, whose comments

and insights contributed to a day full of shared ideas and discussion. Special thanks also to our hosts, the National Park Service—Lowell National Historical Park, for a wonderful setting. A few sets of paper abstracts are still available.

Preservation Award for French King Bridge: The Massachusetts Highway Department has received a 1993 Massachusetts Historical Commission Preservation Award for its rehabilitation of the French King Bridge, located on the Mohawk Trail (route 2) over the Connecticut River in Erving and Gill, Massachusetts. The project was nominated for this award by the SIA-SNEC, in recognition of the completion of a 5.4 million dollar restoration effort. The 783-foot steel arch span was designed and constructed by the Massachusetts Department of Public Works. Opened to traffic in 1932, this IA landmark was named the most beautiful American steel bridge of its class by the American Institute of Steel Construction. The extensive deck-up rehabilitation project included restoration of concrete abutment pylons, repair of the painted eagle electroliers, replication of deteriorated concrete abutment railings, posts and copings, and repair of wrought iron bridge railing. The Massachusetts Highway Department is to be congratulated and commended on this careful restoration which has brought this significant structure back to its original condition and appearance. The Award will be presented at the Massachusetts Historical Commission's annual Preservation Awards Ceremony on the evening of May 20 to be held at the Boot Mill Museum, Lowell National Historical Park (the site of the NE-SIA annual conference). Chapter members are invited to attend! For more information call the Massachusetts Historical Commission (617) 727-8470.

New Publications: The Massachusetts Archives, a division of

the Secretary of State, has recently published *The Built Environment: A Guide to State Government Records of Massachusetts*, a 375-page finder's guide to a wealth of documentary materials relating to buildings, roads, bridges, monuments, designed landscapes, structures and other physical features and constructions. The *Guide* includes not only records of the holdings of the Archives, but also identifies many valuable records in the possession of numerous state agencies. The scope and breadth of the holdings described in this publication make it a required reference work for anyone doing research on the history of the built environment in the state, particularly those interested in the role of the public sector in shaping, organizing, and transforming the Massachusetts landscape. The *Guide* presents histories of the state agencies represented as well as descriptions of the relevant records holdings. Public works such as highways, bridges, water and sewer systems, harbor and navigational improvements, reservations, recreational facilities and parkway developments are all well represented by reports, maps, plans, and photographs in the collection. Industrial archeologists will find a wealth of information on the history of construction and engineering relating to the state's historic infrastructure. The *Guide* includes nearly 250 MARC-format series records descriptions, an introductory narrative on the Massachusetts Archives and other sources of information on the built environment, and an index. For additional information, contact the Massachusetts Archives (617) 727-2816.

The National Park Service has recently published *National Register Bulletin #42, Guidelines for Identifying, Evaluating, and Registering Historic Mining Properties*, by Bruce J. Noble, Jr. and Robert Spude (30pp). While this publication is mainly oriented toward historic mining properties in the country's major (i.e.,

western) mining regions, those interested in the documentation and preservation of sites related to the history of extractive industries in New England will find this publication of interest. Although other extractive industries such as quarrying, clay pits and sand and gravel operations are not considered, the discussions suggest approaches that would be equally appropriate for these types of historic sites and complexes. The bulletin outlines in detail recommendations for identification of mining properties, for applying the National Register criteria, and for documenting properties for National Register listing. A selected bibliography and glossary are included. Copies of the bulletin may be obtained from your state historic preservation office.

The Metropolitan District Commission (MDC) of the Commonwealth of Massachusetts has recently published a *Self Guided Tour of Spot Pond Brook Archaeological District*, by Thomas Mahlstedt (MDC Chief Archaeologist) and Joshua Cline. The sixteen-page brochure provides walkers with a trail guide to the history and industrial archaeology of this National Register district, located within the Virginia Wood area of the Middlesex Fells Reservation in eastern Massachusetts. Sites and features noted include those of grist, saw, spice, snuff and textile mills, a bronze foundry, and Nathaniel Hayward's rubber works. The brochure includes a fold-out map and a two-page glossary which explains terms such as "flume" and "wheel box." The brochure is on sale for \$1.50 at the Fells Reservation Headquarters at One Woodland Road, Stoneham, Massachusetts. The trail is accessible year round. The *Self Guided Tour* was dedicated during an MDC Centennial Event on Saturday, May 15th, from 9:30 to 12:30 at the Middlesex Fells Reservation. Guided tours were provided. For more information contact Thomas Mahlstedt (MDC) at (617) 727-2744.

