

SOCIETY FOR INDUSTRIAL ARCHEOLOGY

NEWSLETTER

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HOLOCAUST AT LYNN



"Like Berlin in 1945" was how many described the devastation that covered 6½ acres in downtown Lynn, Mass. The losses included \$70 million in real estate and property and, sadly, the physical remnants of Lynn's history as one of the nation's major shoemaking centers. *Photograph courtesy Lynn Daily Evening Item.*

"You're looking at the history of shoe manufacturing in this country, and it's gone," said Brian Magrane, chairman of the Lynn, Mass., Economic Development & Industrial Corp., in the aftermath of the worst fire in the city's history. The blaze—believed to have been the work of an arsonist—destroyed 17 buildings and damaged 9 others. The smoke could be seen as far away as Boston, 10 mi. southwest of Lynn.

The fire broke out early in the morning of Nov. 28 in the vacant Hutchinson's Wharf Building (1907). It spread quickly, requiring the evacuation of 600 people and the efforts of 500 firemen before it was brought under control 10 hours later. The fire destroyed numerous shoe factories and associated buildings in an area known as the industrial loft section of Lynn. Many of the vast, mostly empty brick factories were being renovated to serve as offices, stores, and apartments.

One of those lost was the Breed Building No. 2 (1890), which was to have served as a visitor center for the new Mass. Heritage Park in Lynn. Work on the park will proceed at a harbor site that escaped the fire. The Vamp Building (1906, 1907), a former shoe factory converted to housing that was the cornerstone of the city's revitalization efforts, suffered extensive damage but is being repaired. Most of the buildings that were destroyed dated from the turn of the century, since another fire had destroyed the same district in 1889. Lynn was once one of the largest shoe manufacturing centers in the world and was the industry leader in the adoption of the factory system and the sewing machine. *More*

1982 ANNUAL CONFERENCE
Harrisburg, Pa., May 7-9. Preview on page 9.



Bird's-eye view of the devastation at Lynn. Photograph courtesy Lynn Daily Evening Item.

FIRE IN FALL RIVER

Also destroyed by fire last fall was the Richard Borden No. 1 Mill (1872-1873) in Fall River, Mass. On Nov. 5, fire broke out in a section of the mill undergoing renovation for manufacturing and retail use.

Between 1870 and 1920, Fall River was the Western Hemisphere's largest cotton manufacturing center. The five-story Borden No. 1 Mill, constructed of granite, was included in the New England Textile Mill Survey conducted by the Historic American Buildings Survey in 1971. The mill had large floor areas (89 ft. x 336 ft.) uninterrupted by central stairwells; the stairs were contained in the distinctive towers at each end of the building. It was one of the first large mills to be built with a shallow gable



Front wall of the Richard Borden No. 1 Mill in the midst of collapse. Photograph courtesy Providence Journal-Bulletin.

roof instead of the traditional steeply pitched mill roof. Ironically, it was also one of the first mills to be equipped with automatic sprinklers; sprinklers were installed in the Borden Mill even before Factory Mutual Insurance advocated their use.

Located near Fall River's Government Center, the Borden Mill No. 1 recently had been the subject of an adaptive reuse study and plan. According to Vivienne Lasky [SIA], the city's preservation planner, the mill was to have been a major component of a multiple resource nomination to the National Register now in preparation. S. V.

The *SIA Newsletter* is published four times a year (Winter, Spring, Summer, and Fall) by the Society for Industrial Archeology. It is sent to SIA members, who also receive the Society's journal, *IA*, published annually. SIA promotes the identification, interpretation, preservation, and reuse of historic industrial and engineering sites, structures, and equipment. Annual membership: individual, \$20; couple, \$25; institutions, \$25; contributing, \$50; sustaining, \$100; student, \$12. Send check payable to SIA to Treasurer, Room 5020, National Museum of American History, Smithsonian Institution, Washington, D.C. 20560; all business correspondence should be sent to that office. Editorial correspondence should be sent to CAROL POH MILLER, Editor, *SIA Newsletter*, Program for the History of Science & Technology, Mather House, Case Western Reserve University, Cleveland, Ohio 44106.

"THE MINING LIFE: COAL IN OUR HISTORY AND CULTURE" tells the story of coal mines and the mining community of W. Va. The exhibit allows visitors to walk through an 1890s coal mine and become acquainted with the miners themselves and their historically tight-knit communities, then follow the course of events in the coalfields of the 20th c. The exhibition is on display through Apr. at Huntington Galleries, Park Hill, Huntington, W. Va. Information: Carolanne Griffith, Director of Information Services, Dept. of Culture & History, Capitol Complex, Charleston, W. Va. 25305; (304) 348-0220.

THE CENTER FOR CANAL HISTORY & TECHNOLOGY was established in Nov. 1981 by the Friends of the Hugh Moore Park in Easton, Pa., to encourage research and to promote preservation of archival materials pertaining to the history of canals and their related technologies. The Center will host an annual symposium and plans to publish a semi-annual newsletter and other occasional publications. The proceedings of this year's symposium, held Jan. 30th, will be available for purchase. Annual membership is \$25. Information: Lance Metz, CCH&T, 200 S. Delaware Dr., P.O. Box 877, Easton, Pa. 18042; (215) 258-7155.

THE FRIENDS OF THE HISTORIC AMERICAN ENGINEERING RECORD, led by Neal FitzSimons [SIA], is collecting funds to establish an American Society of Civil Engineers/HAER prize for the best documentation meeting HAER standards of a historic engineering site or structure. The first prize will be awarded in 1984 when HAER celebrates its 15th anniversary. For more information or to contribute to the prize fund, write: Neal FitzSimons, 10408 Montgomery Ave., Kensington, Md. 20895.

THE APT ANNUAL CONFERENCE will be held in Banff, Alberta, Oct. 24-27. The Association for Preservation Technology is an international organization dedicated to the science and technology of the preservation of historic resources. This year's conference theme is "The Maintenance and Stabilization of Historic and Cultural Resources." Information: Walter Jamieson, Faculty of Environmental Design, Univ. of Calgary, 2500 University Dr., NW, Calgary, Alberta, T2N 1N4.

THE FRIENDS OF CAST IRON ARCHITECTURE still has available several sets of its 35mm color slides of cast-iron architecture in N.Y.C. The price for 17 slides is \$26.25 ppd. Send check to: FCIA, 235 E. 87th St., N.Y., N.Y. 10028.

THE VERNACULAR ARCHITECTURE FORUM was formed in 1980 to encourage the study and preservation of all aspects of vernacular architecture and landscapes through interdisciplinary and multidisciplinary methods. Members receive the quarterly *Vernacular Architecture Newsletter* and advance notice of VAF conferences and tours. For membership (\$9 active, \$5 student), write: Ellen Cox, 406 Second St., Annapolis, Md. 21403.

THE MILL HUNK HERALD, "Pittsburgh's Democratically Run Press," carries articles by the "rank and file." Now three years old, MHH bills itself as "a quarterly magazine for the reports, opinions and stories of the average person" and carries occasional features of IA interest. Some samples from recent issues: "Steel, Muscle and Blood," a first-hand account of life inside the Basic Oxygen Process Shop ("One job almost no one wants in the BOP Shop is stopper maker. John Beecher has written a little poem about it: the stopper maker / puts a sleeve brick on an iron rod / then a dab of mortar / and then another sleeve brick / and another dab of mortar / and when he has put fourteen sleeve bricks on / and fourteen dabs of mortar / and fitted on the head / he picks up another rod / and makes another stopper . . ."); "Murals and Miners in Millvale" ("Rediscovered Murals Leave Haunting Images of Immigrants and Industrialists"); "Blue Collar Worker: Endangered Species?"; and "Life as a Tool Maker." Cost is \$3 for a one-year subscription. Write: MHH, 916 Middle St., Pittsburgh, Pa. 15212.

THE 6th INDUSTRIAL ARCHEOLOGY INSTITUTE will be held at the Univ. of Vermont, July 19-23. The 2-cr. course will be conducted by Eric DeLony, HAER Principal Architect; Robert M. Vogel, Curator of Mechanical & Civil Engineering, Smithsonian Institution; and Helena Wright, Librarian, Merrimack Valley Textile Museum [all SIA]. The IA Institute instructs preservation professionals, historians, architects, and part-time enthusiasts to recognize, evaluate, and document historic industrial sites and engineering structures. The focus of the course is a hands-on experience of recording an industrial site—this year the circular cutting shed of the Savard Granite Co. in Barre, Vt. There also will be lectures, discussions, and films on inventory and recording techniques, historic documentation, adaptive reuse, and preservation. The course is limited to 25 students. Information and application: IA Institute, Continuing Education, Grasse Mount, Univ. of Vt., Burlington, 05405.



Students at last summer's IA Institute record Boring Machine No. 3 at the Grearson & Lane granite turning shed in Barre, Vt. HAER photograph by Eric DeLony.

BIBLIOGRAPHY OF THE HISTORY OF CIVIL ENGINEERING. Garland Publishing, Inc., is currently publishing a series of book-length bibliographies on the history of science and technology under the general editorship of Robert P. Multhauf [SIA] and Ellen B. Wells. Yet to be covered is civil engineering, for which a compiler is sought. If interested, contact: Ellen Wells, Dibner Library, National Museum of American History, Washington, D.C. 20560; (202) 357-1568.

"THE ARTS AND INDUSTRIALISM" will be the topic of the third annual Lowell Conference on Industrial History, to be held on Apr. 30 and May 1 at the Univ. of Lowell. Information: Robert Weible, Conference Chairman, Lowell National Historical Park, 171 Merrimack St., Lowell, Mass. 01852.

"RESTORATION OF HISTORIC CAST IRON IN CENTRAL PARK," an exhibition of drawings, photographs, and artifacts pertaining to the restoration of the Ladies Pavilion, the Bow Bridge, Bridge No. 27, Bridge No. 28, and Pinebank Arch will be on display through Mar. at the Dairy in Central Park (65th St., between the Zoo and the Carousel). Hours are Tues. through Sun., 10:00 A.M. to 4:30 P.M.

