

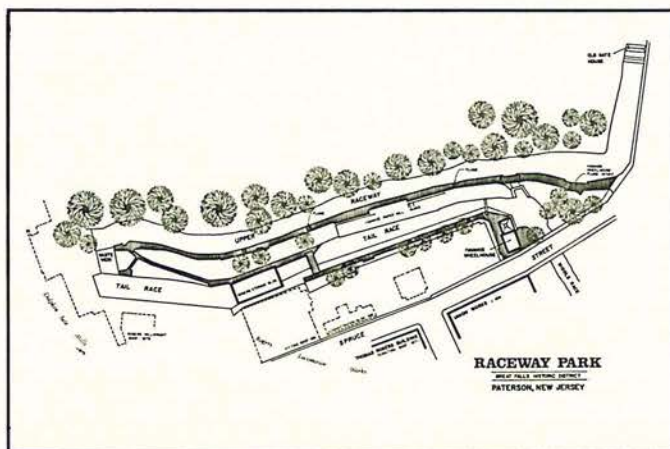
SOCIETY FOR INDUSTRIAL ARCHEOLOGY

NEWSLETTER

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PARKS OPEN IN GREAT FALLS HISTORIC DISTRICT



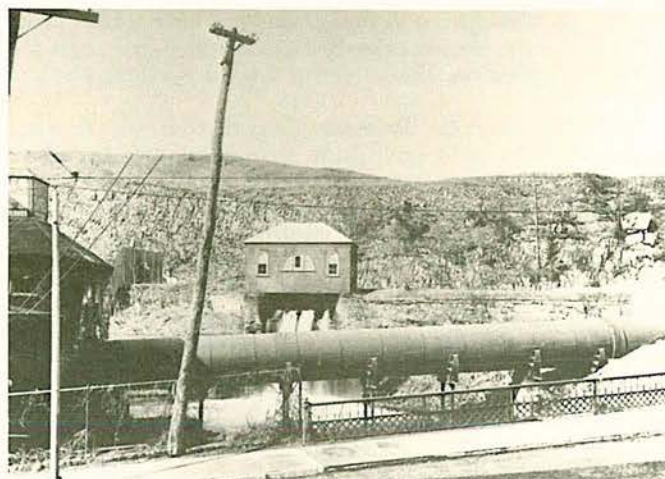
On June 25, N.J. Governor Thomas H. Kean and Paterson Mayor Lawrence F. Kramer celebrated the opening of Raceway Park, a reconstruction of the nation's earliest waterpower system [HAER] and a component of the city's multimillion-dollar restoration of the 119-acre Great Falls Historic District, a once-derelict mill area that today is a thriving business, residential, and tourist center.

Mary Ellen Kramer, wife of the Mayor and a leading force in the area's restoration, cracked a champagne bottle against a historic wheelhouse wall, signaling the release of a 22-ft.-high fall of water over a historic spillway into an equally historic water raceway below. Two tiers of raceways or canals once used to channel water from the Passaic River to Paterson's mills, a restored 19th-c. wheelhouse, two wooden bridges, a weir, and a gatehouse are all part of the \$2-million, four-acre Raceway Park, built with State of N.J. Green Acre Funds.

"Reconstructing this ingenious 18th-c. waterpower system was like putting pieces of history back together again," said the Mayor of the wooded area redesigned as a recreational and educational resource and located near the Great Falls of the Passaic River.

Federal, state, and city officials also joined the Governor and Mayor in dedicating the one-and-a-quarter-acre Cianci Park, actually a new city square built on top of former parking lots just one block from the city's major shopping street and at the entrance to the historic district. Still under construction, the \$700,000 Cianci Park, also built with state Green Acre funds, is Victorian in style with a 12-ft.-high fountain, a steel gazebo, and bocci courts. Cianci Park is part of a downtown neighborhood of two-story frame houses, ethnic restaurants, 19th-c. mill buildings, and a 700-car parking garage. Newly planted trees, new brick and concrete sidewalks, and lampposts reminiscent of an earlier era complete the plaza-like reconstruction of this area.

Both parks were designed to accommodate the thousands of annual visitors to the city and to the Great Falls District, declared a National Historic Landmark in 1976. Since that time the city has attracted more than \$16 million in public funds and an equal amount in private investment to build a new commercial and residential area



Ivanhoe wheelhouse and spillway, Paterson, N.J., as they appeared in the early 20th century. Photographs courtesy Paterson Dept. of Community Development.



Ivanhoe wheelhouse and spillway as they appear today, restored as part of Raceway Park.

adjacent to the downtown and within the physical framework of mill buildings and streets that saw the introduction and growth of American industry.

"We are here to witness that Paterson has accomplished what it set out to do several years ago when it began blending public and private funds to create an attractive, economically viable climate for business and industry, and to create jobs for our citizens. Alexander Hamilton would be proud of us today," said the Mayor, referring to the man who recognized that the power inherent in the 77-ft. drop of the Great Falls could be harnessed to spawn an indigenous American industry. The City of Paterson was founded by Hamilton in 1792 as the first

Continued on page 9

SIA 11TH ANNUAL CONFERENCE: HARRISBURG, PA.

Despite some skepticism about what Central Pa. could offer jaded SIA members, a good-sized crowd convened on Thurs., May 6, at the Holiday Inn in downtown Harrisburg for a poolside reception. Late that evening local bars shuddered under the unaccustomed force of conference-goers seeking a truly "local experience." The 11th Annual Conference was off and running.

Early Fri. morning three tour buses took off for York to look at the region's diversified industrial base. Set in a well-watered, lime-rich, and highly productive agricultural area, industry in York developed without dependence on water power as a prime mover. A strong tradition of skilled craftsmanship and a favorable business climate encouraged the expansion of local industries into national markets and the later influx of national corporations.

The morning tour included the ultra-modern **Pfaltzgraff Pottery** in Thomasville, where the mostly female labor force mixed and extruded clay to be slip cast, pressed, or jiggered into everything from cups and saucers to candlesticks. The amount of handwork still required was staggering.

At the **J. E. Baker Co. limestone quarry** the tour buses (in turn) picked up the company geologist to serve as a guide, then drove down into the bottom of the quarry, where monstrous loaders picked up loose stone from that morning's blast. The buses then followed the progress of the stone as it passed through the primary and secondary crushers and into the huge rotary kilns. The end product is used both for agricultural purposes and for the manufacture of refractory brick.



At the J. E. Baker Co. quarry, geologist Dave Hopkins explains the quarrying, refining, and manufacturing processes that transform dolomite into products serving the steel, cement, and agricultural industries. *Robert M. Vogel photographs.*



At J. E. Baker, dolomite is retrieved from open pit quarries like this one.

The **hydraulic turbine division of Allis-Chalmers** was everyone's idea of paradise. Starting as the S. Morgan Smith Co. on the same site in 1890, the company has been manufacturing continually larger and more efficient turbines for the biggest hydroelectric projects in the world. Under one roof the plate steel is cut, bent, and welded into shape with some of the most oversized machine tools SIA members had ever seen.

After a delicious but hurried lunch provided by the York County Historical Society at the Bonham House in downtown York, the tour

resumed. The first stop of the afternoon was the enormous warehouse of the **McCormy Stores Distribution Center**. This part of the manufacturing cycle — the distribution of goods to retail outlets — is a process not usually seen or appreciated. Rube-Goldberg conveyor belts and hanging baskets transport the merchandise from storage bins to the truck loading docks, all under the supervision of a sophisticated computer control center.



McCormy Stores' mammoth distribution facility in York was completed in 1966.

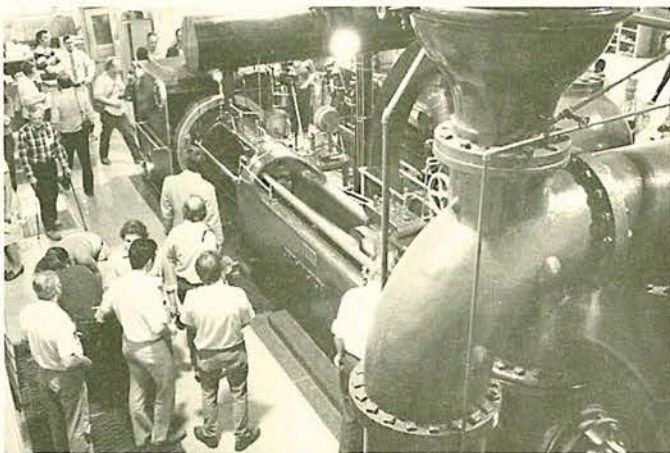
The Harley-Davidson plant tour, which had been scheduled for the afternoon, was cancelled at the last minute due to a temporary plant shutdown. With some last-minute effort — including begging and borrowing fifty hard hats — a tour of the **Bowen-McLaughlin-York Co. tank plant** was arranged as a more-than-satisfactory substitute. SIA members saw the difficulties of aluminum welding and an assembly line that operated with a series of small cranes. The vast complex also included a tank proving ground with perilous climbs and water hazards. The tour concluded with a rare opportunity to talk frankly with the president of the company, Vincent L. Jones, about both technical and philosophical issues of warfare materiel manufacture.

The day ended in the countryside south of York at the more



Brillhart Pumping Station of the York Water Co., completed in 1897.

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 re-use 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.



This, the last remaining steam pumping engine at York's Brillhart Station, was built in 1925 by the Worthington Pump & Machinery Corp., Snow-Holly Works, Buffalo, N.Y. Rotative machines of this type, with a compound pair of Corliss-type cylinders driving a matched pair of double-acting pumps, were the backbone of the waterworks industry during the early 20th century.

peaceful world of the York Water Co. pumping station. There the company's 1925 **Worthington horizontal cross-compound pumping engine** was under steam for the last time. Coincidentally, the pumping engine had been dedicated that morning as a Pa. Historic Mechanical Engineering Landmark.

The Sat. paper session began with a symposium titled "Pennsylvania Industry — The Keystone of American Industrial Society." Many of the papers were delivered by site administrators at Pa. Historical & Museum Commission properties, which include such marvels as the Anthracite Museum, the Railroad Museum, the Lumber Museum, and Drake Well. Anthony F. C. Wallace of the University of Pennsylvania served as symposium commentator. Concurrent afternoon sessions considered the continuing problems of historic bridge preservation and the new issues raised by a resurgence of interest in hydropower.

The annual banquet provided a look at another side of Pa. life, its enduring ethnic communities. In this case, the women of St. Mary's Church in nearby Steelton prepared a fabulous Croatian banquet. After dinner, a parish youth group dressed in costumes performed traditional dances and invited the audience to attend a private Croatian Club for more dancing or sample the varied entertainment of Steelton's bars. Some revelers only made it across the street to Gornick's Locker Room for a night of polkas and beer.