I look forward to seeing you at Spot

Pond Brook, on the next weekend at the Richmond Furnace Recording session, and at the SNEC Spring Program in June (TBA).

Michael Steinitz
Somerville, MA

Article

Richmond Furnace: 1829-1923

In the little village of Richmond Furnace, 10 miles southwest of Pittsfield, stands western Massachusetts' only fully standing blast furnace. This stack dates to 1905 when the previous 1893 furnace was completely overhauled. The original furnace at the site was built in 1829.

In 1827 ore was first taken from an outcrop at what became Richmond Furnace. It was initially carried in saddlebags to a forge in Glendale, where Richmond iron was originally produced in small quantities. Soon after, in 1829, a furnace was erected close to the ore workings, and for the next 94 years,

iron was produced continuously on this site.

During the Civil War, the output of the furnace was devoted almost exclusively to the manufacture of Rodman guns. All the iron which went into the construction of the guns for the original *Monitor* is also supposed to have come from this stack. Richmond iron was particularly suitable for taking a chill and was used widely for this purpose. For 40 years after the war, the entire output of the furnace was used by the Pennsylvania Railroad and the Chicago, Milwaukee & St. Paul Railroad for making chilled car wheels. During all these years, the Pennsylvania Railroad reported it never experienced a wreck due to a failed wheel made of Richmond iron. Records show that the car wheel iron withstood a pressure of 24,222 psi. Richmond iron was used extensively for casting superheaters, high-pressure castings, ammonia castings, chilled rolls, steam cylinders, and other castings requiring great strength and a close-grained structure. During this peak period of business success, Richmond Furnace became a boomtown, and the company payroll included up to 700 employees.

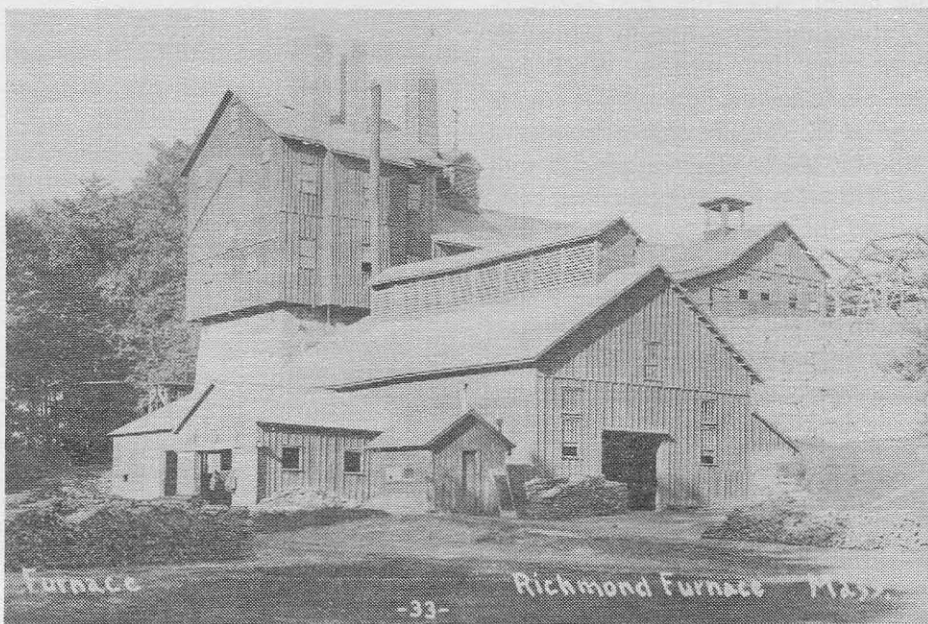


Figure 1. A 1913 view of Richmond furnace, showing the top house (upper right), casting shed with roof-top

monitors (center), and engine house at ground level (left). The furnace top can be seen behind the casting shed.