AVAILABLE

CHASE METAL WORKS PRINTS. As part of a promotional campaign, Howard P. Hoffman Associates produced an attractive print showing four early views of the Chase Brass & Copper Co. of Waterbury, Conn. Single copies of the print are available to SIA members at no charge from Irving E. Cohen [SIA], Howard P. Hoffman Associates, 100 Park Ave., N.Y., N.Y. 10017.

RESEARCH QUERIES

Bone mill refuse was uncovered last summer during excavations at the water-powered Blagden Bone Mill in Rock Creek Park, Washington, D.C. Information is sought on bone milling technology from the middle to the end of the 19th c. Illustrations, photographs, and descriptions of bone mills, their machinery, and the ways in which bones were prepared for grinding into fertilizer would be particularly useful. Susan N. Mayer, 3711 Hemlock Pl., Temple Hills, Md. 20748.

I am conducting a metallurgical analysis of nails excavated at Fort Michilimackinac, on the northern tip of Mich.'s lower peninsula. These nails are of three types: hand-forged, of French origin (1715-1781); hand-forged, of British origin (1781-1812); and machine-cut, of American origin (1812-1850). The purpose of the study is to correlate possible differences in chemical composition which might allow definite dating of the levels at which the nails are found. I am seeking information on the history of nail manufacture in the U.S. and in 18th-c. England and France. Information on techniques of wrought iron and nail manufacture, ore sources, and ore refining methods would be of great benefit in my research. David J. Frurip, 9S260 Nantucket, Darien, Ill. 60559.

During the past year, the Historic American Engineering Record has received numerous inquiries from state and local transportation officials, engineering firms, and preservation groups for information on successful bridge rehabilitation, relocation, and adaptive reuse projects. At the moment, the number of examples that HAER can point to is small. Therefore, HAER is anxious to receive slides, photographs, and specific information on the logistics and costs of such projects. HAER hopes to maintain a clearinghouse of information to assist others involved in historic bridge preservation. Eric N. DeLony, Historic American Engineering Record, National Park Service, Washington, D.C. 20240; (202) 272-3542.

George Kent Radford, civil engineer and sometime architect, in 1854 was awarded the first premium in competition for his proposal for a water supply system in Toronto, shortly after he had arrived in Canada from England. Defending his design against criticism, he said his English practice had involved him in eleven previous waterworks projects. His whereabouts are not known between ca. 1858, when he left Toronto, and 1871-72, when he was employed by Olmsted, Vaux & Co. on topographical surveys for South Park, Chicago. Radford was Calvert Vaux's partner from 1874 to 1892, and may have moved from N.Y. to Calif. in the 1890s. The place and date of his death are not known. Any information to permit completion of a biographical entry on his career would be welcome. Stephen Otto, 161 Crescent Rd., Toronto, Ont., M4W 1V1.

SIA AFFAIRS

SOCIETY GIFT. Ezra and Eleanor Curry of St. Paul, Minn., have given the SIA a check for \$500, to be used without restriction. The Currys were pleased with last issue's tribute to their son, Field, who died last Sept. They wrote, "It is comforting to know that in the opinion of his peers Field served the SIA with ability and distinction." The gift has been added to the Society's publications fund.

CHAPTER NEWS

MONTGOMERY C. MEIGS ORIGINAL. On Oct. 28, an address on "The Industrial Archeology of France" by Eric DeLony, principal architect for the Historic American Engineering Record, highlighted an evening devoted to extra-regional IA. Robert Vogel followed with a slide account of the Northern New England chapter's outing to a brickyard-*extraordinaire* [SIAN Fall 81:10]. DeLony also gave a report of the proceedings at the Fourth International Conference on the Conservation of the Industrial Heritage held in France (see article this issue), to which

he was a delegate. On Sun., Nov. 22, the final chapter event of the year took a dozen or so faithful to William W. Willock's private mechanical museum on the Eastern Shore of Md. Willock's collection of industrial hardware and vehicular steam—and his fund of antiquarian lore—impressed all with its depth and range. *D.H.S.*

ROEBLING. We had an excellent turnout for the Dec. 12 field trip. In the best tradition of Chinese cuisine, participants were able to choose parts A or B, or both! Twenty-four attended the tour of the Hercules Powder Plant (part A) in Kenvil, N.J., and twenty-seven were with us for a visit to the Long Pond Furnace site (part B) in Ringwood.

Our thanks, first of all, go to chapter member Charles Durfee, chief engineer of the power plant at Hercules, who arranged the morning tour. Charles is currently in the process of refurbishing three unused coal-fired furnaces (due to the economics of oil!), which will enable Hercules to resume generation of electric power; the oil-fired boilers now in use are inadequate for this purpose. We were able to inspect the boilers as well as the three steam turbogenerators which are presently inoperative. We also inspected the active portion of the power house. The plant generates steam for heating (used in enormous quantities; due to the explosive atmosphere, heated fresh air must be blown through the buildings continuously. The plant also operates its own water pumping and treatment equipment, an ammonia refrigerant plant (used in making nitroglycerine for smokeless gunpowder), and a pair of cross-compound steam air compressors. One of these was in operation during our visit. Most impressive were the water pumping systems: one operates at 250 psi, the other at an unbelievable 3200 psi! The higher pressure is produced by three motor-driven reciprocating pumps and is used to power the two-story-high powder presses. As a bonus, we were able to inspect a collection of model operating steam engines built by Mr. Durfee. Finally, we got a look at the narrow-gauge railroad that operates over 15 mi. of track in the plant.

At Ringwood, chapter member Ed Rutsch gave an introduction to the iron industry of the area, illustrated by the artifacts which are gathered on the front lawn of the mansion. We then visited the Long Pond site to view the work that Ed has been doing under a state grant. The site contains the remains of an 18th-c. furnace and forge, two 19th-c. furnaces, and several water wheels and races.

Much of Ed's work has been directed at locating the 18th-c. forge, which apparently stood on an island in the river. Ed stressed the process of historical investigation and conjecture, the "thinking in reverse" that must precede any attempts at digging. At this point, Ed believes that he has established the location of the original dam and one of the raceways and is waiting for spring to continue his work.

We also got a look at the remains of the 18th-c. furnace and the extensive ruins of the 19th-c. furnaces. Work has been done to locate the foundations of the ancillary buildings and to establish the site's methods of operation. Ed pointed out that before any further digging can go on, the problem of stabilizing what is evident must be solved. This is most pressing for the 18th-c. furnace and the water wheels that powered the blast machinery for the 19th-c. furnaces. Ed closed the afternoon with a discussion of appropriate ways to conserve and display the site for future generations. *T.T.*

CONTRIBUTORS TO THIS ISSUE

Brenda Barrett, Pa. Historical & Museum Commn.; David C. Daruszka, Chicago; Eric Johannesen, Theodore A. Sande, Western Reserve Historical Society; David H. Shayt, National Museum of American History; Julius Simchick, Ohio Historical Society; David R. Starbuck, Univ. of N.H.; Mark C. Stauter, Univ. of Mo. at Rolla; Thorwald Torgersen, Hackettstown, N.J.; Steven K. Victor, New Haven, Conn.; Robert M. Vogel, NMAH.

DEPOTS

The **Harrisburg, Pa., Railroad Station** [NHL, HAER] will be transformed into a modern multimodal transportation center. Engineering and architectural studies for the \$7.2 million station renovation have been made by Harry Weese & Associates. The station's two 60-ft.-high trainsheds will be structurally evaluated. Each originally measured 540 ft. long and 90 ft. wide. That nearest the station was built in 1886, the other in 1896. Both employed steel-and-wood Fink roof trusses. Only a dozen long-span truss-roofed trainsheds of this type are known to exist.

Major renovations have begun to transform the decaying **Lambertville, N.J., Railroad Station** into a \$1.5-million restaurant and motel complex. The new Lambertville Station restaurant—serving American "steaks and chops" cuisine—will open this spring, according to a spokesman for Targa Enterprises, the Philadelphia-based investment group that purchased the station from the Penn Central Corp. last fall. Targa plans to construct a 46-unit motel behind the station after the restaurant is completed. Workers have gutted the interior of the 2½-story stone building, which has been used for storage since passenger service on the Belvidere-Delaware Divn. of the Pennsylvania RR ended 20 years ago. The station was designed by Thomas Ustick Walter, who also designed the dome of the U.S. Capitol.

The Civic Theatre of Greater Lafayette, Ind., recently moved into its new home: Lafayette's 80-year old **Monon Depot**. The theatre group conducted a successful fund-raising drive to finance the move. "We stressed three themes," one prominent business leader said, "assisting an important cultural organization to find an adequate facility, preserving a valuable piece of Lafayette architecture by recycling it, and contributing to revitalizing our downtown by developing this small multipurpose auditorium for use by many groups besides the Civic Theatre." According to one of the project's consultants, the theatre's new facility cost "a fraction" of what it would have cost to build a comparable facility from scratch.

Finally, the following musings on an unidentified depot first appeared in, of all places, *Better Homes & Gardens Magazine* of July 1981. We are grateful to Robert M. Frame III [SIA] for bringing this piece, written by BH&G Editor Burton Hillis, to our attention:

One of my favorite paintings is no famous Rembrandt or Picasso. It's a local artist's rendering of our town's railroad depot in its heyday. Chris spotted the canvas at an auction several years ago, and now the painting hangs in a reading room at the library where she works.

I like the scene because it depicts the old depot the way it should be remembered—when steam engines belched their way through town, and most visitors came and went by rail. Back then, the arrival of a train—any train—was reason enough for a youngster to drop everything and race pell-mell to the depot platform.

The railroad tracks are still in use, but only one train, a night freight, stops these days. The old depot is there, too, although it has been boarded up for years, and the visible evidence suggests that vandals have been its principal patrons in recent years.

There's been a community drive this summer to rescue the depot, since the property has been sold and the building can't remain in its present site beside the tracks. Some civic-minded folks propose to jack up the depot, haul it across the freeway, and replant it in a municipal park where it presumably will be safe for posterity. In fact, I've agreed to help with the fund-raising drive.