On Sun. morning hard-core conferees were up at 8 o'clock for two excellent paper sessions, one on "Slag and Nails," chaired by David Salay, the other on "Cultural Landscape Reconstruction," over which Ed Rutsch presided. The Sun. tour kicked off with a visit to the **Harrisburg Railroad Station [HAER]** to see its landmark trainshed. This was followed by a buffet lunch on City Island in the



Pennsylvania Railroad station and trainshed, Harrisburg. The station and the earliest section of the trainshed were erected in 1887; the shed was enlarged in 1897. The shed currently is undergoing renovation.

CONTRIBUTORS TO THIS ISSUE

Brenda Barrett, Pa. Historical & Museum Commission; Alan Clarke, Northern Va. Community College; Sarah C. Gleason, Providence, R.I.; and John R. White, Youngstown (Ohio) State University.

Susquehanna River and a stroll on the **Walnut Street Bridge**. Steel-making at the **Bethlehem Steel Plant** in Steelton was the major tour attraction.



Members Robert Irving and Eric DeLony confer on Harrisburg's Walnut Street Bridge over the Susquehanna, built 1889-90 and now preserved for pedestrian and bicycle use.

The guides, many with twenty-odd years' experience, were carried away with enthusiasm and led the tour through a shower of sparks for a close-up look at a battery of roaring electric furnaces and gigantic ladles pouring liquid steel into ingot molds. After an extensive tour of the rest of the facility (some of it dating to the turn of the century), the rolling mill started up and all orderly touring was abandoned for an opportunity to climb into the control room and watch the red-hot ingots being rolled and manipulated into billets for further reduction into rails and reinforcing bars.

The tour wound down with a look at the fading glory of Harrisburg's **Cameron St. industrial corridor** and ended quietly at the



Rockville Bridge over the Susquehanna above Harrisburg, the world's longest masonry railroad bridge. Built by the Pennsylvania Railroad in 1902 to carry its four-track mainline, it was the largest in a great family of stone bridges erected by the PRR at this time to replace iron and steel trusses. The choice of stone was based on the sure knowledge that the high capital expenditure would be more than recovered in the long run by the savings on maintenance.

Rockville Bridge where a freight train, providentially passing by, sent all photographers and rail buffs home happy. *B.B.*

All successful SIA conferences involve the hard work and cooperation of many people. I would like to give special recognition to the efforts of Doug Dolan of the York County Historical Society and Lisa Jensen of Historic York, Inc., for opening so many doors in York for our tour. Also, special thanks to Steve Warfel of the Pa. Historical & Museum Commission for organizing the paper sessions on Sat. and to my staff for their hours of extra effort. Finally, we must all acknowledge the contribution of the many industries in the York/Harrisburg area that took the time to give us some fine tours.
Brenda Barrett

AP COVERS SIA

"Industrial archaeologists love old machines," the headline read in the *Cleveland Plain Dealer*. In the *Philadelphia Inquirer*, it was "Society on tour of unscenic sights to promote industrial archaeology." These were just two of what undoubtedly were numerous headlines across the nation capping a feature story by Associated Press reporter Jill Lawrence on the SIA Annual Conference in Harrisburg. Lawrence's article highlighted the Society as "an international group . . . founded 11 years ago to promote the study and preservation of historical factories, machinery, bridges, canals, and industrial communities." It described the process tours of industrial York and included interviews with a number of members. The articles appeared during the week of June 6.

PROFILE: WHO'S BEEN WORKING ON THE RAILROAD?

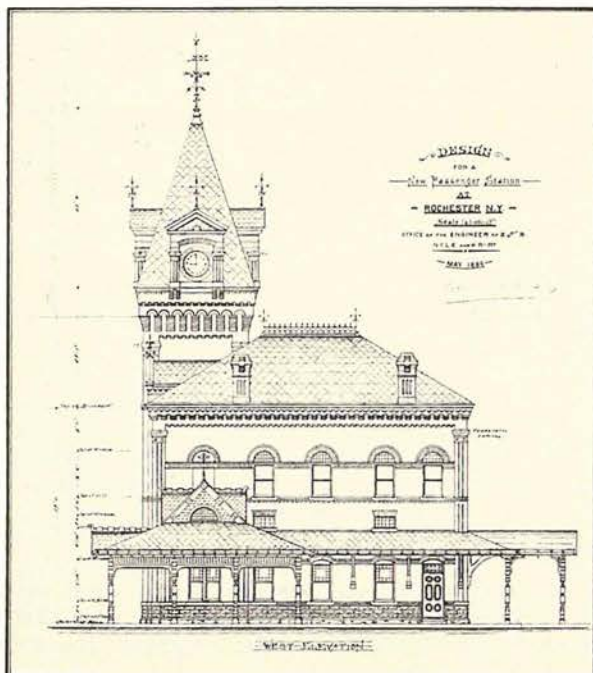
For ten years, retired Prof. Charles T. G. Looney has served as guardian angel to the homeless railroad engineering drawings that have found their way to the archival collection of the Division of Mechanical & Civil Engineering at the Smithsonian's National Museum of American History. And lucky they are, too, for without the many thousands of hours he has given them — sorting, cleaning, flattening, and cataloguing — they still would be in rolls, stacked in boxes, at the Smithsonian's warehouse in Silver Hill, Md. Today, thanks to Prof. Looney, 15,000 Erie Railroad drawings are neatly filed and available for research. He has about 100,000 to go.



Prof. Charles T. G. Looney at work at the Division of Mechanical & Civil Engineering, National Museum of American History. Below are two of the thousands of engineering drawings that Prof. Looney has rescued, cleaned, and filed for future researchers. Robert M. Vogel photograph.

As Chairman of the Civil Engineering faculty for most of the fourteen years he taught at the University of Maryland, Prof. Looney is well prepared to make the crucial decisions about which drawings to save and which to discard. When he first began his three-day-a-week volunteer job at the Museum his tasks were simpler, divided between work for SIA and processing the archival materials that came to the Museum — mostly the records of engineers or engineering firms contacted by curator Robert M. Vogel.

But soon a larger task befell him. During the 1971 HAER/Smithsonian Erie Railroad Survey, Robert Vogel approached Erie engineer William Wehner about the possible transfer of obsolete drawings to the Museum. Wehner was delighted with this unexpected solution to the problem of disposal, and a fruitful and continuing relationship resulted.



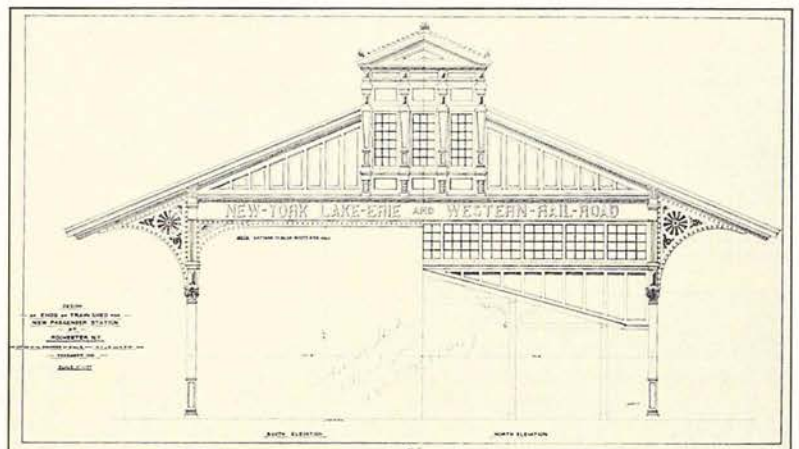
When Conrail was established in the mid-1970s, absorbing the Erie-Lackawanna, Wehner moved from Cleveland to Philadelphia, where he now oversees the transfer of engineering drawings that become homeless as Conrail centralizes its component lines. All are microfilmed for Conrail's own records, deposited unsorted into long, thin boxes known familiarly as "coffins" (and this is the end of the line for some), then shipped to Silver Hill. As time allows, they are brought in small lots to Prof. Looney. Because of the great quantity, at present he can do little more than decide which are worth saving and rebox them by line: Lehigh Valley, Delaware Lackawanna & Western, Pennsylvania, Philadelphia & Reading, New York Central & Hudson River, Erie, and others. Then, for the time being, most go back to Silver Hill.

In the good old days, when only the Erie drawings were arriving, Prof. Looney worked out a handy index system based mainly on types of structures represented. A glance at the headings suggests that this may be the broadest as well as the largest such collection anywhere. Here are terminal structures (roundhouses, car dumpers), warehouse and storage facilities (stockyards, freight depots), passenger stations, ferry terminals, bridges, and more. Oldest are a series of route surveys and track maps drawn in the 1850s.

Prof. Looney has developed his own method of treating the drawings. Because of the frailty of older inks (made by dissolving carbon black in water-plus-mucilage), he limits cleaning to what he can dust off with a drafting brush. "Besides, they look better left alone," he notes. Flattening is the greatest problem, for most have been stored in rolls for years. The best method for linen drawings is to apply a fine mist of de-ionized water with an air brush, then press them for two days under masonite and plate glass. Older drawings, on heavy paper, are more brittle, and these unroll best by being hung in a humidified room (a shower stall, in fact) where they straighten by means of their own weight. Finally, he stores the drawings in acid-free folders, up to 75 per folder.

Twenty-five years ago, when Vogel became curator, the archives consisted of three file drawers. Today it has grown to the point of spilling out of its present spacious quarters. Engineering records of many kinds may be found here (though generally not business records or drawings of railroad rolling stock). Among the many surprises are architect Cass Gilbert's conceptual sketch for a masonry sheathing (never built) for the steel towers of the George Washington Bridge and thirty-five scrapbooks of news clippings collected by engineer-general Montgomery C. Meigs in the 1870s and '80s.

In addition to his ongoing effort to spread the word of the Museum's interest in engineering documents, Robert Vogel has also built a collection of fine art prints, mostly of bridges. Prof. Looney tends to all these incoming items in addition to the railroad drawings. The most recent arrival was a collection of drawings from the Corliss Steam Engine Co. of Providence, R.I. "You can't just let these things pile up," he explains in his clipped English accent (he emigrated from Liverpool in 1919). "And besides," he chuckles, "I do need some relief from the railroads!" S.C.G.