The original 1829 furnace had a stone hearth, stone stack, and open top. It was provided with a dam-and-tymph form of hearth construction, which was usual in those days. The blast was furnished by an over-shot waterwheel-powered blower. This stack was operated until 1863 when it was partially rebuilt. At the same time the waterwheel was replaced by a blowing engine, and the stone hearth was replaced by a brick-lined, cast-iron, water-cooled hearth. Five new water-cooled, bronze tuyeres were also provided, placed 27.5 inches above the bottom of the hearth.

About 1885, a warm-blast stove was provided, bricked in at the front of the stack. Incoming air passed through 28 U-shaped cast-iron pipes, heated to about 500 degrees F by hot gasses from the top of the furnace, and applied to the tuyeres at a pressure of 0.75 psi.

When rebuilt in 1905, the furnace was 35 feet high with a bosh diameter of 9 feet; the outside diameter of the hearth was 4 feet 2 inches. The stack proper was stone, lined with brick, and the top was open as it was originally. The power plant consisted of two Babcock & Wilcox, 75-horsepower water-tube boilers which operated alternately, changing from one to the other about every three months. Waste furnace gas fueled the boilers. The engine room at the furnace also contained a 5-kilowatt electric-lighting plant as well as a drill press for sampling each cast. In 1912 blast was provided by two Sturtevant No. 9 positive blowers, direct coupled to engines, which superseded the old blowing.

The casting house was 30 by 60 feet and was provided with a sand bed into which the heats were run every eight hours. Daily output was 12 to 14 tons. The top house was 30 by 90 feet and was equipped with an over-head tram-rail system for conveying the raw materials and dumping them into the furnace. The top house was large enough to hold a supply of ore, charcoal, and limestone to run the furnace several days. Limestone, delivered to