I applaud the rescue efforts, for we need to preserve what little evidence we have of bygone days. Although a depot without railroad tracks and at least an occasional train rumbling by is like a Fourth of July parade without a band, it's still better than no parade at all.

All of which makes me very happy there was an artist around a few years ago who took the time to record the real scene at the local depot before it faded and was forgotten.

YOUNGSTOWN IRON & STEEL MUSEUM ESTABLISHED

The idea of establishing an Ohio Historical Society museum facility in the Youngstown area has been under discussion for at least fifteen years. In 1977 the Ohio General Assembly, largely through the efforts of State Senator Harry Meshel, passed a bill including a line item appropriation that provided the Society with funding to begin development of a museum in the Mahoning Valley. To coordinate these efforts and insure efficient planning, an Office of Planning was established at the Ohio Historical Center in Columbus, and early in 1978 the Youngstown Planning Office was opened in the heart of that city. A local project coordinator and a small research and secretarial staff were hired.

A variety of possible museum programs were explored. An examination of the history of the Mahoning Valley showed that the development of the steel industry and the subsequent development of the valley were intimately connected. The historical development of the Mahoning Valley not only paralleled the historical development of the American iron and steel industry, it was one of its most vital segments. Steel is the heritage, the "roots" of the Mahoning Valley, yet while most people are aware of this, surprisingly few know how steel is made and even fewer know how or why the industry developed along the banks of the Mahoning River.

The program of the Youngstown Iron & Steel Museum will be a diversified one. The museum will examine the making of iron and steel, as well as the development of the industry both within the Mahoning Valley and nationally. It will deal with the human dimensions of the steel industry, examining the interrelationships between the development of steel and the development of the Mahoning Valley as a place to work and live.

The museum will be built on a twenty-acre parcel that formerly was part of the Youngstown Sheet & Tube Co.'s Brier Hill Works. Hunt Energy Corp. is donating the land and the structures on it to the historical society. Located on the site is a complete iron-producing facility including a blast furnace, eight heater stoves, two cast houses, a blowing engine house, stock house, ore yard, and boiler house, as well as railroad trestles and

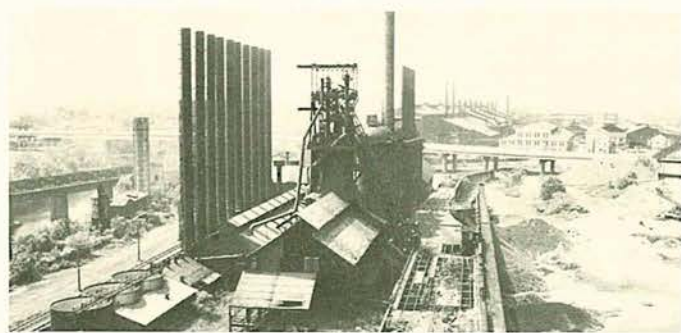
other small structures. The site is a historically important one, having been first developed during the Civil War by Ohio Governor David Tod, one of the founders of the Brier Hill Steel Co.

The furnace, named "Jeanette" after the daughter of Brier Hill Steel president W.A. Thomas, was erected in 1917-1918. It was designed and largely built by the Brier Hill Steel Corp., which merged into the Youngstown Sheet & Tube Co. in 1923. The Jeanette furnace originally was supplied with hot blast air from three stoves, which later were increased to four. These are standard 5-in. checkered brick with side combustion chambers of the "2-pass" design; they stand 105 ft. high and are 23 ft. in diameter. Also on the site are four stoves from an earlier furnace, called "Grace," of an older McClure 3-pass design.

Acquisition and preservation of the Jeanette site assumes even greater significance when one considers that in the near future there will be no other blast furnaces left in the Youngstown area. Because of their value as steel scrap, every non-operating facility will be disassembled and fed into basic oxygen furnaces to make new steel, the same way the old Bessemer plants gradually vanished. Within the next few years the skyline of the Youngstown area, once distinguished by the silhouettes of twenty-seven blast furnaces, will be flat.

In order to enhance the educational impact of the museum, plans also call for the creation of an archives. Although the details have not been worked out, it is hoped that Youngstown can become the location of not only a unique museum but a center for research devoted to the development and growth of the steel industry.

The Youngstown Iron & Steel Museum will enhance the general public's understanding of the iron and steelmaking process, as well as its knowledge of the history, development, and eventual demise of the industry in the Mahoning Valley. No less importantly, the museum will preserve on its original site an early blast-furnace complex that otherwise almost certainly would have been sold for scrap. *J.S.*



Site of the Youngstown Iron & Steel Museum, formerly the Brier Hill Works of the Youngstown Sheet & Tube Co. At center stands the "Jeanette" furnace, abandoned in 1977. View is looking west. *Ohio Historical Society photograph by Julius Simchick.*

IA IN ART: "The Steelmakers"

Sculptor George Segal's "The Steelmakers" is a tribute to the steel industry and the historic role it has played in the economy and daily life of Youngstown. Segal has depicted two steelworkers laboring at an open hearth furnace. On a visit to Youngstown shortly after receiving the commission, Segal was struck by the dynamism of steel furnaces at work:

The open hearth scenes were spectacular—gloomy darkness, hissing steam and smoke, urgent foghorns . . . railway cars moving fluidly in all directions—the awesome pour, light you can't look into, heat sparks hugely bigger than we are and dangerous unless you move exactly right. This reality is more fantastic than the most fevered imaginings . . . I found the look of the furnaces and people of Youngstown to be staggeringly impressive.

The tableau was created with the aid of two steelworkers having a combined seniority of fifty years in the mills. The figures were cast from life using plaster and burlap and later cast into bronze. The sculpture, dedicated on May 14, 1980, represents the culmination of a four-year campaign by the Youngstown Area Arts Council to acquire a major work of sculpture for the city's new Federal Plaza pedestrian mall.



Sculptor George Segal poses with "The Steelmakers" prior to its installation on Federal Plaza in Youngstown. *Youngstown Area Arts Council photograph.*

THE FOURTH INTERNATIONAL CONFERENCE ON THE CONSERVATION OF THE INDUSTRIAL HERITAGE LYON AND GRENOBLE, FRANCE, SEPT. 14-20, 1981

The conference formally convened at Lyon on Tues. morning in the Salle Cordelier of the Palais du Commerce with approximately 175 participants from 26 nations. Under the patronage of the Prime Minister of France, Pierre Mauroy, the French hosts gave the conference the highest governmental endorsement. Throughout the five days of tours and conference sessions, delegates were welcomed by regional and local officials, who were surprisingly well informed about the field of industrial heritage conservation and who reaffirmed its importance among the issues that they considered within the realms of environmental control and historic preservation.

Following the morning's session of ceremonial greetings and an opening address by the chairman of the International Committee, a buffet luncheon was served at the Fondation Nationale de la Photographie, which is located in a grand late 19th-c. town house in a Lyon suburb. The house was built by the Lumiere family, pioneers of modern photography and cinematography. A fascinating exhibit of photographs titled "100 Years of Factories" had been mounted for the occasion. The delegates then divided into three groups for afternoon tours. One tour concentrated on sites of the chemical industry, a second dealt with metallurgy, and a third covered the silk trade. All gathered afterward at the town hall and from there journeyed by bus to Marcy-L'Etoile, outside Lyon, for a sumptuous dinner sponsored by the Association of the Friends of the University (Lyon) at the renowned Merieux bio-medical laboratories. M. Merieux was present and introduced a film highlighting the world-famous achievements of his establishment.

Wed. morning began two days of excursions. Four tours were offered: one to the Loire; one to the Alps; one to the Franche-Comte region; and one to the Le Creusot/Monceau-Les-Mines area.

On Thurs. night the various tours met at Grenoble for 2½ days of working sessions and the General Assembly of the International Committee. The individual sessions were held simultaneously and were organized under three main themes: knowledge of the industrial past and technical progress; the readapting of industrial buildings and town history; and anthropology and industrial civilization.

On Sat. afternoon the General Assembly addressed itself to the principal business of the International Committee, namely, the election of officers and consideration of the next conference location. In accordance with the Statutes, one-third of the Board was required to retire. This was accomplished quite smoothly since the Chairman, Theodore Sande, previously had indicated his intention to step down, as had Wolfhard Weber of the Federal Republic of Germany and Phillippus Bosscher of the Netherlands. Elected to the Board were: Helena Wright [SIA] (USA) as North American representative; Werner Kroker (BRD) as Western European representative; and Dominique Ferriot (France) as representative-at-large. The new Chairman, selected

from the Board, is John Harris (UK). There was considerable, often heated, discussion as to where the next conference should be held. Offers were received from Austria and the U.S., but it was soon evident from the debate that agreement could not be reached, and the matter was referred to the Board for a decision following the precedent of the first Board following the Swedish conference in 1978.

Although this conference did not achieve the level of organizational efficiency the Swedes had set as a model in 1978, it was, nevertheless, a useful opportunity for those with mutual and serious interests in the industrial heritage and its conservation to come together and share their experiences and knowledge.

A brief review of the reports from corresponding associates covering the three years since the Swedish conference suggests the impressive amount of activity worldwide and the desirability of international meetings held every three or four years:

A Department of Industrial Archeology has been established in the Institute of History of Art and Conservation of Monuments and Sites of the Technical University of Vienna, Austria. This raises the study of the industrial heritage in that country to the highest academic level and provides a distinctive opportunity for the exploration of theoretical issues in the field.

The Belgians have been especially active in forming conferences on specialized topics in the field. In Aug. 1980, they convened an extremely successful conference on Textile Machinery at Diepenbeek [SIAN Winter 81:5-6]. Future conferences will include one on the mining heritage at Limberg (Feb. 1983) and a conference on the distilling industry in Hasselt (Sept. 1982) that will coincide with the 800th anniversary of that city.