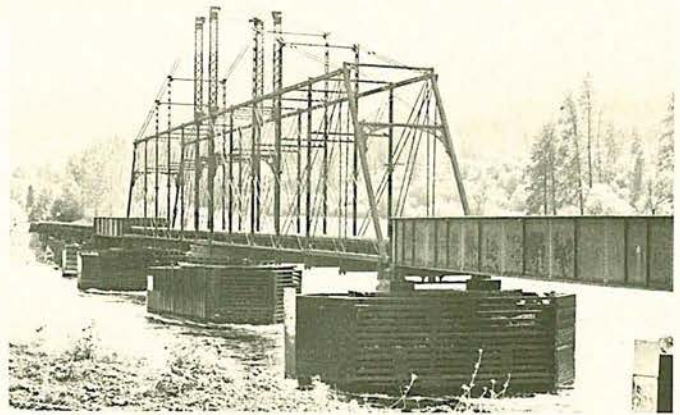
NEWS IN BRIEF

The 109-year-old **Sherwin-Williams paint plant** has joined scores of other industrial relics in Cleveland's "Flats" area. The plant, which made industrial coatings for outdoor sidings and indoor use, was closed this summer. The company blamed the shutdown on the age of the plant, its outdated equipment, and the continued slowdown in the industrial paint business. The plant is at 601 Canal Rd. on the east bank of the Cuyahoga River, where Henry A. Sherwin and Edwin P. Williams began making paints in a cooper's shop in 1873. Sherwin developed both a paint formula and a patented paint mill which ground pigments fine enough to insure their suspension in the oil base; the ready-mixed paint met with great success when first marketed in 1880. The original plant has been continuously expanded and altered. Sherwin-Williams will continue to operate its technical laboratory at the plant.

The Berkshire County Assn. for Retarded Citizens has moved its headquarters into a former brick **gasholder house** at 52 Deming St. in Pittsfield, Mass. The gasholder was built in 1873 by the Pittsfield Coal Gas Co. The building was used for storage during the past twenty years, and attempts to make it a bar or restaurant were thwarted by neighborhood opposition. Renovation of the gasholder as office space cost \$189,000. The gasholder is one of only twelve such structures known to remain in the U.S.

The **George H. Scripps Memorial Marine Laboratory** in La Jolla, Calif., has been designated a National Historic Landmark by the U.S. Dept. of the Interior. The building, completed in 1910, is the oldest structure at Scripps Institution of Oceanography of the University of California, San Diego, and the oldest marine laboratory building in the western hemisphere. The laboratory was listed in the National Register of Historic Places in 1977, the same year it was scheduled to be demolished. But, through the efforts of a group at Scripps, most of the needed restoration funds have been obtained through donations from corporations, foundations, and individuals, along with a \$75,000 matching grant from the federal Historic Preservation Fund. Work to restore the building and provide much-needed classroom and office space is now under way. According to Prof. Fred N. Spiess [SIA] of Scripps, who was appointed chairman of the committee to save the two-story structure (now affectionately called "Old Scripps Building"), nearly seven decades of historic biology and oceanography have taken place in the old laboratory, including planning of expeditions and new programs. Concern for seismic safety had been UCSD's chief reason for removing the old structure. When the original plans of the building were located in the archives of the Art Dept. at the University of California, Santa Barbara, it was discovered that architect Irving Gill had used Kahn Trussed Bar steel reinforcing, developed by Julius and Albert Kahn of Detroit in 1903. After the plans were located, engineering studies showed that the building was stronger than had been realized, and that major structural changes would not be required to meet modern seismic safety standards.

Rebecca Herbst, under contract with the Idaho Transportation Dept. to conduct a statewide historic bridge inventory, has discovered the only cast-iron bridge in Idaho and probably the entire Northwest. The **Kamiah Railroad Bridge** was built in 1900 on the Northern Pacific's Clearwater Short Line, which extended 78 mi. along the Clearwater River from Lewiston to Stiles. The railroad built the branch line to tap the rich agricultural region of the Camas Prairie. In addition to the railroad, it was anticipated that steamboat transportation would contribute substantially to the region's economic development. In building the line, the NP provided for this possibility by erecting a swing bridge near the present town of Kamiah. The three-span bridge incorporated, as its center swing span, a 226-ft. pin-connected double-intersection Pratt truss that had been fabricated by the Phoenix Iron Co. of Philadelphia about 1880. This span was moved to the Kamiah site from an unknown location and adapted to serve as a cantilever-type swing bridge with the addition of a steel tower over the pivot pier connected by "hog chains" to the truss ends. In the 1950s, the bridge's two timber Howe



Kamiah Railroad Bridge over the Clearwater River near Kamiah, Idaho. *Rebecca Herbst photograph.*

truss approach spans were replaced with girders and the piers were rebuilt. The bridge is one of only two swing bridges in Idaho. The year-long bridge inventory is expected to include up to 250 structures by the time it is completed in Oct. It is being sponsored by the Pacific Northwest Region of the National Park Service, under the direction of T. Allan Comp [SIA].

In Jan., ground was broken in Baltimore for a **streetscape** that will show how water, electricity, and gas flow to homes and businesses. The full-size (48 sq. ft.), walk-through sculpture, located in East Jones Falls Park, will demonstrate how public works services — including storm and sanitary sewers and street lighting — are provided and explain how streets, curbs, and sidewalks are constructed. Visitors to Streetscape will be invited to tour the new **Baltimore Public Works Museum**, located nearby in the historic Eastern Ave. Pumping Station. The Museum will highlight the role of public works in the history of Baltimore.

The **Seth Thomas Factory** in Thomaston, Conn., founded 168 years ago by a pioneer clockmaker who gave the town its name, will close in Nov. and merge its operations with a Westclox factory in Ga. The closing was announced in Apr., catching most of its 125 employees by surprise. Some Thomaston families have worked at the factory for four generations. In recent years the recession has hurt the market for new clocks, which are considered a luxury when money is tight. "They've been saying 'Made in Thomaston, Conn., since 1813.' What are they going to say now? 'Made in Georgia?'" asked one employee. E. T. Ryan, president of General Time Corp. of which Seth Thomas is a division, said that the South Main St. assembly plant is outdated and inefficient. Two other General Time divisions will remain in the sprawling brick factory whose clock tower still is checked daily by many residents.

The **Rexleigh Bridge**, one of 21 covered bridges in New York State, has been saved from demolition. The 100-ft.-long bridge, which spans the Batten Kill in southeastern Washington Co. not far from the Vt. border, had been scheduled to be torn down, but local residents waged a successful four-year campaign to save it. A master covered-bridge builder, Milton Graton of Ashland, N.H., has been hired by the County Board of Supervisors to rehabilitate the bridge. Some of the work will be done by county and volunteer workers. The bridge is scheduled to reopen sometime in 1983. And in Binghamton, N.Y., the **Washington St. Bridge** [NR], the longest parabolic arch bridge still standing in the state, will be renovated by the state Dept. of Transportation for \$1 million. The bridge, closed since 1969, was built in 1886 by the Berlin Iron Bridge Co. Renovation should be completed in time for the structure's 100th birthday.

Two new turbines have been installed in **Cornell University's** refurbished **hydroelectric plant**, built in 1904. The facility will be capable of generating as much as seven million kilowatt hours of power a year when it resumes operation. This represents an annual saving on electric bills to Cornell of about \$250,000. The plant's renovation was partly funded through an interest-free loan from the New York State Energy Research & Development Authority.

TRENDS IN THE ADAPTIVE REUSE OF INDUSTRIAL BUILDINGS

by Eric N. DeLony

Editor's Note: With this issue we begin a four-part series by Eric N. DeLony on the adaptive reuse of industrial buildings. As Architect for the Historic American Engineering Record since 1971, DeLony is in a unique position to observe and comment on efforts under way across the nation to preserve and practically reuse buildings that once played important roles in American technological and industrial history. He has selected six case studies to illustrate the diverse ways in which public officials and private developers have successfully used preservation as a means of economic revitalization. Here, Mr. DeLony assesses the general movement and highlights the ten-year effort to preserve the Sloss blast furnaces in Birmingham, Ala. In future issues he will discuss conversion of the Lone Star Brewery into the San Antonio Art Museum; the Columbus, Ga., Iron Works, adapted for use as a major trade and convention center; the redevelopment of the Boston Naval Shipyard at Charlestown; conversion of the Quaker Oats grain silos in Akron, Ohio, into a Hilton Hotel; and reuse of the Central of Georgia Railroad Shops as a tourist and convention facility for Savannah.

Based on observations during the Fourth International Conference on the Conservation of the Industrial Heritage held in France last fall [SIAN Winter 81: 6-7], the U.S. has taken the international lead in the adaptive reuse of historic industrial buildings. Over 250 delegates representing 23 countries attended the conference, where one of the workshops focused on adaptive reuse. The case studies of adaptively reused industrial sites in America over the past three years demonstrated a healthy financial climate, a refreshingly creative design profession, and imaginative development packaging. It was hard to believe that, not too long ago, the industrial districts and working-class neighborhoods of our cities — the “urban eyesores” — were the first to be razed for urban renewal and interstate highways.

Industrial buildings have long been regarded as gritty workplaces, outcasts along blighted railroad corridors and polluted waterways; they traditionally have been associated with human exploitation. Today, architects and developers are finding that plain brick factories and warehouses with fire-resistant, post-and-beam construction offer an interior flexibility that can be shaped into many different forms and functions. Exterior spaces, often characterized by brick streets and cobbled walks, can be landscaped to form courtyards that, when linked to riverfront parks, offer a diversity that enhances city life.

For the scholar, the industrial milieu may represent the most important building type to emerge out of the 19th c. and symbolize a sociological and technological transformation that radically altered the course of human events. For the preservationist, industrial build-

ings not only represent the physical evidence of past human endeavors but also contribute to the diversity of the built environment, which we now realize is essential to the survival of cities. For the builder, industrial buildings are embodied energy: it has been proven that reusing old buildings is more economical than demolition and new construction. For the investor, the new incentives of the Economic Recovery Tax Act have created a financial climate that encourages the rehabilitation of historic, income-producing buildings.

In the workshop on the adaptive reuse of industrial buildings, several trends were identified as unique to the American experience. First, planners and developers, state and local officials, bankers and investment groups, and the general public have all become more aware of the industrial and technological heritage that made America the most advanced nation in the world. Industrial districts in many American cities no longer are perceived automatically as urban eyesores. Indeed, we may be approaching the day when sites and structures representative of technological achievements stand in the same light as stately mansions, battlefields, and courthouses. Interest in the identification, protection, and preservation of industrial and engineering sites and structures appears to exist in most parts of the country.