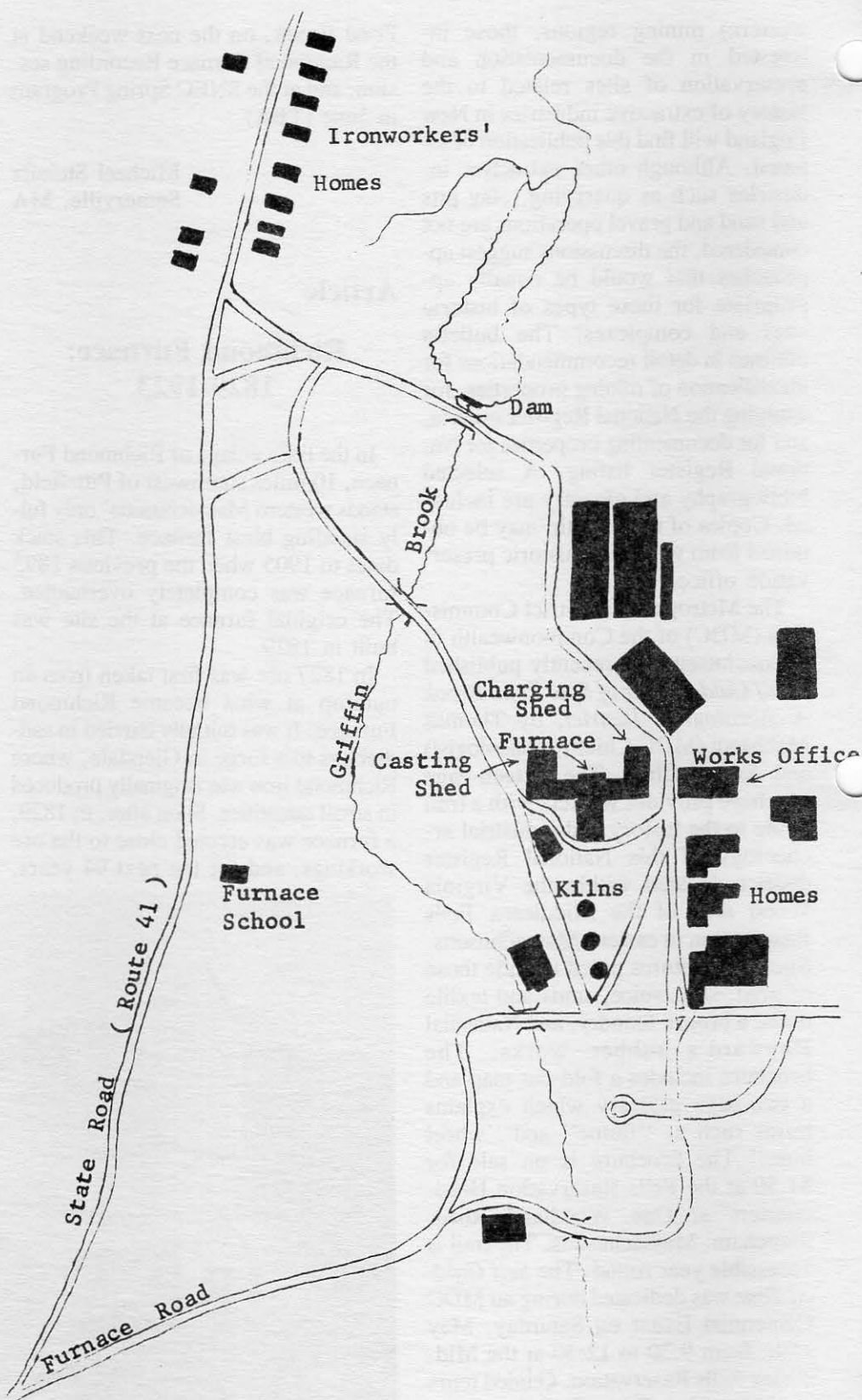


Figure 2. An 1877 ground plan of the Richmond Iron Company and environs.

the top house in broken form, was fed through a jaw crusher and piled by a bucket conveyor.

The Richmond Iron Works was incorporated in 1905. Prior to that the concern had always been known as the Richmond Iron Company. In addition to the furnace the Works owned a major ore bed 1500 feet to the east, three limestone quarries, seven charcoal kilns, a building capable of storing 200,00 bushels of charcoal, a stable and wagon shed, and an office building. The company also owned furnaces at Cheshire and Great Barrington, Massachusetts, as well as leases to charcoal kilns and woodlots in New York and Vermont.

By the turn of the century, competition was squeezing tighter and tighter. The opening of the great Minnesota ore beds and the invention of the Bessemer process for making steel reduced the price for iron. The price of charcoal at Richmond steadily rose, from one cent to ten cents a bushel, then to 20 cents when the price was fixed during World War I, and suddenly after the war to 31 cents a bushel, 125 of which were needed to make a single ton of iron. Finally, in 1923, the furnace and mines closed down, and in three years all company property had been disposed of. The 18 dwelling houses were bought by their occupants; the railroad station, company store, and post office were torn down; and the big sheds around the old stone stack were sold for the lumber they contained.

The 1905 stack still stands, a few dozen feet north of Furnace Road. At the base of the stack is the final heat in the form of a giant ball of iron and slag. Examination shows the marks of the hearth bricks, made when the "bear" was molten inside the hearth. At some point in time, possibly when the hearth was scavenged for its brick, the "bear" was freed and it rolled out. Piles of glistening slag litter the grounds as do foundation walls and holes of unknown depths, hidden in thickets. The old works office and various other works buildings in the



Figure 3. *The Richmond furnace stack in 1972, from the same approximate*

angle as Figure 1. immediate vicinity are now private homes. To the southeast, along the old railroad right-of-way, are remains of charcoal kilns, an ore-processing plant, and more piles of slag among dumps of spent firebrick.

During the Friday-to-Sunday weekend of May 21-23, 1993, on the 70th anniversary of the furnace's demise, volunteers from the Northern and Southern New England Chapters - SIA, along with members of the Richmond Historical Society and Richmond Historical Commission, held a joint recording session at the furnace grounds. David Starbuck was Project Leader; Vic Rolando coordinated between the Chapters and Bill Edwards (NNEC) of Richmond. Many of the volunteers also participated at furnace recording sessions in Vermont at Forest Dale (1989) and Pittsford (1991). The recording sessions are important ways in which the expertise and labor of the SIA can help local groups accomplish the huge tasks of preserving the remains of New England's once significant iron industry.