In 1979, the Danish Association for the Study and Preservation of the Industrial Heritage was formed. This group has over four hundred members and is active in publishing a periodical called *Fabrik og Bolig* (Factory and Housing). In the summer of 1980, the National Museum of Denmark mounted an exhibit titled "Man and Machine."

The British, of course, are the founding fathers of industrial archeology. In addition to numerous local societies that undertake survey and recording projects, the Institute of Industrial Archaeology was established in 1978 under the Dept. of Economic and Social History and the Faculty of Social Science of the University of Birmingham as a diploma-granting program.

In Finland, an unofficial national group on industrial heritage conservation has been formed. There have been research projects, including one on the Finnish iron industry that was supported by the industry itself. The Finnish Museum of Architecture in 1979 held an exhibition of industrial architecture and produced quite a handsome catalogue of the show. Other exhibitions are planned, including one on working-class housing and one on railway architecture.

In France, the development of *CILAC*, the committee for the exchange of information and the establishment of relationships on archeology and the study of the environment and heritage of industry, is an important step in French industrial archeology. This organization provided the main support for the Fourth International Conference. In Hungary, the Western Railway Station (1874-1877) by Gustav Eiffel has been restored, and there are efforts to designate a paper mill in Dunaujváros as a historic monument. The Italians have produced several impressive publications, in particular the periodical *Archaeologia Industriale*.

In Japan, the Japan Industrial Archaeology Society now has an active membership of five hundred, with five subcommittees on industrial fields, and it has held several conferences and publishes a newsletter. In 1979, three industrial museums were established dealing with tobacco and salt, distilling, and textiles. There are plans by the government for a large industrial museum and a science museum.



ICCIH participants observing the water wheels at La Taillanderie (Edge Tool Works) de Thilbert, Nans-Sou-Sainte-Anne, France. Eric DeLony photograph.

There are plans in the Netherlands for conversion of a textile mill at Enschede to a regional textile museum, and a pumping station on the Zuyder Zee is being converted to a museum of steam technology.

W.A. McCutcheon of the Ulster Museum at Belfast, Northern Ireland, recently published a book on industrial archeology. In Norway, a cellulose and paper mill, Klevfoss, at Hamar is being restored. This is believed to be the first instance of preservation of this industry in Scandinavia. Under study is preservation of a Norwegian mining site dating back to the year 1500.

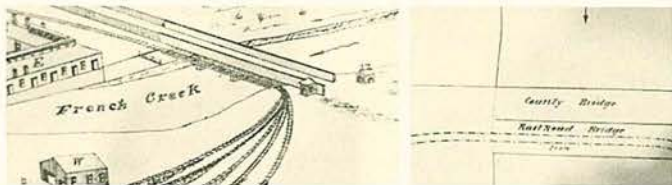
In Scotland, progress has been made in recording industrial sites through the National Industrial Archaeology Survey Unit based at Strathclyde University. It has undertaken a comprehensive survey of the brick and tile industry, timber and iron bridges, harbors and piers, watermills, windmills, and other industrial sites and is now preparing a recording manual. The Royal Commission has undertaken surveys of a woolen mill at Islay, Argyll, which contains important early textile machinery, and has proposed surveys of a beam engine, distilleries, and various engineering shops near Glasgow. The Swiss have been publishing a fine newsletter under the title *Industriearchäologie*. T.A.S.

Editor's Note: A report on American activities in industrial archeology from 1978 to 1981, published as one of the National Reports of countries represented at the Fourth International Conference, has been reprinted and appears as a supplement to this issue of SIAN. ICCIH '81 Proceedings are available as follows: The complete schedule of the individual working session papers may be requested from SIA Hqtrs., Rm. 5020. The volume of National Reports may be ordered from CILAC, 48 Rue St. Lambert, 75015 Paris, France, for 100FF or the equivalent.

MORE ON A FINK TRUSS

In the Sept. '79 SIAN [p. 2] we noted the existence in Phoenixville, Pa., of a Fink truss bridge consisting of three spans and a single line of deck trussing. The structure clearly had been grafted to the side of a pre-existing masonry-arch bridge of 1847 for the apparent sake, we reported, of accommodating a sidewalk—its present use.

Now anyone should have realized that this made no sense at all, i.e., the considerable expense of an iron bridge expressly to separate pedestrians from wagon traffic. The real and far more rational original purpose of the bridge emerged recently quite by chance during the course of another investigation. The details from the map and view of the Phoenix Iron Works in the Heximer insurance survey atlas for 1866 (the earliest available for the site) reveal the truth. R.M.V.



The SIA Newsletter is published with the support of the Program for the History of Science & Technology, Case Western Reserve University, Cleveland, Ohio.

TRUSS BRIDGES ENDANGERED SPECIES IN ONE MISSOURI COUNTY

Voters in Jefferson Co., Mo., have overwhelmingly approved a bond issue that could mean the demolition of up to sixteen old metal truss highway bridges within the next three years. Increasing urbanization of the area, which adjoins populous St. Louis Co., has rendered the aged one-lane spans inadequate for current traffic volume and weight. No provision was made in the bond issue for preservation of the old bridges, and they likely will be sold for scrap.



VFW Road Bridge spanning Platin Creek near Crystal City (Jefferson Co.), Mo. Photograph courtesy Jefferson Co. Democrat-Rocket.

The majority of the endangered spans are unremarkable Pratt trusses of limited technological or historical interest, but one is a fine variant of the "Pennsylvania" through truss. Spanning the Big River at Cedar Hill, the 230-ft., single-span Cedar Hill School Rd. Bridge was erected in 1907 by the Virginia Bridge & Iron Co. of Roanoke. It is located in a park-like setting near a mill and dam, now in ruins. During summer months, it majestically frames a scene of picnickers, swimmers, and sunbathers enjoying relief from the state's notorious heat and humidity. Fire trucks and other heavy vehicles, however, must make a 2-mi. detour to reach the other side of the bridge, and local officials believe there is no other convenient site for a new structure. The demolition contract for the bridge is to be let this spring.

Another span of historical interest facing imminent destruction is the "Buck Knob," or VFW Rd. Bridge near Crystal City. This Pratt through truss spans Platin Creek near Philippi Falls, where the famous "El Camino Real" of the Spanish colonial period forded the stream. Even though the replacement span will be located at a different point, the old bridge will not be preserved unless a private individual or group assumes responsibility for its maintenance and (non-vehicular) use, which seems unlikely.

The picture is not entirely bleak, however. When the Windsor Harbor Bridge at Kimmswick was scheduled for replacement with the aid of a \$400,000 federal grant, the Kimmswick Historical Society, which is leading an effort to restore the old Mississippi River town to its steamboat-days appearance, stepped in to preserve the span. Notable for its decorative end posts, this Pratt through truss will be maintained for pedestrian and bicycle traffic. A similar solution has been proposed for the Pratt through truss at Byrnesville, where the owner of the adjacent millsite has asked that custody be transferred to him upon completion of a replacement bridge.

The requirements of modern traffic likely will bring about the eventual abandonment of most of the old metal truss bridges, which antedate widespread use of the automobile. Some Missourians, however, hope that at least a representative sample of the spans can be saved. M.C.S.

Editor's Note: The writer, Mark C. Stauter, is conducting an informal survey of truss bridges in southern Mo. (the Ozarks). He plans to prepare a slide show of his findings for presentation to local historical societies and other groups.

MISC. SITES & STRUCTURES

Under a Coast Guard efficiency plan begun in 1966, yet another romantic figure of time—the lighthouse keeper—was marked for displacement by automation. The plan called for human-less **lighthouses** everywhere in the country by the mid-1980s.

So far, says Lieut. Walter Johnson, the program's manager in Washington, 327 of the 387 installations have been automated. Only one hitch.

"We found out," the lieutenant says, "that because of vandalism, the weather and things like that, the appearance of the lighthouses and their structural integrity weren't kept up."

"What we're trying to do now is just get people to live there, not to take care of the light so much but to mow the grass, give it a painting occasionally and cut down on vandalism." *The New York Times*, Oct. 4, 1981

The 1888 brick **gasholder house** in Concord, N.H., is one of the most intact surviving gasholders in the country [SIAN Sept./Nov. 80:9]. A formal meeting of interested parties was held in Concord on July 27 to discuss steps that might be taken to conduct a HAER recording project at the site. Cedric Dustin of the Concord Natural Gas Corp. gave his permission for the project, and it is anticipated that recording will get under way this summer. William Taylor of Plymouth State College was chosen to coordinate local efforts and fund raising, and members of the Northern and Southern New England chapters of the SIA hope to play an active role in recording the structure. *D.R.S.*

Margot Gayle [SIA], president of the Friends of Cast Iron Architecture, reports that in St. Louis, Mo., Kimble Cohn has set a model in the restoration of the former **Peper's Tobacco Co.**, a large iron-fronted building near the Eads Bridge. Every missing decorative element on its iron facade has been replaced. In N.Y.C., Central Park's **Bridge No. 28** has been restored. Rolled steel beams have replaced the rusted wrought-iron beams, embankments have been restored and landscaped, and lost decorative iron elements have been recast. FCIA members contributed \$2000 toward the restoration.



New England Glassworks, furnace foundation in the glasshouse. *David Starbuck photograph.*

Between 1975 and 1978, Boston University conducted excavations at the **New England Glassworks** in Temple, N.H. The site, dating from 1780 to 1782, included industrial structures and a small workers' village of at least three houses. The excavated furnace foundation, located in the center of the glasshouse, appears to be a 17th-c. German design not previously documented in this country.

The excavation was one of the most extensive ever undertaken at an industrial site in this country, and artifact analysis has continued since 1978. The project report has been submitted to the granting agency, the N.H. State Historic Preservation Office. As documented in the report, this factory produced the first crown window glass manufactured in America, as well as bottles of several sizes, small vials, and possibly glass tubing. Efforts are under way to preserve and exhibit the site. *D.R.S.*

Follow-Up on the News

Following a prolonged brush with death, all now appears well for the future of Chicago's 1897 downtown **elevated Loop** [SIAN May 79:1; SIAN Supplement, Sept. 79]. A federally approved master plan has issued from city hall calling for a \$100 million top-to-bottom restoration and renewed faith in the logic and solid engineering behind the mid-town elevated rail system.