Second, we have moved beyond the concept of single-site preservation. The projects discussed at the conference were not small, single-building proposals, but large, multistructure complexes that in earlier years would have been considered “white elephants” — too expensive and too problematic to deal with. Industrial archeologists always have believed that the more unusual and complex a site, the more likely that the design solution for adaptive reuse will be innovative and more interesting than run-of-the-mill single-building conversions that are peppering our cities with kitchenware boutiques, candle shops, and quiche parlors. Perhaps it is unfair to characterize the conversion projects we read about as pat solutions that now are approaching redundancy; perhaps what we are witnessing is a necessary preliminary phase that puts a building in a holding pattern until design professionals and developers have the opportunity to experience adaptive reuse and try out different ideas.

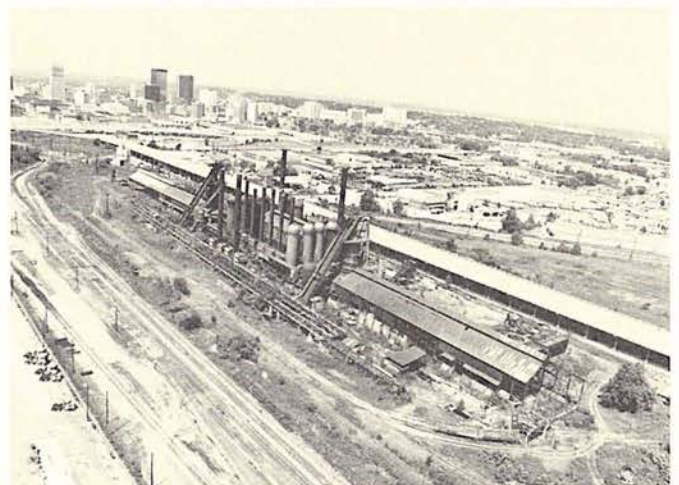
During the 1970s, the American historic preservation movement advanced light years in the recognition and appreciation of buildings past. Industrial buildings represent a unique category of building types: they have become primary symbols of a rehabilitation renaissance that has no precedent in history. What follows in this and succeeding issues of SIAN is a close-up look at some of the most successful adaptive reuse projects in the country.

FROM IRON FURNACES TO CITY PARK

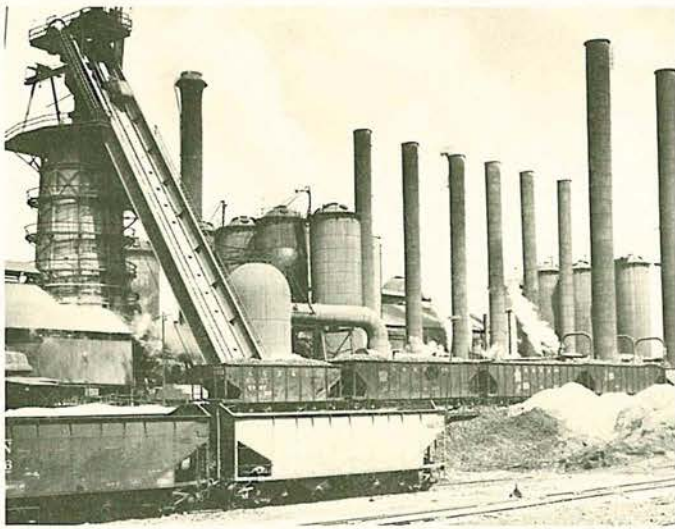
First in a Series

Situated on 17.4 acres one mile from City Hall in downtown Birmingham, Ala., the Sloss-Sheffield Steel & Iron Co. furnaces [SIAN Nov. 72:1, Mar. 78:1, July 79:1, Sept. 79:6] were a dominant feature of the city's skyline until 1971 when the fires were quenched because of stringent new environmental regulations. Fortunately, though, the site was not razed. An enlightened group of citizens submitted a proposal for the creation of a blast furnace museum to the Jim Walter Corp., owner of the site. What must have seemed like an audacious idea called for the development of the Sloss Furnaces as a major entertainment park, combining family rides and attractions with educational exhibits similar to Six-Flags Over Georgia or Disney World. Questionable as the proposal was, it put the site on hold while the proposal was debated and groups coalesced around the idea of saving the furnaces.

The furnaces were documented by the Historic American Engineering Record (HAER) in 1976, shortly after the owner announced plans to demolish them to make way for a new industrial park. A HAER recording team prepared measured drawings, photographs, and a historical report. Because of its size and complexity, Sloss proved to be one of the most difficult sites ever recorded by HAER.



Aerial view of the Sloss Furnaces (1927-29) shows their proximity to downtown Birmingham, Ala. Bill Wilson Studio photograph.



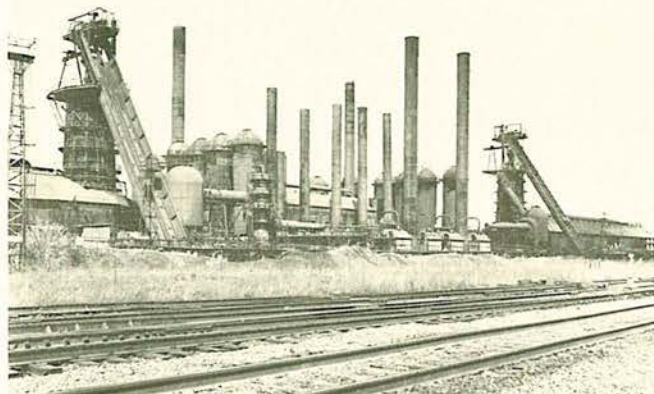
Sloss Furnaces, ca. 1951. At left is No. 2 Furnace with skip hoist used to charge the furnace with iron ore, coke, and limestone. *Photographer unknown.*

The site consists of two steel-encased blast furnaces, with casting sheds, stoves, blowing engines, and other ancillary buildings and equipment.

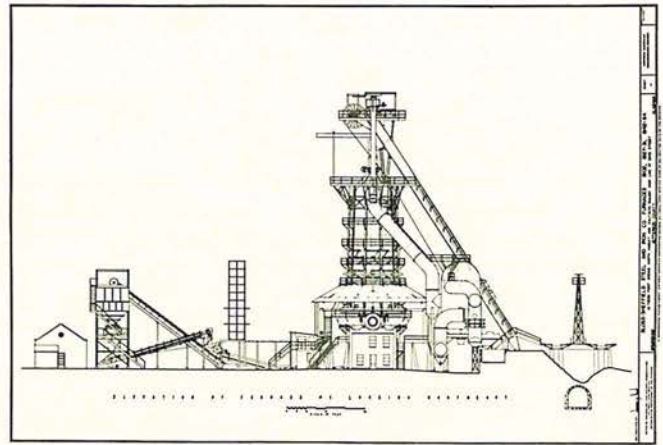
Based on the HAER study, Sloss was found to be one of the best surviving sites representing early 20th-c. ironmaking technology. Viewed nationally, preservation of the Sloss Furnaces would make a significant contribution to the history of ironmaking in the U.S. Saugus Ironworks, in Mass., representing the colonial era of ironmaking, and Hopewell Village in southeastern Pa., representing a 19th-c. iron plantation, already are preserved by the National Park Service. Sloss and adjacent sites in the Jones Valley area of Birmingham—which claims to be the “only spot on the globe where coal, iron ore, and limestone for making steel are found in abundance”—would complete the story with an interpretation of 20th-c. developments. (The quotation is taken from a sign painted on the side of a Birmingham building.)

As with any complicated project, Sloss has had its share of problems. At the request of the newly formed Sloss Furnace Assn., a special study committee appointed by the city council formally recommended the preservation of Sloss Furnaces for its educational, cultural, and historic value—a subtle departure from the theme-park concept. In May 1977, to the surprise of the mayor and other city officials, Birmingham's citizens voted approval of a \$3 million bond issue for development of Sloss. The city appointed a project director, David McMullin, and at his advice retained Hardy Holzman Pfeiffer Associates (HHPA) of N.Y.C. to prepare a master plan and economic feasibility study. An additional 15 acres were purchased in 1980, bringing the total area available for development to over 35 acres.

In June 1980, HHPA presented its proposal. It went far beyond the restoration of the two furnaces, though these structures would be the



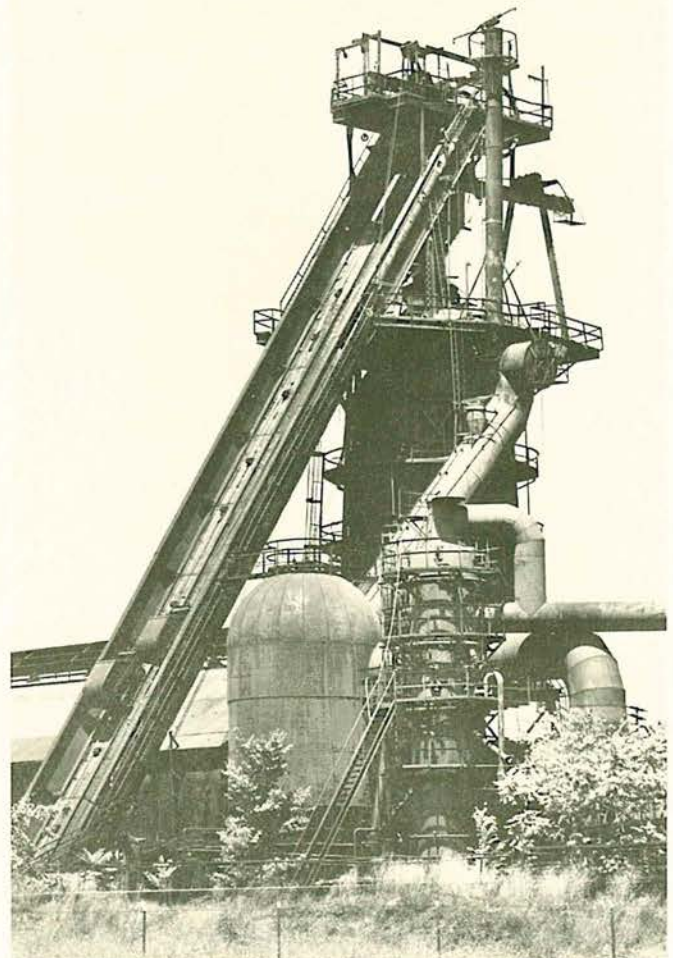
Sloss Furnaces in 1976, five years after they were closed down. *Jack Boucher photograph for HAER.*



HAER drawing of No. 1 Furnace showing downcomer pipe and dust-chamber at right, slag machine at far left. *James Hunt, Delineator.*

focal point of a “Museum of Modern Times.” The focus of the design was the development of a major cultural center for the southeastern U.S. Constructed adjacent to the restored furnaces would be a Museum of Science, Technology, and Culture; an Omnimax Theatre (a full-scale Roman theatre); an Olympic-size swimming pool; a gymnasium; and a pavilion for African culture and history.