Victor R. Rolando
Manchester Center, VT

Book Review

*200 Years of Soot and Sweat
The History and Archeology of
Vermont's Iron, Charcoal and Lime
Industries*

by Victor R. Rolando

The Vermont Archaeological Society
vii and 296pp, 8-1/2" X 11",
illustrated, paper, \$32.95

Iron making was one of the earliest New England industries, beginning not long after the arrival of the first Pilgrims. Thanks to a geology which contained the necessary ore, and abundant forests which provided the fuel for the furnaces, forges and bloomeries, the production of iron grew to a major industry, peaking about 1840 at an estimated annual production in excess of forty thousand tons of pig and bar. Little evidence of that once large industry remains today. After 1840 the volume of iron produced soon began to fade, and, during the next 25 years the New England industry died. As

coal mined in Pennsylvania became cheaper, and with the discovery of vast deposits of high-grade ore in Minnesota, the industry moved west, closer to those ore deposits and the coal. In the west, new process technology replaced the older New England iron making system.

Much of this early industrial history and technology might be completely forgotten but for Victor R. Rolando (SIA) who has devoted the last twenty-five years to the study of early iron making and associated industries, focusing on Vermont. He has written a new volume, *200 Years of Soot and Sweat*, which documents the history of Vermont's iron, charcoal, and lime industries.

Mr. Rolando has made the book accessible to all. Not only is it extraordinary for the completeness and scope with which he has described and tabulated the physical remains of Vermont iron making and its products, but also he provides an historical overview, defines the technology, and includes a glossary of terms. (He has included a thorough study of the lime industry because, to the untrained eye, lime kiln remains resemble blast furnace ruins.) His book is illustrated with many photographs and historic drawings which add richly to the information it contains.

Although the book focuses on Vermont iron working sites, it will educate anyone with an interest in the early New England industry. One can learn about the original technology which was the foundation of what was to become the huge American steel enterprise of the 20th century. Or, with the book in hand, one who enjoys exploring the Vermont countryside can locate ruins of the industry.

Iron production in New England could not have been possible without wood. Trees were felled and turned into charcoal by colliers who constructed countless wood and earth mounds or brick kilns which they used to burn green wood in a reduced (oxygen-lacking) atmosphere to create a product

of mostly pure carbon with a bit of hydrogen which is not to be confused with the stuff of modern back yard cookouts. Approximately three hundred bushels of charcoal were required to produce a ton of iron. This equals about half an acre of forest per ton of pig iron. Because of this vast consumption of forest resources by the iron industry, and the complexity of its use in the ore melting process, it is important that Mr. Rolando has devoted an appropriately sizable section of the book to charcoal production.

Vermont's mines and ore pits have been investigated and located. "Bog iron", "brown iron ore" and other sources of the raw material are examined. The sometimes complex and difficult extractive processes are described.

The ironworks study located ninety-nine manufacturing sites in the state. Each was visited and investigated for surface evidence of remains. In the book each is described, and, where possible, the type of associated industrial components is presented. The entrepreneurs and other people who were responsible for the development and management of the various works are documented with great detail, and Vermont families with ironworks affiliations are traced. Many of the Vermont ironworks products, such as stoves, kettles and nails, are described and illustrated. Vermont's 19th century stove manufacturers (which numbered over forty) are listed along with the locations of examples of their products which may be viewed by the public.

There seems to be little concerning Vermont iron making which has not been included in the book. Almost as a bonus is the very thorough treatment of the lime burning industry. Its historical and technical aspects are given the same high level of study as that to iron and charcoal. Seventy-one lime burning sites are tabulated, noting the type of kiln for each, and site-by-site descriptions of remains are provided.

Mr. Rolando's *200 Years of Soot and Sweat* is a convenient research source for anyone who wants to learn the basics of iron manufacture, charcoal making, or lime burning. As a reference work on Vermont industry the book is invaluable, and it is an important work in the field of industrial archeology. Mr. Rolando's intensive research and this resulting book should be seen as a model for similar endeavors in other regions of the country. It may be obtained from: Mountain Publications, PO Box 1812, Manchester Center, VT 05255.

Dennis E. Howe
Concord, NH

COMMENTS BY THE AUTHOR

Sales of my book are doing well, and acceptance by press and professionals has been very encouraging. While technical reviews by *IA* and *Technology and Culture* are still in process, a sampling of some press reviews are as follows:

"Hiking Vermont's hill with amateur archaeologist Victor Rolando is like following one of the great Indian trackers, except that instead of pursuing game, he is seeking the past." Ed Barna, *The Sunday Rutland Herald* and *The Sunday Times Argus*, Vt., October 25, 1992.