Local architect Harry Weese led an army of Loop-lovers in a campaign to save the structure. Work is expected to begin this year. Corrugated plastic awnings will be stripped away, returning the riveted steel to its former grandeur, and some stations will be relocated near bus stops and department stores. Welded rail and the addition of some shock-absorbing elements will help tone down the Loop's characteristic clatter. (One observer has described it this way: "Imagine stepping on a hundred cats' tails in a glass-grinding factory and you have some idea of the sound it emits at deafening levels while trains round its curves.") The alterations have the blessing of the Urban Mass Transit Administration, which guarantees that the historical integrity of the Loop will not be jeopardized. A detailed structural survey is now under way.

As with so many industrial preservation successes, the Loop spells its relief E-C-O-N-O-M-I-C-S. Mayor Daley's plan for a subway under a Loopless downtown finally was scrapped due largely to multibillion dollar estimates rising by the day. The advantages of keeping the el rose in direct proportion. In the end, the Loop's proven people-moving capacity, the comparative costs of tearing it down and building a new system, and the tough Sandburgian identity it gives the city won the day. *D.H.S.*

The **Chicago & North Western Station** [SIAN Mar. 80:1, Winter 81:6] has been denied landmark status by the Commission on Chicago Historical & Architectural Landmarks. In a Mar. ruling, the Commission found that the station failed to meet any of the ten criteria necessary to qualify it for municipal landmark status.

The decision ended a 1½-year effort by a citizens group, The Friends of the North Western Station, to have the terminal complex designated. The station previously had been turned down for listing in the National Register by the Ill. Dept. of Conservation.

The Beaux Arts-style stub-end terminal is noteworthy for its extensive use of the Guastavino tiling system in the headhouse waiting room and former public court. In its decision, the Landmarks Commission cited alterations made in the 1960s, which closed off the main entrance and public court, as having destroyed the integrity of the building. They also cited the lack of any innovative architectural achievement in its construction, classifying it as a "pedestrian" execution of the Beaux Arts style.

The denial by the Commission clears the way for demolition of the headhouse sometime in 1982. It will be replaced by a new commuter terminal topped by a 38-story office building designed by architect Helmut Jahn. The Bush-type trainshed will remain to serve as a temporary station during demolition and construction. *D.C.D.*

Last issue [p. 11], we noted that the deteriorated **Stone Arch Bridge** in Champaign, Ill., had been listed in the National Register of Historic Places. Bruce Hannon [SIA] writes that the bridge "is being carefully rebuilt from the original stone by volunteers from the local brick masons union." For details, write: Robert Toalson, Champaign Park District, Champaign, 61820.

Editor:

This letter is prompted by the melancholy story of the Gardner Machine Shop auction [SIAN Spring 81:3] . . .

I have a somewhat similar situation. In the course of my business I have acquired an EMV 1 vacuum unit built by RCA in 1946 as an adjunct to their electron microscope. It was the first production unit designed for shadow casting. The purpose of this technique, the evaporation of a thin film of metal, was to render samples of biological and other materials visible to the electron beam.

While the science of electron microscopy does not enjoy the broad interest shown to machine tools, I have been hoping for the past two years to find an institution that could use the vacuum unit in an exhibit. Neither the Smithsonian nor the Chicago Museum of Science & Industry were able to accept it.

If there exists among the SIA membership anyone who would use it in an exhibit, I would be happy to donate it gratis. *Thomas L. Scatchard, Vacuum Equipment & Components, 841 N. Holly St., Philadelphia, Pa. 19104; (215) 222-1550.*

ARCHIVES & MANUSCRIPTS

Compiled by John Wickre, Minnesota Historical Society

Western Historical Manuscript Collection (Room G3 Library, University of Missouri-Rolla, Rolla, Mo. 65401). UMR, formerly the Missouri School of Mines & Metallurgy, is actively seeking archival collections related to mining and engineering. Among its recent acquisitions are:

George Cresswell Collection, 1847-1878, 6 folders. Includes ledgers, correspondence, and receipts concerning Cresswell's Furnace on Mineral Fork north of Potosi, Mo.

"Dressing Mill of R. Hazard, Mine La Motte," 1896, 23 pp. typescript. Description and mechanical drawings of an ore-processing plant at Mine La Motte, Mo., in operation 1876-97.

Harry C. Hood Collection, 3 folders. Copies of unpublished manuscripts by Hood on lead and zinc mining in SW Mo. and the Southwest Missouri RR.

St. Joe Minerals Corp. Collection, 1865-1974, 46 vols. (microfilmed). Business and financial records from mining concerns in the Old Lead Belt, incl. the St. Joseph Lead Co., the Doe Run Lead Co., and the Mine La Motte Corp.

Frank C. Wallower Papers, 1878-1966, 6 folders and 216 photographs. Photographs of lead and zinc mines near Joplin, Mo., ca. 1900-1930; and correspondence and newspaper clippings related to Wallower, who was a mine operator and manager of the Southwest Missouri RR Co.

University of Louisville, Archives and Records Center (Belknap Campus, University of Louisville, Ky. 40292):

Louisville & Nashville Railroad Co. Records, 1829-1981, 155 ft.

Nashville, Chattanooga & St. Louis Railway Co. Records, 1831-1959, 13.5 ft.

Monon Railroad Co. Records, 1847-1972, 4.1 ft. Corporate records, timetables, maps, drawings, films, photographs, radio discs, a "relic file," company magazines, and other materials related to the L&N and its predecessors, including the NC&StL (which merged with the L&N in 1957) and the Monon (merged 1972).

Elmer G. Sulzer Railroad Collection, 1839-1977, 110 ft. Maps, drawings, posters, rulebooks, manuals, timetables, reports, photographs, and other items from railroads in Kentucky, Indiana, and Tennessee; and misc. business records of the L&N, Louisville Ry., Monon, Louisville & Interurban, and other lines.

Albert Fink/Milton H. Smith Railroad Collection, 1827-1964, 23 ft. Printed materials including rare runs of annual reports of the B&O, C&O, Illinois Central, and Southern; and ICC and other government reports, pamphlets, and periodicals.

Milwaukee Public Library (814 W. Wisconsin Ave., Milwaukee, Wis. 53233):

Milwaukee Road Records, dates and extent unknown. The Milwaukee Road (formerly the Chicago, Milwaukee, St. Paul & Pacific RR) recently added a large collection of engineering drawings, annual reports, timetables, and photographs to its earlier donation to MPL of mechanical department records.

Great Lakes Marine Collection, ca. 1888-1981, 300 ft. Based on the Herman G. Runge Collection and continually expanded by the Wisconsin Marine Historical Society and MPL staff. Includes printed material, maps, charts, artifacts, and 30,000 photographs and other illustrations, all extensively indexed. Many of the files deal with individual ships, but there is also material on Great Lakes harbors, lighthouses, canals, and railroads.

Milwaukee Sentinel Index, 1837-1890. Includes entries for general subjects such as manufacturing, electric power, railroads, Great Lakes commerce, lumbering, and the paper industry, as well as names of specific companies engaged in such enterprises. Covers Wis. only.

The Historic American Engineering Record has transmitted to the Library of Congress 544 archival copies of HAER inventory cards and photographs of mining sites, structures, and landscapes, including residential buildings, in the **Virginia City/Comstock** area of Nev. Prototype for all frontier mining boom towns, the area was designated a National Historic Landmark in 1961. These materials are available for reference, research, and reproduction, without limitation, upon request to the LC. The LC suggests that interested parties first contact the Prints & Photographs Divn. (Washington, D.C. 20540; [202] 287-6399) to ascertain the availability of records, types of reproduction possible, and current charges for these services.

HAER records consist of measured drawings, photographs (both historic and contemporary), written historical reports, field notes, and inventory cards. A catalogue of the 514 sites and structures recorded between 1969 and 1975 is available from the Supt. of Documents, U.S.G.P.O., Washington, D.C. 20402, for \$3.50; request Stock No. 024-005-00665-6. Information on sites recorded after 1975 may be obtained from HAER, National Park Service, Washington, D.C. 20240; (202) 272-3527.

PREVIEW: 1982 ANNUAL CONFERENCE HARRISBURG, PA., MAY 7-9



Walnut St. Bridge, Harrisburg, Pa. Greg Ramsey photograph.

In the 1830s, central Pa. entrepreneurs came up with a bold scheme to canalize the Susquehanna River from Havre de Grace, Md., to the N.Y. state line. When hope for federal funding fell through the project was abandoned, and the river has remained a mile-wide, foot-deep barrier to smooth transportation ever since. It has inspired numerous bridges, railroads, and industries independent of water power as a prime mover.

SIA members will have an opportunity to see the physical remnants of all this and to observe firsthand the mixed industrial base of nearby York. The Fri. process tour will look at technological extremes, from the Harley-Davidson motorcycle assembly line to more traditional industries such as pottery and paper.