The feasibility study prepared by HHPA was a bold and imaginative scheme that, if realized, would place Birmingham on the map as a major cultural center of the southeast. HHPA solicited the advice of the best consultants in the museum field and carefully analyzed the costs. For the public presentation, they prepared an integrated sound tape and slide show, a master site plan and model, and an illustrated

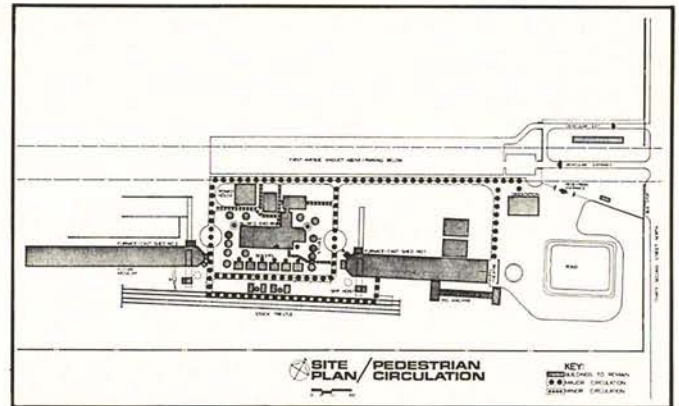


Close-up view of No. 2 Furnace with its skip hoist and, at lower right, downcomer pipe that circulated furnace exhaust to the domed dust-chamber. *Jack Boucher photograph for HAER.*

brochure. The cost of the project, however, was a staggering \$76 million.

During the months after HHPA's presentation and the negative press it received, there was a flurry of activity to resolve the future of Sloss. The mayor's office organized an interim group to look into the situation and to present its recommendations by Oct. 1980. The outcome was a proposal by the Sloss Furnace Assn. for initial development of the site using what remained of the \$3 million bond issue and \$100,000 donated by the Jim Walter Corp. for preservation of the furnaces. Jim Waters & Associates, local architects, prepared a detailed plan and cost analysis of what could be accomplished with the \$1.7 million remaining from the bond issue. The plan called for stabilization of the site's existing fabric, landscape improvements to make the site presentable and safe for the public, lighting the furnaces so they once again would be visible at night, and renovating the former workers' bath house to serve as offices and a visitors' center. This accomplished, Sloss opened for limited guided tours on Apr. 12, 1982, the centennial of the furnaces' blowing-in. The Waters plan specifies future renovation of the major buildings housing turbines, blowing engines, and other operational equipment to serve as exhibits. The complex provides additional space for an iron and steel exhibit donated by the American Iron & Steel Institute.

The permanent preservation and interpretation of the furnaces is by no means assured. Still, there are several lessons to be learned from the Sloss saga. The project demonstrates that the evolution of a restoration project of this magnitude requires a long gestation period; Birmingham has been working on the Sloss project for ten years now. Local officials must carefully consider the wisdom of going out of the region for expertise; while the HHP scheme was



Schematic plan of the Sloss site prepared by Jim Waters & Associates, Architects, of Birmingham.

magnanimous in vision and provided the big idea, it took a small local architectural firm to develop a proposal that was immediately workable within the constraints of available funds. Finally, cities ought not to emulate what other cities have done, but rather be true to their own history, identifying those characteristics that make it unique.

Birmingham is heroic for having had the courage to consider the restoration and interpretation of a pair of abandoned iron furnaces. The next decade will see this idea brought to fruition, it is hoped. Development of the Sloss Furnaces is perhaps one of the most important ongoing preservation projects in the U.S. today.

THE WORK OF IA:

VOLUNTEERING FOR A GOOD CAUSE

On Sat., June 26, some thirty SIA members (mainly MCMOC but including some who had traveled from distant parts) and friends gathered on the banks of the Conococheague Creek seven miles west of Hagerstown, Md., to measure and record Wilson's Bridge. The bridge, a spectacular five-span stone arch structure, was built in 1819 by Silas Harry as part of a general improvement of roads leading to the National Road at Cumberland. Harry was responsible for many fine bridges in Washington Co., Md., as well as Franklin Co., Pa., and as far afield as Martinsburg, W. Va.



SIA members and friends at work recording Wilson's Bridge (1819) near Hagerstown, Md. Kathy Spiess photographs.

Wilson's Bridge remained in use until 1972, although U.S. 40 bypassed the structure in the mid-1930s with a concrete bridge a few yards downstream. Some deterioration occurred after this, but the most serious catastrophe was the collapse in March of this year of about half of the center and an adjacent arch.

Estimates for restoration of the bridge range up to half a million dollars, which does not seem to be forthcoming. Because of the danger to boaters and fishermen of falling chunks of masonry, county commissioners are under pressure to demolish the bridge as soon as possible; hence the need for recording it.

The group divided into four parties ably led by Eric DeLony, Richard Anderson, Philip Spiess, and John Johnson. Excitement was provided by Bill Foshag, who performed simian antics at great heights above the river, while other members disported themselves

into the water, oblivious of snakes, current, and photographers. Members of the Washington County Historical Society provided an excellent luncheon.

The field notes will be drawn to HAER Standards by the Washington County Engineering Dept. under the direction of engineer Glen Dull. Bill Barrett, veteran photographer of many HAER projects, photographed the bridge in large format. H. H. Douglas of the Pioneer America Society volunteered to prepare a historical narrative. (Barrett and Douglas are working together on a book titled *The National Road: A Photo Historical Panorama*, which will document structures along the route from Baltimore to Vandalia, Ill.)

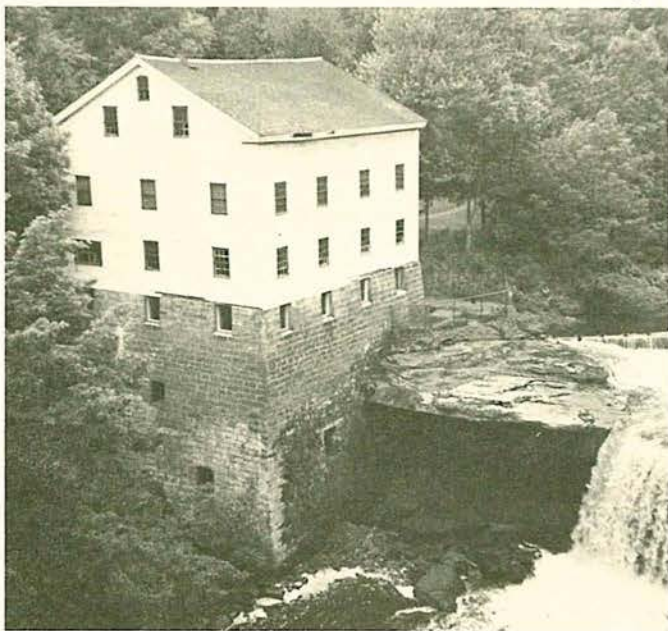


The partially collapsed arch reveals the composition of the stone arch bridge.

Washington Co. is well endowed with stone bridges, most still in use. There are four on the Conococheague alone. Going north from the Potomac, they are the C & O Canal aqueduct at Williamsport; Wilson's Bridge; Broadeningford Road, a four-span arch bridge still in use; and Price's Bridge, a five-span arch bridge that was bypassed in 1979 and also is in danger of collapse. Wilson's Bridge, however, is indisputably the finest early stone highway bridge in the state and, because of its National Road connections, a very important historic structure. A.C.

LANTERMAN MILL EXCAVATIONS: WATER OR TURBINE?

Archeological excavations under the direction of John White, Prof. of Anthropology at Youngstown State University, are being carried out at Lanterman Mill in Youngstown, Ohio. Located in Mill Creek Park, this gristmill, the third on the site, was built in 1844 by German Lanterman and his brother-in-law, Samuel Kimberley. It



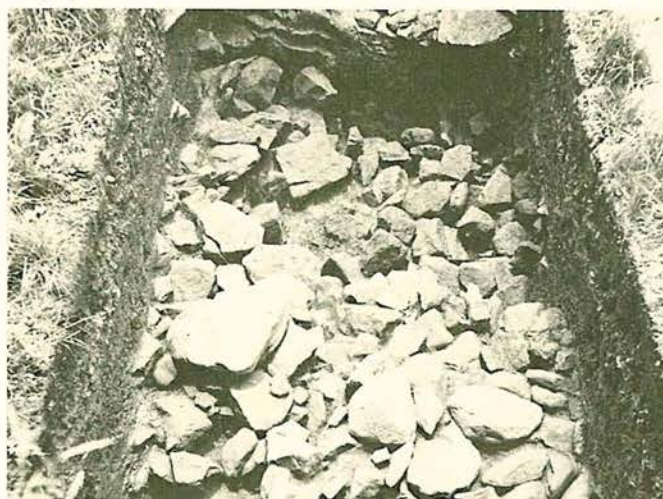
Lanterman Mill on Mill Creek in Youngstown, Ohio. Area at center right (behind fence) is where headrace excavations were made. *John R. White photographs.*

stands adjacent to a 35-ft. falls bearing Lanterman's name. Although records are rather sparse, it is known that the mill continued in operation until 1888. It was acquired by Mill Creek Park in 1892 just one year after the park was established. It was used as a dance hall, and a refreshment stand provided nourishment to both dancers and swimmers, who used the mill as a bath house until about 1917. The mill now houses a park museum featuring local historical exhibits.

Almost square in plan, Lanterman Mill measures 49 ft. by 47 ft. The stone foundation tapers from the creek bed to ground level, being 10 ft. thick at the base and 3 ft. thick at the top. The five-story building measures 90 ft. high from water level to roof comb.

The archeological work was prompted by a need for information on the earliest years of the mill's operation, 1844-1870. Although

photographs dating from 1870 show a turbine in use, it was not known whether this provided the initial motive power. Archeological investigation concentrated in three areas: the deep turbine (or wheel?) pit inside the mill, the area of extensive rockfall adjacent to the pit, and the flat creekside area southwest of the structure. It was



A trench was cut at right angles across the rock-laden headrace. The rocks had been added as fill after abandonment of the race and cessation of water wheel operation.

hoped that the inside excavations might reveal the still-preserved subsurface remains of what would have been the original wheel or associated machinery. The outside work was carried out in order to determine if a headrace lay hidden beneath the surface fill.

Three weeks into the work, the outside excavations revealed a headrace channel 150 cm. below the present surface. Cut deeply through solid bedrock, the race was designed to intercept Mill Creek approximately 50 ft. upstream from the mill and carry water to a large water wheel. Why a water wheel? Because the smaller turbine headrace is already known, and the vertical and horizontal stratigraphy demonstrates beyond any doubt that this newly discovered headrace preceded the turbine race and was, in fact, closed off before the latter was in operation. Hence, what was thought to be, but could not be historically proven, was verified by the archeological record.