"200 Years of Soot and Sweat is no novel, but for Vermonters who care about the culture we have lost, it contains the stuff of dreams." John Howland Jr., *The Burlington Free Press*, Vt., February 21, 1993.

"An amazingly comprehensive and detailed look at Vermont's earliest industries, with photos, maps, artwork, charts, and diagrams galore." *Vermont Life*, Spring 1993.

And from some of the many letters received:

"It is a major contribution to our understanding of the state, and in areas totally neglected." Prof. Harold A. Meeks, Geography Department, UVM.

"What a nice surprise! The book is excellent. . .!" Richard Sanders Allen (SIA), historian and author.

This is a culmination of an incredibly dedicated and thorough effort. . . it will answer a myriad of questions I have had about iron, charcoal, and lime production." James L. Garvin (NNEC SIA), Architectural Historian, N.H. Division of Historical Resources.

"[Your book] is unique in our eastern states where the need for survey of iron resources is an ideal that is desired but far from being accomplished. This book is a bell weather because it shows the job can be done. . . it meets professional standards in every way." Edward S. Rutsch (SIA), Newton, N.J.

One result of publication has been my appointment, on November 30, 1992, to the Center for Research on Vermont by Dr. Howard Ball, Dean of the College of Arts and Sciences, UVM. Another is the flood of requests to address historical societies throughout Vermont, therein providing inputs on my sites and remains that were not documented in the book—field and archival work for 1993 and 1994! I am also busy answering letters of inquiry about IA sites outside Vermont, allowing for further accumulation of supporting evidence and data on materials that improve the context and interpretation of all associated IA sites and ruins.

The book was submitted on April 30 for consideration by the 1993 Annual Awards Program of the American Association for State and Local History (AASLH) in the individual contributor category. David Starbuck (SIA) did the nomination form; Giovanna Peebles (Vermont State Archaeologist) and Edward Rutsch (SIA) provided supporting letters, and Eric Gilbertson (Vermont Division for Historic Preservation) and Dennis Howe (SIA) provided book reviews (see Dennis Howe's review above). The first "hurdle" will be the state chair, Michael Sherman, Direc-

tor, Vermont Historical Society, Montpelier.

Victor R. Rolando
Manchester Center, VT

Announcements

Ledyard Mill

The Ledyard operating water-powered up-down sawmill is open to the public every Saturday 1:00-4:00 throughout the summer.

The mill is on the National Register of Historic Places. Restored as it appeared in 1860, the mill has been operated as a grist mill, a railroad tie mill, and shingle mill. Visitors may also view an operating blacksmith shop, ice harvesting equipment and other mill artifacts. It is free to all. No admission is charged.

The mill is located on 11 lovely acres including a pond and picnic area. From route I-95, take route 117 north to Ledyard Center, then east on Iron Street (route 214).

Lowell Conference on Industrial History

The 12th Lowell Conference on Industrial History which will be held June 3-5 at the Sheraton Inn (Lowell, MA) will explore the connections between the slavery system of the South and the textile industry of the North. Economic, social, ideological, and political relationships between the North and the South will be examined. Participants will also address a range of concerns pertaining to the interpretation of the overall African-American experience.

The conference offers workshops, media and living history presentations, panel discussions, and distinguished speakers. Sessions and activities are geared for scholars, museum staff, teachers, National Park Service interpreters, public history professionals,

and the general public.

Offered as a special training opportunity for National Park Service interpretive staff, the conference reflects the National Park Service's commitment to multiculturalism and to enhancing the management of its cultural and heritage programs in order to emphasize the American experience in all its diversity.

On Friday, June 3, at 8:00 in the evening the students and friends of Roxbury Community College will perform "Words of Resistance" by Professor David Coleman II, free and open to the public.

On Saturday, June 4, at 8:00 in the evening, also free and open to the public, there will be a performance of "Frederick Douglass," a solo dramatic portrayal in the Chautauqua format by Charles Pace, Purdue University.

The fee, payable by check only to the University of Massachusetts, Lowell, is \$50.00 for the entire conference, or \$25.00 for a one-day registration, and includes lunch, refreshments, and conference materials. Saturday, June 5, is free and open too the public. Contact Elaine Duquette, Division of Professional Services, Lowell National Historical Park, 169 Merrimack Street, Lowell, MA 01852, (508) 459-1025.