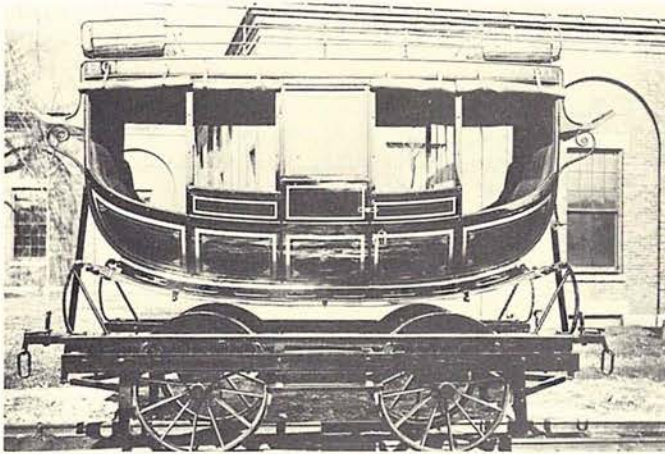
The Sat. paper session will feature an intensive session on Pa. industry. Following this, the traditional Sat. evening banquet will be held—location and entertainment to be announced. On Sun., SIA members will have a chance to look at Harrisburg's heritage, with railroads playing a starring role. See you in May! *B.B.*

THREE ORPHANS

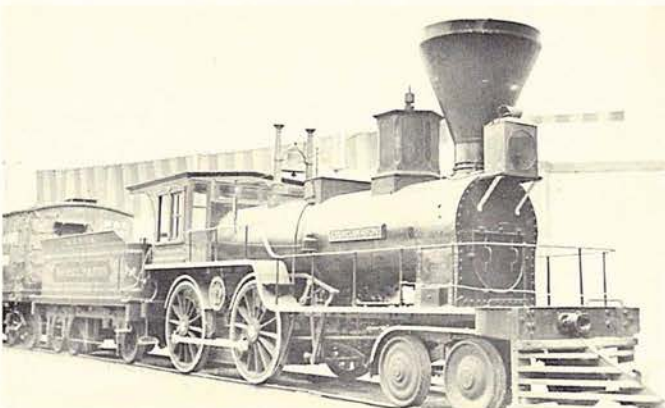
Ordinarily, the closing of a state fairgrounds would have no effect on industrial preservation. But the demise of the Danbury Fair in southwestern Conn. has made orphans of three pieces of historic railway equipment. They are an eight-wheel steam locomotive named the *Daniel Nason* (1858 or 1863), a four-wheel passenger car (ca. 1834), and a single-truck electric locomotive (1888). All were purchased from the New York, New Haven & Hartford RR in 1951 by the Fair's owner/manager, the late John W. Leahy. Leahy was a faithful custodian and offered the relics a safe haven. For a generation these remarkable relics of America's industrial past stood surrounded by blue-ribbon cattle, giant watermelons, and homemade jellies. If it was not the most appropriate setting, at least the New Haven collection was preserved.

Prosperity and rising land values are, however, preservation's great enemy; more historic buildings and institutions have been destroyed for this reason than any other single cause. As Danbury became more suburban and more densely developed, the old fairgrounds became attractive to speculators. The economic pressures became so great that the managers of the Leahy Estate decided to sell the property for redevelopment as a shopping center.

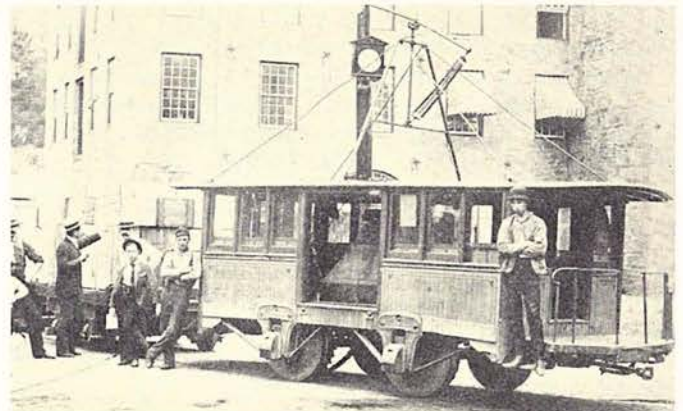
THE COLLECTION



Boston & Providence RR coach built at the line's Roxbury, Mass., shops about 1834 by John Lightner, the master car builder. It is also claimed that the coach was built by Osgood Bradley, a carriage maker of Worcester, Mass. The car is of the old-fashioned stage or mellow style and is the oldest original American-made RR car in existence. The car was wrecked at some point in its career but the body parts were saved. In 1892-1893, a new running gear was fabricated and placed under the restored body. See John H. White Jr., *The American Railroad Passenger Car* (Johns Hopkins, 1978) for more details.



The *Daniel Nason*, a rare 4-4-0 with inside cylinders and a crank axle, was designed and built by George S. Griggs at the B&P Roxbury shops in either 1858 or 1863. Engines of this type were very popular in New England about 1845-1860. It is the only surviving example and is one of the earliest preserved locomotives in North America. It was extensively rebuilt in 1879, but was restored in 1893 for exhibit at the Columbian Exposition. It was loaned to Purdue University between 1905 and 1938 (or '39), then recalled by the New Haven for exhibit at the N.Y. World's Fair. The *Nason* was not operated at the fair, but the little coach described above was pulled by horses at the fair pageant. *Daniel Nason* was, incidentally, superintendent of the B&P. See *Railway & Locomotive Historical Society Bulletin* 47.



Electric locomotive designed by Charles Van Depoele for the Ansonia, Derby & Birmingham Electric Ry. in Conn. The line opened in 1888. The four-wheel, wood-cab locomotive, which looks something like a snow sweeper, presumably was built by Pullman, with electrical equipment supplied by the Van Depoele Co. It was powered by a 75-h.p. bi-polar motor through a geared jack shaft and chain-and-sprocket drive. AD&B was reorganized ca. 1890 as the Derby St. Ry. Just when the locomotive became part of the New Haven's collection is uncertain. See *Railway & Locomotive Historical Society Bulletin* 26.

Disposition of the relics has been discussed for some time now. The museums most interested do not have purchase funds sufficient to meet the sale prices expected by the trustees. Establishing a fair market value is a problem not unique to the present case. Each piece is of great historic value, but the market is limited to impecunious museums, excepting the unpredictable emergence of a wealthy private collector. And so, in cash value, the collection might command a rather modest amount. Furthermore, book value of the trio is low because Leahy bought them for a mere \$1325. Fred Fearn (130 White St., Danbury 06810; [203] 748-3535) is overseeing the disposition of the Danbury State Fair. J.H.W.

Editor's Note: A fuller account of the Daniel Nason's history by John H. White is in Shoreliner, vol. 12, issue 3, 1981 (New Haven RR Historical & Technical Assn., Box 412, Grafton, Mass. 01519. The collection will be auctioned between March 31st and April 5th.

MUSEUM NOTES

A totally renovated **DISCOVERY HALL MUSEUM** [SIA], in downtown South Bend, Ind., opened its doors on Nov. 1. The opening day crowd exceeded 1300 visitors. Discovery Hall is one of the few museums in the Midwest to examine a region's history by viewing its industrial development. Exhibits look at the people and products of the 55 companies represented in the museum's collections, including the Studebaker Bros. Mfg. Co. and its successors, Bendix, White Farm Equipment, South Bend Lathe, and Fuller O'Brien Paints. The museum is open Tues. through Fri. from 10:00 A.M. to 4:30 P.M., 10:00 A.M. to 4:00 P.M. on Sat., and 1:00 to 4:00 P.M. on Sun. Discovery Hall is located in Century Center, 120 S. St. Joseph St.

The **SEASHORE TROLLEY MUSEUM** in Kennebunkport, Maine, was founded in 1939 as the Seashore Electric Railway. It is the principal activity of the New England Electric Railway Historical Society. The museum features two exhibit barns housing 25 trolleys; a railway shop, where the trolleys are restored and maintained in operating condition; and a 2¼-mi. demonstration railway. The museum illustrates the evolution of mass transit technology from the horsecar through the early electric car to the faster interurban and the trackless trolley. For students of electric railway technology, there is a library housing a growing collection of trade periodicals and technical literature. The museum is open daily from mid-Apr. to mid-Nov. Information on hours and admission fees: STM, P.O. Box 220, Kennebunkport, Maine 04046.

We need our monuments too

Imagine going to Philadelphia and finding Independence Hall and the Liberty Bell no longer there. Imagine going to Gettysburg and finding all traces of the battlefield paved over with a housing development or amusement park. Imagine going to any other historical site and finding no trace of it. "Perish the thought," you might say, because an appreciation for major landmarks in our political and military history starts in grade school and is constantly reinforced by newspaper and magazine articles, television clips and other media.

Why must our sense of history and national heritage be limited to politics and war? With all due respect to our illustrious politicians and generals, hasn't technology in general, and manufacturing technology in particular, made a substantial contribution to the quality of our lives? For every statue of a president, governor, mayor and general in our town squares, how many will you find of an engineer or inventor or industrialist? The few there are, anywhere, were probably commissioned by private foundations. Public funds paid for Governor Foghorn's statue in the state capitol. Doesn't this tell the world—especially our youth—something about status and values?

Every group needs a sense of pride; every group needs an institution stimulating and maintaining public recognition of its history, accomplishments and future direction. Think of what a visit to the US Capitol, to the Statue of Liberty or to the Jefferson Memorial Arch (St Louis), or similar places does to your sense of being an American. In the same way, we—all of us in the metalworking technologies—need our monuments too!

Right now there are only four major public collections devoted to machine tools and other metalworking technology: The Smithsonian (Washington, DC), The Henry Ford Museum (Dearborn, MI), The Museum of Science and Industry (Chicago, IL), The American Precision Museum (Windsor, VT). If you contrast four with the number of

art, sports or other general-interest museums around the country, you ask why there are so few. The answer falls into two categories:

- Machinery lacks pizzazz. At least that's what some museum curators say. Having to appeal to everyone from Susie Schoolgirl to Peter P H Dee, they find it better to show only a machine model or photo, and an example of what the machine produces. This is much the same thing as when TV commentators, in discussing the miracles of space flight, focus only on the two astronauts in the space shuttle and completely neglect the manufacturing technology that made it all possible. As our own Jim Keebler would put it, "People are interested only in the baby and not in the birth pains."

If our fathers were merely thankful for an opportunity to earn a living, today's youth looks to role models in choosing a profession or livelihood. The tool collections may help attract young people to the skilled trades by instilling a sense of tradition and pride in these skills.

- Unlike locomotives, ships and other transportation equipment which can be stored outdoors, machine tools must be kept indoors. Most museum floors don't have the necessary load capacity; their budgets can't accept the necessary charges for rigging, shipping and care.