Work at the site continues. The Ward Beecher Foundation has donated \$600,000 for the mill's restoration. Within two years it will again be a working gristmill as close to its original appearance as is humanly possible. *J.R.W.*

GREAT FALLS HISTORIC DISTRICT

Continued from page 1

planned industrial city in the U.S. The Colt revolver, steam locomotives, and silk — Paterson was known as the "Silk City" — were among the inventions and industries that boomed here, made possible by the abundant supply of water power supplied by a three-tiered system of raceways. The system was designed by Pierre L'Enfant in 1792 and modified as late as 1838. It is on this later portion that Raceway Park is built.

Many of the forty or more mills that make up the historic district were in operation until the 1960s when they were threatened by demolition for a proposed highway. It was then that Mary Ellen Kramer led a citizens' group in opposing destruction of the city's industrial heritage. This group was later incorporated as the Great Falls Development Corp. Mrs. Kramer received a National Trust Honor Award from the National Trust for Historic Preservation for her catalytic role in saving and rebuilding the district.

Among the Great Falls preservation projects completed or planned are the following:

- **Thomas Rogers Building:** This four-story 19th-c. locomotive erecting shop, restored by the City for \$2 million, has 32,000 sq. ft. of office space, fully rented. The Paterson Museum moved into the first floor exhibit space this summer. Its holdings include two Holland

submarines and the Paterson Colt revolver collection valued at \$159,000.

- **Hydroelectric Plant:** The City is renovating its 68-year-old hydroelectric plant at the base of the Great Falls. When completed in 1983, the plant will begin generating 30 million kilowatt hours of electricity annually. The electricity will be sold to the Public Service Gas and Electric Co., bringing income to the City outside the traditional tax base.

- **Artists' Housing:** Construction is expected to begin soon on a \$9-million Artists' Housing project, a private development that will convert two historic mills into 145 studios and living quarters for artists.

- **Outlet Village:** The City Council is considering the purchase of five or six historic buildings by Urban Universal Structures, Inc., for the creation of a \$5-million Factory Outlet Village designed to draw shoppers from throughout the metropolitan area.

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

MISC. NOTES

"TIMBER ON THE MOVE: A HISTORY OF LOG MOVING TECHNOLOGY" is the title of a 34-min. film recently completed by the Forest History Society. The film highlights the evolution of yarding technology and equipment from colonial times to the present. Purchase or rental information: Mary Beth Johnson, Forest History Society, Inc., 109 Coral St., Santa Cruz, Calif. 95060.

GRAND CENTRAL TOUR. There is a free one-hour walking tour of Grand Central Terminal, N.Y.C., every Wed. at 12:30 P.M. Tours, sponsored by the Municipal Art Society, meet outside Chemical Bank's Commuter Express. Information: MAS, (212) 935-3960.

RAIL STUDY TOURS-INTERNATIONAL offers an extensive tour program for 1982-1983. Among the offerings are rail tours in New Zealand/Australia, Pakistan/India/Nepal, Cuba, Eastern and Western Europe, and China. Information: RST-I, 164 Maple Ave. E., Vienna, Va. 22180; (703) 356-8186.

BALTIMORE'S STEELWORKERS are the subject of a new slide show produced by Linda Zeidman of Essex Community College and the United Steelworkers of America. "A New World from the Ashes of the Old: History and Vision of Baltimore Steelworkers" is based on oral history interviews, photographs, and other materials belonging to the Union. The slide show is in three parts, each 40 min. long: Early Conditions and the Company Town of Sparrows Point; Union Organizing, 1929-1942; Conditions Today. A 16-mm film condensation, 28 min. long, will be available in Sept. Both the film and the slide show, which requires a sound-sync unit, may be borrowed from: Interlibrary Loan, Essex Community College, Baltimore, Md. 21237.

"STRUCTURES," a new exhibit at the Franklin Institute in Philadelphia, opened on June 21. The exhibit explores the architectural elements that support bridges and buildings and examines the forces within these elements. Using do-it-yourself devices, photographs, drawings, and models, visitors can see and experiment with basic structural principles and understand, for example, why an I-beam is shaped the way it is and why domes don't collapse. Visitors can build an arch bridge and understand the principle of compression, or put together the cross section of a Gothic cathedral and understand why a flying buttress is essential to its stability. By designing a truss bridge, visitors can demonstrate the strength of the triangle. The exhibit includes photographic examples of Greek temples, Roman aqueducts, American railroad bridges, and suspension bridges to give visitors a look at some of the practical applications of these principles. The Franklin Institute Science Museum is located at 20th St. and the Benjamin Franklin Parkway. Hours are Mon.-Sat. 10:00 A.M. to 5:00 P.M., Sun. noon-5:00 P.M. Adults, \$3.50; students, \$3.00; children 4-11, \$2.00; senior citizens, \$2.00.

WANTED: OLD BRIDGES. The Welland Canals Preservation Assn., a nonprofit group working on the adaptive reuse of the third Welland Canal as a linear park in the Niagara, Ont., region, requires several small bridges to provide crossings for a bicycle path. Most desirable are bridges dating from the late 19th c.; widths of 6 to 15 ft. and spans of 20 to 80 ft. would be suitable. Bridges will be documented, moved, restored, and maintained. Contact Chris English, P. Eng. [SIA], 37 Mary St., St. Catharines, Ont. L2N 6Y4.

CAST IRON WALKING TOURS. The Friends of Cast Iron Architecture will sponsor two walking tours this fall. The first, to be held on Sun., Oct. 17, will focus on the "Ladies' Shopping mile," stopping at historic cast-iron structures that once housed such stores as Lord & Taylor, B. Altman, Stern Bros., and Macy's. Tour meets at 2:00 P.M. on the steps of Grace Church, E. 10th and Broadway. On Sun., Nov. 7, FCIA will sponsor a tour of the historic SoHo area, which contains the greatest concentration of cast-iron architecture in the world. Tour meets at 2:00 P.M. on the northwest corner of Broadway and Howard St. Cost of each tour is \$2.50. No reservations are required. Information: Margot Gayle, (212) 369-6004.

GRADUATE PROGRAM IN HISTORY OF INDUSTRIAL AMERICA. The Eleutherian Mills-Hagley Foundation and the History Dept. at the University of Delaware are jointly sponsoring the Hagley Program in the History of Industrial America. The program focuses on the social history of American industrialization. Hagley fellows study the context and consequences of economic and technological change within a wide-ranging history curriculum, with emphasis on the impact of industrialization on the daily lives of American workers. Full tuition and a small travel fund are provided. Deadline for application is Feb. 1, 1983, for the 1983-84 academic year. Information: Hagley Graduate Program Coordinator, Eleutherian Mills-Hagley Foundation, P.O. Box 3630, Wilmington, Del. 19807.

INDUSTRIAL ARCHEOLOGY IN THE N.Y.-N.J. AREA will be the subject of the Second Annual Symposium sponsored by the Roebling Chapter of the SIA on Sat., Oct. 16, at Drew University, Madison, N.J. from 10:00 A.M. to 5:00 P.M. Registration fee, which includes lunch, is \$10.00. Reservations and checks to Thorwald Torgersen, P.O. Box 429, Hackettstown, N.J. 07840; (201) 852-8630.

SHOT ANNUAL MEETING. The Society for the History of Technology will hold its annual meeting Oct. 28-31 in Philadelphia at the Hilton Hotel and the University Center Holiday Inn. This year's meeting will be combined with the annual meetings of the History of Science Society, the Philosophy of Science Assn., and the Society for Social Studies of Science. Registration is \$30.00 for non-members, \$40.00 after Oct. 4. Information: Philosophy of Science Assn., Dept. of Philosophy, Michigan State University, East Lansing, Mich. 48824.

RESEARCH QUERIES

The Shawnee National Forest manages the "Great Salt Springs," a major prehistoric and historic salt-processing site located in southern Ill. For an interpretive display, information is sought on 19th-c. salt manufacture in the Midwest. Information about the structure and internal function of pumps and furnaces used for extracting and processing salt water is especially needed to assist in the reconstruction of a pump and associated pipe for the exhibit. Daniel Haas, Forest Archaeologist, Shawnee National Forest, Harrisburg, Ill. 62946.

For a museum exhibit, information is sought on the manufacture of steam industry wood products in southern Ill. from 1870 to the early 1900s. Products included steamboats, crates, carriages, barrels, and farm implements. In our research we have found materials on Eastern industries but little on the Midwest; we would like to focus particularly on the confluence of the Mississippi and Ohio rivers. Advice on research methodology also would be appreciated. Bonnie Krause, Curator of History, University Museum, Southern Illinois University at Carbondale, Carbondale, Ill. 62901.

NEWS OF MEMBERS

CAROL CLARK, Associate Director of the New York Landmarks Conservancy, has received the Charles H. Revson Fellowship from Columbia University "for her record of achievement in working for the betterment of urban life and for her potential to further progress in her field of activity." As a Revson Fellow, Ms. Clark will study urban planning, business, and landmarks preservation law during the coming academic year.

JOHN H. WHITE JR. has received the Senior Achievement Award from the Railway & Locomotive Historical Society. The award honors those whose lifetime work in the field of railroad history merits special recognition. **ROBERT C. POST** and **HERBERT H. HARWOOD** served on the awards panel.

THE AMERICAN SOCIETY OF CIVIL ENGINEERS has donated \$25,000 to the National Museum of American History, Smithsonian Institution, for the creation of an exhibition commemorating the centennial of the Brooklyn Bridge, completed in May 1883.

SIA AFFAIRS

1983 ANNUAL CONFERENCE—CALL FOR PAPERS



Planning for the 1983 SIA annual conference is well under way. The meeting will be held on May 12-15 in Minneapolis-St. Paul, Minn. Conference hotel will be the Radisson St. Paul, overlooking modern barge-loading facilities on the Mississippi River and an 1850s steamboat landing site. A sternwheeler cruise and banquet will feature bridges, hydroelectric power, and grain elevators. Process tours, still being planned,

will include the St. Anthony Falls flour milling district. SIA members will receive registration materials early next year. Others who may be interested should contact John Wickre, Minnesota Historical Society, 1500 Mississippi St., St. Paul 55101; (612) 296-6980. Paper session proposals should go to Robert M. Frame III, James J. Hill Papers, Hill Reference Library, 80 W. 4th St., St. Paul 55102; (612) 227-3339. Deadline is Dec. 1st.