Requests for Help

Greenway Network

New Hampshire Foundation [a non-profit 501(c) (3) organization] is developing a master plan for a series of landscaped parks, natural conservation areas, historic preservation districts and urban centers that will connect, by foot and bicycle paths, downtown Concord, New Hampshire, with neighboring communities.

In addition to alternative transportation, the master plan provides for recreation areas, and, where appropriate, the renovation of urban historical neighborhoods, archeological planning and research, and interpretive

placards and bronzes at sites of historic significance.

Because the proposed park and greenway network follows brooks and rivers in the Merrimack River watershed, central to the plan is the preservation of local early mill sites and impoundments, and preservation of adjacent buildings, both mill sites and buildings being eligible for inclusion in the national Register of Historic Places, either individually or as a contributing part of several different potential historic districts.

The goals of the master plan are historic preservation, recreation and conservation.

Towns that could benefit from the plan include Concord, Loudon, Pembroke, Canterbury, Gilmanton, Guilford, Belmont and Laconia.

Individuals or groups interested in participating in the Master Plan should call or write Lovering Hayward, New Hampshire Foundation, 266 North Main Street, Concord, NH 03301, (603)225-7697.

Lovering Hayward
Concord, NH

Waterborne Coal Trade

I am researching the waterbourne coal trade between the Mid-Atlantic states and New England from c.1870 to 1940. I am interested in the machinery and organization of the trade, and companies involved in the transportation and distribution of coal; and in the relationship of the mining companies and coal railroads to the ocean shippers and distributors.

I am seeking good photographs and diagrams of coalhandling facilities, machinery and vessels, and sources (oral and written) for the coal business. Obviously, the topic needs to be narrowed down. Meanwhile, I would appreciate receiving information regarding sources from chapter members. One unlocated, vague bibliographic reference concerns a detailed publish

description (with photos, I believe) of coastal coalhandling facilities in New England; this was mentioned by someone retired from Sprague Energy Company of Portsmouth, NH (successor to C.H. Sprague and Son — one of the oldest New England companies dealing in coal and now a subsidiary of Axel Johnson Company of Sweden). Also, I have contacted major libraries and museums in the field of which I am aware (Mariners Museum in Newport News, Hagley Museum and Library, Steamship Historical Society of America Collection in the University of Baltimore Library, for example), but members may know of others.

Woodard D. Openo
Somersworth, NH

Earthen Pit Furnaces

I am an amateur archeologist interested in obtaining information about earthen pit iron furnaces. My interest comes from a 30-year study of early Ohio fire pits which I now believe give evidence of being direct reduction iron furnaces, dating either to Colonial or early settlement times here. Some evidence suggests the furnaces were Colonial, used to produce Indian trade items, but more evidence is needed for this to be conclusive.

My associates and I, as members of the Archaeo-Pyrogenics Society (formed in 1992), excavated an earthen pit furnace last August and September, and found that it was partially constructed with bricks, probably sun-dried, which formed an air duct under the furnace bosh, and many found inside the bosh were heavily glazed on one and sometimes two surfaces. Bricks outside the bosh, forming the air duct, are unglazed. These bricks were joined by mortar made of the same clay as the bricks themselves as one would expect in such a high temperature structure.

There is, of course, no historical record of such earthen pit furnaces ever being in Ohio, but nonetheless, evidence of the furnaces exist. I am

quite interested in any historical reports on earthen pit reduction iron furnaces known to have existed in Colonial New England. The historic iron industry began in Ohio in the 1830s with sandstone chimney blast furnaces which produced cast iron. By then, the direct production of wrought iron had been replaced by the puddling furnace. We recently were informed that evidence has been found in Rhode Island which suggests remains of direct reduction earthen pit furnaces may exist there.

Can any New England Chapter members provide further information about this technology?

William D. Conner
4342 Knob Hill S.
Columbus, Ohio 43228

Manchester Historic Association

[Editor's note: The Manchester Historical Association which maintains a museum and research library at 129 Amherst Street, Manchester, New Hampshire, recently named John Mayer as its director. The collections of the Association include much of interest to industrial archeologists including thousands of photographs of the Amoskeag Company mills. Mr. Mayer encourages researchers to use the facilities and collections and has provided this brief report of his recent activity.]