Beyond tooting our horn, there are good and practical reasons for supporting machine tool collections:

- Knowing and understanding the history of tool development can help solve current problems. It is amazing how often you find supposedly new problems were addressed in earlier, even ancient, times. (This is true in many areas of human endeavor, not just mechanical technology.) A mechanical linkage used in

modern presses for rapid advance/slow work/rapid retract motions was originally invented by Archimedes. Alcohol is not a new engine fuel; it was used successfully about 100 years ago. Other examples in the machine tool area can be cited. When earlier attempts to solve problems failed, most often it was only because the then-available materials were either inadequate or too expensive, and the inventions were put aside and forgotten.

- The filing of a patent application does not assure that a machine was actually built. Conversely, machines have been built without any patent application. A museum director mentioned having been consulted as to prior art by a major machine tool builder involved in a patent infringement suit.

- A historical perspective gives you a sense of direction. Churchill is credited with having said, "The further back you look, the further ahead you can see." Paraphrasing Leighton Wilkie, founder of the DoAll Co, "A basic understanding of the evolution of machines can provide an insight into applications, characteristics, capabilities and limitations of the latest models that would be difficult to develop without such understanding. A basic understanding also helps balance the frustration of seeing how far we have yet to go to perfect our machines by realizing how far we have already come."

- Recent statistics show a shortfall, in 1980, of about 2700 experienced tool-and-die men and 2800 machinists needed to meet industry needs. Unquestionably, there are many factors involved, but it is reasonable to assume that status—perceived status—is probably a factor. If our fathers were merely thankful for an opportunity to earn a living, today's youth looks to role models in choosing a profession or livelihood. The tool collections may help attract young people to the skilled trades by instilling a sense of tradition and pride in these skills.

Readers looking for a unique way to "do their thing" may be interested in the Society for Industrial Archeology, a nonprofit organization for individuals and groups interested in the study and preservation of the industrial past.

For information on the collections, circle E67 for the American Precision Museum, E68 for the Henry Ford Museum, and E69 for the Museum of Science and Industry. For further information on the Society for Industrial Archeology, circle E70. ■

IA IN THE NATIONAL REGISTER

Compiled by Carol Dubie

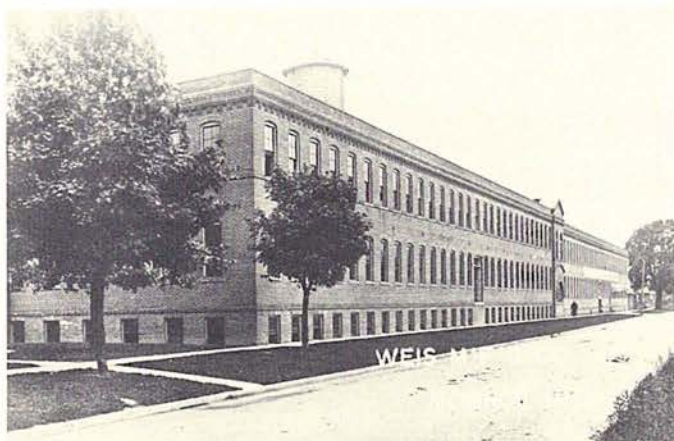
National Register listings, Sept. 1-Dec. 15, 1981:

ARIZONA. **Coolidge Dam**, San Carlos vic. 1927 reinforced-concrete dam built by the Bureau of Reclamation, the first and only large-scale multiple-dome dam, whose construction involved new techniques in concrete forming and pouring.

CALIFORNIA. **Laws Narrow-Gauge Railroad Historic District**, Bishop vic. 1883-1920s, including depot, track, locomotive, and cars used in timbering and agricultural development.

INDIANA. **Williams Bridge**, Williams vic. Howe truss covered bridge, 376 ft. long, 1884.

MICHIGAN. **Shay Locomotive**, Cadillac. 1898. **Mantistique**



Weis Mfg. Co., Monroe, Mich., ca. 1910. *Photographer unknown.*

Pumping Station, Mantistique. 1922 brick water tower. **Weis Mfg. Co.**, Monroe. 1906 complex of five brick buildings. Weis made file holders, binders, and index cards and later diversified into the mfr. of bookcases and office furniture. Complex, now vacant, is slated for adaptive use as housing. **Ypsilanti Water Works Standpipe**, Ypsilanti. Limestone water tower, 1889, designated an American Water Landmark in 1975.

NEVADA. **Gerlach Water Tower**, Gerlach. Redwood tank on timber trestle, 1909, built for Western Pacific RR.

PENNSYLVANIA. **Lock Ridge Furnace Complex**, Alburtis. Furnace, engine room, cast room, and other remains. Now part of a museum of iron production in the Lehigh Valley. **Haines Mill**, Allentown. Stone flour mill, 1908, now a milling museum.

PUERTO RICO. **Lighthouses of Puerto Rico Thematic Group.** Nomination adds ten lighthouses to the Register: Farro de Morro; Puerto de Ponce; Caja de Muertos; Punta de la Tuna; Mona; Culebrita; Punta de la Figurao; San Juan; Cabo Rojo; and Punta Borinquen. The system of fifteen major and minor structures, built according to a master plan in the last quarter of the 19th c., was intimately related to the economic development of Puerto Rico as it facilitated the safe export of raw materials—sugar, molasses, rum, and coffee. Several structures retain significant portions of their original illuminating systems. Nomination, prepared by Benjamin Nistal-Moret [SIA], is based on a survey sponsored by HAER and the U.S. Coast Guard, 7th District.

SOUTH CAROLINA. **Cape Romain Lighthouses**, McClellanville. 1827 and 1857. Significant in Charlestown Co. navigation history.

WISCONSIN. **Round Lake Logging Dam**, Fifield vic. Late 19th-c. earthen dam with sluiceways and timber gates; used to impound water to move cut timber from a major pine-producing watershed.

REVIEWS

Five Hundred and Seven Mechanical Movements, by Henry T. Brown. Nicholas T. Smith (P.O. Box 66, Bronxville, N.Y. 10708), 1981. 128 pp. \$12.50

This work, a reprint of the 18th edition published in 1896, is part of the technical tradition of graphic transmission and diffusion of knowledge. Brown's book consists of small (slightly over 1 in. x 1 in.) line drawings, each accompanied by a description of one or two sentences. The drawings—usually depict a particular mode of power transmission or a device for changing one type of motion to another, although a few show an entire machine.

Mechanical Movements could be especially handy for machine restoration or re-creation, and it is certainly useful for capturing the vocabulary (verbal and non-verbal) of late 19th-c. engineering. It may also serve as a reference work for the general historian of technology, since Brown included not only recent devices but some of considerable antiquity, ranging from Hero's aeolipile of Roman times to a man-powered balance pump, a favorite of Renaissance machine books. *Darwin H. Stapleton, Program for the History of Science & Technology, Case Western Reserve University*

The Amazing Pennsylvania Canals, 150th anniversary edition, by William H. Shank. American Canal & Transportation Center (809 Rathton Rd., York, Pa. 17403), 1981. 128 pp. \$6.50 paperbound

William Shank's readable collection of information about the historic canals of his home state has been augmented in this new edition by a revised map of the 1,243 mi. of state and privately owned waterways, the addition of 23 pages of tables of pertinent data, and a table of contents.

Described are the engineering problems encountered in constructing and operating the canals; and the dams, tunnels, and inclined planes used, as well as the locks. Some of the original canal tunnels, aqueduct piers, and lock structures survive today. Exerpts from canal-era journals describe the pleasures and pains

of travel aboard canal boats. Illustrations of canal life are included, as are many interesting historic and contemporary photographs. *Edith McNally, Editor, Towpaths, the newsletter of the Ohio Canal Society*

IA FOR YOUNG PEOPLE

Bridges, A Project Book, by Anne and Scott MacGregor. Lothrop, Lee & Shepard (William Morrow & Co., 105 Madison Ave., N.Y., N.Y. 10016), 1981. 56 pp. \$5.95 paperbound. (Ages 9 to 12)

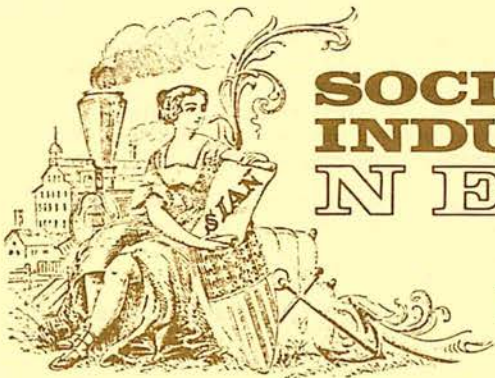
Bridges is a thin little book with the admirable idea of attracting young people to the subject. The thought is to give some concept of river crossings and the manner in which they are constructed.

A few pages of the book are devoted to the evolution of bridge building from the primitive log-across-the-stream to soaring cantilevers, high trestles, and suspension spans. The "project" portion involves directions for the construction of three models: a voussoired arch, a weight-lifted bascule, and a suspension bridge.

In theory, these three should be good, but trying to build them proves impractical and frustrating. Adults familiar with bridges and accustomed to model-building found the materials suggested inadequate, the construction tedious and difficult, and the end result disappointing. Young would-be bridge buffs found the models beyond their capabilities. The "suspension bridge" contrived of newspaper is particularly unfortunate; strings or light picture wire would produce a far better example of at least the principles involved.

The book's line illustrations of world-famous bridges are neat and attractive, and include the Coalbrookdale, Britannia, Firth of Forth, Sydney Harbor, and Verrazano bridges. The text is exceedingly brief and generalized, and in some places confusing and inaccurate. A few names are tossed in, such as Stephenson, Whipple, and even Kelly and Bessemer, but there is no mention of the Roeblings.

In sum, the idea of a project book on bridges for young people is a good one, but this one, unfortunately, falls far short of reasonable expectations. *Richard S. Allen, Albany, N.Y.*



SOCIETY FOR INDUSTRIAL ARCHEOLOGY NEWSLETTER

PUBLICATIONS OF INTEREST

VOL. 11 NO. 1

A SUPPLEMENT

WINTER 1982

Compiled by Robert M. Frame III, Minnesota Historical Society, and Robert M. Vogel, National Museum of American History

BOOKS & ARTICLES

David Alderton, *INDUSTRIAL ARCHAEOLOGY IN & AROUND NORFOLK*. Special publ. by Assn. for Industrial Archaeology (The Wharfe, Ironbridge, Telford, Salop TF8 7AW, England), 1981. 24pp., illus. Informative county guide, well mapped & good descriptions.