ANNUAL BUSINESS MEETING, MAY 8, 1982, HARRISBURG, PA.

The meeting was convened by Robert M. Vogel shortly after 11:00 A.M. He noted the truly international character of the Society and introduce three special guests: Joseph Bernini (Zurich, Switzerland), Julia Elton (Great Britain), and Robert Irving (Sidney, Australia).

TREASURER'S REPORT. Marlene Nicholson submitted the budget, noting a healthy surplus.

MEMBERSHIP CAMPAIGN. Patrick Malone reported on the work of the Membership Committee (David Shayt, Robert Frame, Eric DeLony, and himself) to re-recruit old, but lapsed, members by means of a special mailing. He noted that the best way to get new members is for present members to solicit them individually. He reminded us of the \$2.50 dues credit for each new member recruited.

PUBLICATIONS. Carol Poh Miller, *SIA* Editor, reported that Case Western Reserve University has agreed to support the *Newsletter* office for two more years. This has been arranged by Darwin Stapleton, to whom thanks are due. Beginning with the Spring 1982 issue, *SIA* will be printed in Cleveland. It is cheaper, and Miller can better exercise editorial control. Dianne Newell reported that issue No. 8 of *IA* will be out this year. Dian Post will continue as Production Editor. Vogel praised Newell for a job well done. Newell thanked HQ personnel for their assistance, as well as the many anonymous members who have served as referees for the articles in *IA*. Newell announced the award of the first Norton Prize to Laurence Gross for his article on the Watkins Mill (*IA* No. 7).

NEW EDUCATION GRANT. Michael Folsom gave a report on the National Endowment for the Humanities grant the Society has received to develop curricula in industrial history for elementary and secondary schools. He emphasized the importance of making this a truly national project through the contributions of SIA members across the country. Folsom introduced David Weitzman, curriculum writer for the project, who noted that the project is built on the premise that *IA* is a subject that can be taught in any classroom. Weitzman requested help in identifying films on industrial processes that can be used in the project's workshops.

LOCAL CHAPTERS REPORT. Vogel introduced Thorwald Torgersen, whom the Board has appointed Local Chapter Coordinator. Torgersen reported that a Standard Operating Procedures manual for local chapters is in preparation but will be held up until constitutional revisions are ratified. He noted that no annual report had been received from the Great Lakes or Latrobe chapters. A Philadelphia/South Jersey chapter is in the offing.

ONTARIO SOCIETY FOR INDUSTRIAL ARCHAEOLOGY. Marilyn Miller reported on the formation (Feb. 27, 1982) of this new society. She acknowledged that the SIA was actually its "parent organization" and explained that the OSIA had considered requesting chapter status, but Canadian tax laws and grant opportunities led the group to form an independent organization.

1983 ANNUAL MEETING. Robert Frame announced that the next annual meeting will be held in Minneapolis/St. Paul, May 12-15, 1983. Acknowledging the expense of travel to the deepest northern Midwest, Frame said every attempt would be made to keep costs down.

1982 FALL TOUR. David Starbuck, former president of the Northern New England Chapter, reported that the chapter had voted to accept responsibility for this year's Fall Tour, which will be held in Maine, Sept. 24-25.

GRATITUDES. Vogel observed that some members of the Board had been hard at work behind closed doors, and thanked especially Amy Schlager for her work on revision of the Society's constitution and Brenda Barrett for her work organizing the Harrisburg meeting.

ANNOUNCEMENT. It wouldn't be an annual meeting without an urgent appeal from Margot Gayle for the preservation of some work of cast-iron architecture. This year she requested that the Society petition David Treen, Governor of Louisiana, to support full funding for the preservation of the Old State Capital building in Baton Rouge. Seconded by Merrill Wilson: unanimous approval.

DEVELOPMENT. Theodore Penn, the Society's Development Officer, announced that his appeal to past and present Board members has raised \$1500 so far. This year he will appeal to the general membership. He hopes to raise \$5000, which will then give him leverage to seek corporate donations. His goal is \$20-30,000 during the coming decade to support the Society's publications.

ANNUAL ELECTIONS. Merrill Wilson, Chair of the Nominations Committee, announced the upset defeat of Patrick Malone for President. More soberly, she suggested to the Board that the timing of election procedures is too tight. And she thanked Robert Vogel and David Shayt for their help in carrying out these procedures. The election results:

For a one-year term on the **Nominations Committee:**

Carol Dubie;

For a three-year term on the **Nominations Committee:**

Amy Schlager;

For **Director:** Thorwald Torgersen and Helena Wright;

For **Vice President:** Larry Lankton; and, on a recount, for **President:** Patrick Malone.

MALONE REGIME BEGINS. Assuming the podium, Malone thanked Vogel for all he had done during Malone's year as apprentice President and promised not to push through his elevation to President-for-Life during the next year.

Meeting adjourned. *Michael Folsom, SIA Secretary*

PHOTO CAPTION OF THE WEEK

A familiar Susquehanna, Pa., landmark, the former Erie Railroad buildings on the corner of Main and Exchange streets, now is just a pile of rubble. By the time the trees begin taking on the shades of autumn, borough residents will find a new complex of buildings in its place. The complex, to be known as "The Shops," will include a supermarket, a bank, and several smaller shops. —*Binghamton (N.Y.) Evening Press*

REVIEWS

Bridges of Metropolitan Cleveland: Past and Present, by Sarah Ruth Watson and John R. Wolfs. Privately printed (Available: ASCE Book Fund, c/o Frank J. Gallo, Dept. of Engineering Technology, Cleveland State University, Cleveland, Ohio 44115), 1981. 107 pp. \$10.00 paperbound

Publications on bridges that do not deal solely with the epic structures but which devote major space to the more commonplace spans are relatively few. For this reason alone *Bridges of Metropolitan Cleveland* is a welcome addition to the literature on historic engineering. A combination of other elements also makes the volume worth owning.

Cleveland has been home to a number of remarkable bridge engineers, men like Zenas King, Amasa Stone, Frank Osborn, and Wilbur Watson. All are touched on in this volume. It is comprehensive, as well, in its treatment of the basic types of bridge materials: wood, stone, metal, and concrete. The Cuyahoga River winds its way through an area of the city known as the "Flats" and is crossed by a wide range of movable bridges that provide an excellent opportunity for comparison. The chapter "Movable Bridges" is, for this reason, unquestionably the most informative.

Cleveland, however, is replete with opportunities for comparative analysis and these, unfortunately, are missed by the authors. The discussion of geological history could have led to an outline of the natural features in the city which require bridging. Describing the varied means of bridging these through time would have shown the progression of engineering techniques and methodologies. The chronological list of "Notable Bridges" in the appendix should be another source of comparative information; instead, dates and names only are given, thus limiting its usefulness.

There are some fairly significant production problems with *Bridges* that mar its overall quality. One has the impression that the manuscript missed several steps between the typewriter and the printing press. The National Register of Historic Places, for example, is referred to by two different titles, both incorrect. Lines are repeated and typographical errors abound. More fundamentally, the text would have benefited from the use of the extensive primary material readily available in places like the Cuyahoga County Archives or that published in the 19th-century annual reports of the Ohio Commissioner of Railroads & Telegraphs.

Because *Bridges of Metropolitan Cleveland* gathers information on a prime "community" of bridges into a single source, it should be an important acquisition for the serious student of engineering. It is the kind of localized bridge study that should be done for other major American cities. *David A. Simmons, Ohio Historical Society*

Badger's Illustrated Catalogue of Cast-Iron Architecture, by Daniel D. Badger with a new introduction by Margot Gayle. Reprint of 1865 edition. Dover Publications, Inc. (180 Varick St., New York, N.Y. 10014), 1981. xvii + 140 pp. \$9.95 paperbound. Available from Friends of Cast Iron Architecture, Rm. 6-C, 235 E. 87th St., New York, N.Y. 10028.

With this reprint, what is unquestionably the most important printed source on 19th-century cast-iron architecture is before us again. Over one hundred magnificent, oversized plates illustrate the output of the Architectural Iron Works of the City of New York, which was headed by Daniel D. Badger. Shown are not only entire building facades manufactured and erected by the company—one of the most prolific of the age—but individual elements including corbels, fences, floor grates, and the impressive classical columns, which Margot Gayle aptly labels "the workhorses of the whole system of cast-iron architecture." The catalogue also illustrates the patent revolving iron shutters, which launched Badger's career and eventually allowed him to move his base of operations from Boston to N.Y.C. in the late 1840s.

Mrs. Gayle, founder and president of the Friends of Cast Iron Architecture, provides a fascinating introduction to the catalogue. Drawing on her vast knowledge of the history of the building material, she illustrates the significance of Badger's work in the context of

his contemporary foundrymen and, for the first time, gathers together many new facts about his life. Starting with basics, Mrs. Gayle defines cast-iron architecture and explains the influence it had on the mid-19th-century building industry—from its labor-saving potential to its adaptability to the florid decoration demanded by Victorian taste. During her purposeful wanderings in search of cast-iron buildings, Mrs. Gayle has seen most of the extant structures illustrated by Badger. These she describes along with many that have disappeared. She also includes information on a number of commissions undertaken by Badger after the catalogue was issued, including the remarkable 1869 trainshed for Grand Central Terminal (demolished 1913) and the recently rehabilitated Gilsey House at 29th St. and Broadway in N.Y.C. *Frederick D. Cawley, Preservation League of New York State*

IA LANDMARKS

Secretary of the Interior James Watt has designated the following two properties National Historic Landmarks:

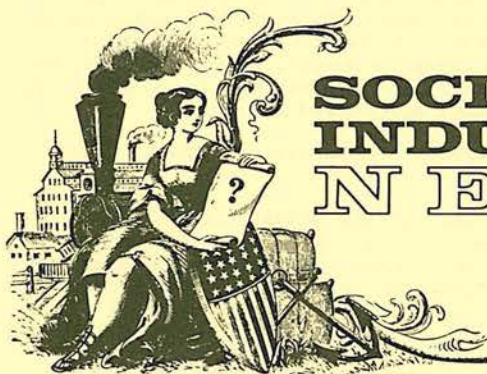
EDISON INSTITUTE, Dearborn, Mich. The Institute is the physical expression of Henry Ford's conception of history as the record of progress in transportation, agriculture, and industry. It is recognized particularly for Greenfield Village and the Henry Ford Museum, both on the grounds of the Institute. The museum, opened in 1929, houses important collections of technology and culture. Greenfield Village, with its re-creations of historic settings, is a prototype of the fabricated "historic" open-air museums. It has inspired similar efforts at many other sites.