Things at the Manchester Historic Association are slowly coming to life. As the Association's new director, I have been busy acquainting myself with the various resources within the community and the wonderful collections that have been assembled by the staff of the Association over the past 97 years. Currently, I am working on final designs for gallery improvements for our first floor exhibit areas, and on the script and object list for a major exhibit on the history of neighborhoods and ethnic communities in Manchester.

Together, the gallery improvements and this exhibit will be part of a new initiative at the Manchester Historic Association to reach out to a broader audience and upgrade the level of our operations.

While I am working on these two projects, I am surveying our collections for materials that will be useful for our exhibit schedule in 1994. The 1994 calendar will focus on the history of business and industry in Manchester and potentially include exhibits such as "Made in Manchester," a history through the manufactured goods in the Association's collections; a new exhibit or a retrospective on the history of the Amoskeag Company and millyard; a survey of existing industrial sites in Manchester with a goal to create a catalog and an index of local industries; and a general survey of the history of work life in Manchester as representative of the social history of New England in general.

I am excited about all of these exhibit ideas and would welcome the help, interest, support, or ideas from members of the SIA. In addition to the exhibit schedule, I will be looking to put together a program component that would include lectures, tours, workshops and demonstrations, and I definitely will need some help with these ideas as well.

I feel fortunate to be involved with an institution, and in a community that is strongly associated with industrial history. I see wonderful opportunities to organize interesting, fun, and meaningful projects. I hope there is interest within the Northern New England Chapter in becoming involved at the Manchester Historic Association. I look forward to getting to know local SIA members as I develop these and other programs that demonstrate and interpret the city's rich industrial history.

John Mayer
Manchester, NH

New Publication

The Cambridge, Massachusetts, Historical Commission has been carrying on an architectural survey of Cambridge for many years. It maintains files by street address and has published a series of five paperback books, well-illustrated, on the different parts of the city. Recently, the Commission has begun reissuing these publications, some of which are out of print; Susan Maycock's revised *East Cambridge* is available by mail for \$19.45, including postage. This is traditionally the industrial part of Cambridge, and Part IV is entitled "Industrial Development and Architecture" (Maycock notes that by 1920, Cambridge had become "an industrial city second only to Worcester in Massachusetts"). However, industrial information is scattered through the other volumes, *Mid Cambridge*, *Cambridgeport*, *Northwest Cambridge*, and *Old Cambridge*. In addition, the series is unusual for its through coverage of workers' and middle class housing in a scholarly way. Commission files are open to researchers, but one should probably call ahead (617) 346-4683. Address: Cambridge Historical Commission—Attn.: Erika Bruner; 57 Inman Street, Cambridge, MA 02139.

Woodard D. Openo
Somersworth, NH

Comment

The Sixth Annual Conference on New England Industrial Archeology at Lowell, Massachusetts, on Saturday, February 6, 1993, scheduled an Opening, Welcome, eight 20-minute papers, plus a 15-minute coffee break, all starting at 9 a.m. and ending at noon.

As can be expected, few, if any, stuck to 20 minutes, and the noon lunch break started at 1:15 p.m. Granted that establishing meeting schedules is difficult at best, 20-minute presentations

have rarely, if ever, worked. It is not the speakers' fault that given individual introduction time (30 seconds?), sticky carousel time (30 seconds?) and time for questions and answers (3 to 7 minutes?), by the time the paper has warmed up the audience it is time to wind down for conclusions and closing statements. By the fifth speaker it is obvious the program is running late, and the conference chairperson is apologizing to everyone.

This is unfair to the attendees, who are promised a schedule that they can depend on; but it is particularly unfair to the two or three speakers in the deadly position of having been scheduled at the end of the session (as I know from personal experience) who feel compelled in most cases to hurry through their papers to make up for a poor program schedule or for inconsiderate earlier speakers who ran on for upwards of 30-plus minutes. Taking everything into consideration, a 20 minute slot realistically demands that each speaker limit the paper to between 12 to 15 minutes.

Since the annual conference, at Lowell at least, attracts a number of speakers and the program committee doesn't appear to want to turn anyone down, some accommodation should be made in the schedule for many speakers other than cutting everyone's time shorter.

Has the Annual Conference on New England Industrial Archeology matured to justify a 2-day weekend conference?

Vic Rolando
Manchester Center, VT.

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Society for Industrial Archeology

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