Randall D. Beirne, *19th-CENTURY INDUSTRIAL COMMUNITIES IN BALTIMORE*. In *The Maryland Historian*, Spring 1980, pp. 39-50.

Lenard R. Berlanstein, *GROWING UP AS WORKERS IN 19th-CENTURY PARIS: THE CASE OF THE ORPHANS OF THE IMPERIAL*. In *French Historical Studies*, Fall 1980, pp. 551-76.

Benson Bobrick, *LABYRINTHS OF IRON: A HISTORY OF THE WORLD'S SUBWAYS*. Newsweek Books, 1981. 352 pp., \$13.95. Yes, the literary types can write competent industrial history. It's not just subways, except in the broadest sense, for he starts with the ancient tunnels, but moves quickly to the complex London undertakings with the problems of steam propulsion underground (the promoters said that coke smoke was nourishing), Paris, N.Y., and the newcomers. A few gaffes (Ericsson's Monitor becoming a submarine) but on the whole quite fine and engaging.

Jim Boyd, *JOHN BULL: 150 YEARS*. In *Railfan & Railroad* (P.O. Drawer 700, Newton, N.J. 07860), Jan. 1982, pp. 34-48, illus. \$1.50. Fall account of the saga of operating the 1831 locomotive in Sept., 1981. Includes essay by John H. White on the attendant restoration.

David Brody, *WORKERS IN INDUSTRIAL AMERICA: ESSAYS ON THE 20th-CENTURY STRUGGLE*. Oxford Univ. Press (N.Y.), 1980. 215 pp. \$14.95. Rev.: *Western Pa. Historical Mag.*, April 1981.

M.L. Brown, *FIREARMS IN COLONIAL AMERICA: THE IMPACT ON HISTORY & TECHNOLOGY, 1492-1792*. Smithsonian Institution Press (P.O. Box 1579, Washington, D.C. 20013), 1981. 448pp. 376 b/w illus. \$45.

Patricia Leigh Brown, *IS SOUTH STREET SEAPORT ON THE RIGHT TRACK?* In *Historic Preservation*, July-August 1981, pp. 10-19.

Ronald C. Brown, *HARD-ROCK MINERS: THE INTERMOUNTAIN WEST, 1860-1920*. Texas A & M Univ. Press (College Station), 1979. 201 pp., \$16. Rev.: *Arizona & the West*, Summer 1981.

Thomas R. Buecker, (SIA), *FLOUR MILLING IN NEBRASKA*. Educational Leaflet No. 17. Nebraska State Historical Society (1500 R, Lincoln 68508), n.d. 10 pp., illus., biblio.

Thomas Buecker, (SIA), *WATER POWERED FLOUR MILLS IN NEBRASKA*. Neligh Mills (Neligh, Neb.), 1980. 72-page report and 38 photos, drawings, and maps.

Neil K. Buxton, *THE ECONOMIC DEVELOPMENT OF THE BRITISH COAL INDUSTRY: FROM THE INDUSTRIAL REVOLUTION TO THE PRESENT DAY*. B.T. Batsford Ltd. (London), 1979. 297 pp., £ 15. Rev.: *Business Hist. Rev.*, Summer 1980.

Robert H. Byler, Jr., *RESTAURATEUR WITH A TASTE FOR HISTORY*. In *Historic Preservation*, May/June 1980, pp. 32-37. RR depots become restaurants.

N.G. Calvert, *WINDPOWER PRINCIPLES: THEIR APPLICATION ON A SMALL SCALE*. John Wiley & Sons (One Wiley Dr., Somerset, N.J. 08873), 1980. 122 pp. \$29.95. General guidelines for building wind plants; tables, diagrams, etc.

Anthony James Cantanese, *RECYCLING LONDON'S ST. KATHERINE'S DOCK*. In *Urban Land*, Feb. 1981, pp. 7-11.

Charles W. Cheape, *MOVING THE MASSES: URBAN PUBLIC TRANSIT IN N.Y., BOSTON, & PHILADELPHIA, 1880-1912*. Harvard Univ. Press (Cambridge), 1980. 285 pp. \$18.50. Rev.: *Business Hist. Rev.*, Autumn 1980.

Roy Church, *HERBERT AUSTIN: THE BRITISH MOTOR CAR INDUSTRY TO 1941*. Europa Publs. (London), 1979. 233 pp. £ 12. Rev.: *Technology & Culture*, October 1980.

Richard Clammer, *PADDLE STEAMERS*. Batsford (North Pomfret, Vt.), 1980. 144 pp., 122 photos. \$27. All paddle steamers that sailed from British & Irish ports before WWI.

Susan Cohen, *WORLD WAR II UGLY DUCKLING COMES HOME*. In *Historic Preservation*, March/April 1980, pp. 18-23. Liberty ship *Jeremiah O'Brien* rescued from mothball fleet.

Steven Cohen, *STEELWORKERS RETHINK THE HOMESTEAD STRIKE OF 1892*. In *Pennsylvania History* (704 New Liberal Arts Bldg., The Pa. State Univ., Univ. Park, Pa. 16802), April 1981, pp. 155-177. New viewpoint, from the mouths of the workers themselves, for the first time.

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Julianne Labreche, THE CAPITAL CITY'S MOST POPULAR MUSEUM. In *Canadian Geographic*, June-July 1981, pp. 24-37. Ottawa's National Museum of Science & Technology, opened 1967.

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John M. Peterson, THE LAWRENCE WINDMILL. In *Kansas History*, Autumn 1980, pp. 146-64. Smock mill built 1863-64, burned 1905.

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GUIDES & DIRECTORIES

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STEAM & GAS SHOW DIRECTORY--1982 EDN. Stemgas Publ. Co. (Box 328, Lancaster, Pa. 17603). \$3.50 Ppd. 400 shows, rallies, thresherees, etc.

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CANADA'S URBAN PAST: A BIBLIOGRAPHY TO 1980 & GUIDE TO URBAN STUDIES. Univ. of B.C. Press (303-6344 Memorial Rd., Vancouver, B.C. V6T 1W5), 1981. 472 pp. \$42. All provinces, 106 urban centers. Books, articles, and bibliogs., on all aspects of urban history. Indexed by author, place, and subject.

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CONFERENCE PROCEEDINGS

Robert Donaldson, (Ed.), BICENTENARY OF THE JAMES WATT PATENT FOR A SEPARATE CONDENSER FOR THE STEAM ENGINE. Proceedings of a two-day symposium (1969). Univ. of Glasgow (James Watt Bldg., Glasgow W.2.), 1970. 224 pp. Fine series of essays on the history, theory, and recent usage of the condenser.

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SIAN Winter 1982): the papers of the 'working sessions' dealing with 9 areas of interpretation and preservation and 10 principal industries and industrial concepts (technical innovation; the factory system; working-class housing). Each paper is illustrated and followed by a commentary. Contains also the conferences's opening talks. An impressive compilation of material on IA, the world over. (Copies of the table of contents avail. from SIA HQ for stamped envelope). Special price for this and the three preceeding volumes of transactions (to 31 March 1982), \$30.

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ICCIH 81: CONFERENCE PROCEEDINGS. National Reports Volume and separate Working Sessions papers available from CILAC, 48 Rue St. Lambert, 75015 Paris, France. Full details in SIAN, Winter 1982 or request particulars from CILAC.

SPECIAL PUBLICATIONS

Jeff Dean, ARCHITECTURAL PHOTOGRAPHY. American Assn. for State & Local History (708 Berry Rd., Nashville, Tenn. 37204), 1982. 144 pp. \$19.95 (\$14.95 to members). Good essay on this tool so important to proper recording of any structure or site.

James Carvill, FAMOUS NAMES IN ENGINEERING. Butterworth & Co. (Borough Green, Sevenoaks, Kent TN15 8PH, Engl.), 1981. 104 pp. £8.95/4.95. Short biographical sketches of names that survive in all engineering fields.

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EXHIBITION CATALOGS

Falcon D. Hildred, PONTYDD MENAI (The Menai Bridges). Gwynedd Archives Service and the Welsh Arts Council, Cardiff, Wales, U.K., 1980. 40 pp., illus., b/w, color. Monograph accompanying an exhibition on Telford's Menai suspension bridge (1825) and Stephenson's tubular RR bridge (1849). Fine accounts--verbal and graphic--of this pair of celebrated spans. Accompanied by separate check list of the 151 exhibit entries. In Welsh and English.

Susan Danly Walther, (Curator), THE RAILROAD IN THE AMERICAN LANDSCAPE: 1850-1950. The Wellesley College Museum (Jewett Arts Center, Wellesley, Mass. 02181), 1981. 144 pp. Utterly splendid catalog to what must have been an equally fine exhibition. The theme illustrated by paintings, prints, and photographs--the known and the new--many illus. here. Essays by Leo Marx, Kenneth W. Maddox, and the Curator.

ALL STATIONS: A JOURNEY THROUGH 150 YEARS OF RAILWAY HISTORY. Thames & Hudson, 1981. 135 pp. \$17.95. Based on a European exhibition on the history of the RR station, but touches stations world 'round.

BIBLIOGRAPHIC NOTES

M&M BALDWIN. A bookstore specializing in waterways, industrial history, transport, etc., in wide variety. 2nd-hand. Periodic catalogs. 98 Kenyon St., London SW6 6LB.

URBAN CENTER BOOKS. A bookstore specializing in architecture and historic preservation, both in-print and 2nd-hand, has opened in N.Y.C. Also posters, exhibition catalogs, maps, guidebooks, and postcards. Catalog avail. at \$1. Madison Ave. & 51st St., N.Y.C. 10022. (212) 935-3595.

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