PEAVY-HAGLIN EXPERIMENTAL CONCRETE GRAIN ELEVATOR, Minneapolis, Minn. Completed in 1900, this was the first cylindrical concrete grain elevator in the U.S. and perhaps, the world. It is the forerunner of a building type that dominates the landscape in grain-growing regions of the Nation. It is owned by Northland Aluminum Products, Inc.

It may be iffy as "IA," but it's newsworthy nevertheless. In N.Y.'s Greenwich Village, eight bays of one of the buildings that formerly housed the **Manhattan Refrigeration Co.** have been painted with an eight-section mural, 13 ft. high and 128 ft. long, accurately depicting the 20th-Century Limited, ca. 1930. The train is complete with a N.Y. Central Hudson locomotive and Pullman cars heading west into the sunset. It was drawn by projecting an enlarged photograph onto overlay boards. The "train" is stationed on Washington St. between Horatio and Gansevoort sts. The Manhattan Refrigeration Co., closed in 1979, once occupied a city-block complex of nine adjoining buildings. The Rockrose Development Corp. is converting the property into a 234-apartment building called the West Coast. Freight trains formerly chugged through the building into what is now open space behind the mural. Boxcars delivered meat for refrigeration prior to delivery to nearby packing plants.

SIAN NOTES. The Program for the History of Science & Technology of Case Western Reserve University has generously agreed to assist the *Newsletter* for an additional two-year period. The program provides an editorial office and covers all postage, reproduction, and telephone expenses. Special thanks go to Darwin H. Stapleton [SIA], the program's acting director . . . The Editor would like to thank member Jane Carolan of Sloatsburg, N.Y., for her work on bringing the SIAN Index up to date. The index is an invaluable reference tool that is constantly consulted to cite previous SIAN references.

Deadline for receipt of copy for the Fall issue of SIAN is Oct. 15; for the Winter issue, Jan. 15.



SOCIETY FOR INDUSTRIAL ARCHEOLOGY NEWSLETTER

PUBLICATIONS OF INTEREST

A SUPPLEMENT TO VOL. 11 NO. 3

SUMMER 1982

Compiled by Robert M. Frame III, James J. Hill Papers, Hill Library, St. Paul, & Robert M. Vogel, National Museum of American History

BOOKS & ARTICLES

Kendall E. Bailes, *THE AMERICAN CONNECTION: IDEOLOGY & THE TRANSFER OF AMERICAN TECHNOLOGY TO THE SOVIET UNION, 1917-1941*. In *Comparative Studies in Social History*, July 1981 pp 421-48.

David M. Baird, *LIGHTHOUSES OF CANADA*. In *Canadian Geographic*, June/July 1982 pp 44-53; 14 color photographs.

Peter Baskerville, *AMERICANS IN BRITAIN'S BACKYARD: THE RAILWAY ERA IN UPPER CANADA, 1850-1880*. In *Business History Review*, Autumn 1981 pp 314-36.

T.D. Seymour Bassett, *500 MILES OF TROUBLE & EXCITEMENT: VERMONT RAILROADS, 1848-1861*. In *Vermont History*, Summer 1981 pp 133-54.

John Benson, *BRITISH COALMINERS IN THE 19th CENTURY: A SOCIAL HISTORY*. Holmes & Meier (NY), 1980. 276 pp, maps, bibl, \$42.50.

Michael Bezillia, *STEAM RAILROAD ELECTRIFICATION IN AMERICA, 1920-1950: THE UNREALIZED POTENTIAL*. In *Public Historian*, Winter 1982 pp 29-52.

Brian Bowers, *A HISTORY OF ELECTRIC LIGHT & POWER*. Peter Peregrinus Ltd. (Book Publ Dept, Southgate House, Box 8, Stevenage, Herts SG1 1HQ, England) or (PPL Mkt. Administrator, IEEE Svc Center, 445 Hoes La, Piscataway, NJ 08854), 1982. 304 pp. £ 25/15; \$71/43.50. The early years: central power distribution, control, and uses; all UK. Can't say if worth the heavy freight.

Asa Briggs, *THE POWER OF STEAM: AN ILLUSTRATED HISTORY OF THE WORLD'S STEAM AGE*. Univ of Chicago Press (Michael Joseph in UK), 1982. 208 pp, color/b&w illus. \$22.50. Steam in all its forms: RR, stationary, et al, and its impact as well as its reality the world over, from ancient times to today's preservation movement. List of places in GB, US, and elsewhere where steam can be "seen and enjoyed." (!)

Alexander C. Brown, *JUNIPER WATERWAY: A HISTORY OF THE ALBEMARLE & CHESAPEAKE CANAL*. Univ Pr of Virginia (Charlottesville), 1981. 255 pp. \$22.50. Rev: *Va. Magazine of History & Biog.*, July 1982.

Robert Byrne, *THE DAM*. Atheneum Press (NY), 1981. 302 pp. \$13. *Civil Engineering* (July 1982) notes: "At the beginning of the novel, Phil Kramer, the newest employee of the int'l engineering firm of Roshek, Bolen & Benedetz, has a problem. He suspects that the co's. most famous structure, Sierra Canyon Dam, is in danger of failing." And so on. (In 1977 Byrne published *THE TUNNEL*, Harcourt Brace Janovitch, NY.)

Robert A. Chadwick, *MONTANA'S SILVER MINING ERA: GREAT BOOM & GREAT BUST*. In *Montana: the Magazine of Western History*, Spring 1982, pp 16-31. The author is a geologist, so this discussion of the 1860s-90s silver era contains considerable geological detail.

James M. Clifton, *THE RICE INDUSTRY IN COLONIAL AMERICA*. In *Agricultural History*, July 1981 pp 266-83.

David Alan Corbin, *LIFE, WORK, AND REBELLION IN THE COAL FIELDS: THE SOUTHERN W. VIRGINIA MINERS, 1880-1922*. Univ of Illinois Pr. (Urbana), 1981. 294 pp, illus. \$24.95/12.50. Life of the coal miners of the area with emphasis on their rebellion. Includes interviews with nearly 300 former miners. Rev.: *The Journal of American History*, Sept. 1982.

Harriet Crawford (ed), *SUBTERRANEAN BRITAIN: ASPECTS OF UNDERGROUND ARCHAEOLOGY*. St. Martin's Pr (NY), 1979. 201 pp, illus, bibliog. \$19. Compilation of surveys of underground workings, from metals and coal to storage and shelters.

John N. Dickenson, *TO BUILD A CANAL: SAULT STE MARIE, 1853-54 AND AFTER*. Ohio State Univ Pr (Columbus), 1981. 192 pp. \$21.50. Rev: *Business History Review*, Spring 1982.

John Morris Dixon, *CROW'S NEST REFEATHERED*. In *Progressive Architecture*, May 1982 pp 156-57. Rehab of the administrative building perched in the framing of the Tobin Bridge, Boston.

Marianne Doezema, *AMERICAN REALISM & THE INDUSTRIAL AGE*. Indiana Univ Pr (Bloomington), 1981. 142 pp. \$10. paper. Artists' perceptions & depictions of the changes following industrialization. Rev (Russell I. Fries, SIA): *Business History Review*, Spring, 1982.

H.H. Douglas & Bill Barrett, *NATIONAL ROAD BRIDGE IS CRUMBLING*. In *Pioneer America Soc. Newsletter*, July 1982 pp 19-20, illus. The 1819 5-arch stone bridge over the Conococheague Creek, Ohio, described both historically and today.

Bryan Earl, *CORNISH EXPLOSIVES*. Trevithick Soc (Trevenson House, Pool, Redruth, Cornwall, England), 1978. 317 pp, illus, maps. £ 8.50 + post. Rev: *Newcomen Bulletin*, April 1980.

Gerald G. Eggert, *STEEL MASTERS AND LABOR REFORM, 1886-1923*. Univ of Pittsburgh Pr, 1981. 212 pp. \$17.95. A new approach to labor reform in the Progressive-Era steel industry, including scrapbooks, addresses, poetry, and essays.

Paul G. Faler, *MECHANICS & MANUFACTURERS IN THE EARLY INDUSTRIAL REVOLUTION: LYNN, MASS., 1780-1860*. (SUNY Series in American Social History.) State Univ of NY Pr (Albany), 1981. 267 pp. \$34/10. Rev: *Ameri. History Rev*, June 1982: "a . . . complex accounting of the growth of class consciousness among the shoe workers."

D.A. Farnie, *THE MANCHESTER SHIP CANAL & THE RISE OF THE PORT OF MANCHESTER*. Manchester Univ Pr (Manchester, England), 1980. 187 pp. £ 14.50. Rev: *Business History* (England), March 1982.

Michael B. Folsom & Steven D. Lubar (both SIA) (eds.), *THE PHILOSOPHY OF MANUFACTURES: EARLY DEBATES OVER INDUSTRIALIZATION IN THE U.S.* The MIT Pr (Cambridge, MA), 1982. 512 pp. \$45. Interesting series of facsimile-reproduced essays and other documents on the subject, helping to recreate the intellectual, social, and material circumstances surrounding the emergence of the industrial society. A highly worth production, if pricy. Published conjointly with Kulik et al (below) as "Documents in American Industrial History."

- Burton W. Folsom, URBAN CAPITALISTS: ENTREPRENEURS & CITY GROWTH IN PENNSYLVANIA: LACKAWANNA & LEHIGH REGIONS, 1800-1920. Johns Hopkins Univ Pr (Baltimore), 1981. 191 pp, maps, tables, photos, biblio. \$16.50. First vol of "Studies in Industry & Society." Rev: (Thomas C. Cochran) *Pennsylvania Magazine of History & Biography*, January 1982.
- Carl Gersuny, WORK HAZARDS & INDUSTRIAL CONFLICT. Univ Pr of New England (Hanover, NH), 1981. 162 pp. \$14. Built around a study of the accident statistics at two textile mills, incl. Lyman Mills, Holyoke, MA, 1895-1916. Rev: *Business History Review*, Spring, 1982.
- John F. Gilbert (SIA), CROSSTIES TO THE DEPOT. VOL I: VIRGINIA RAILROAD STATIONS. The Crossties Pr (Box 31151, Raleigh, NC 27622), 1982. 60 pp. \$10.95 PPD. Fine photo essay with 240 views of depots large and small, from Richmond's Main St. Station on down, early and late. Map of the state's RRs.
- Paul Goldberger, MAN-MADE MIRACLE ON 42ND STREET. In *The New York Times Magazine*, May 23, 1982 pp 67-68, 72-74. New York's Grand Central Terminal. (See Nevins on GCT, below.)
- Arnold A. Gustafson, LIFE: 1900 TO 1981. Vantage Pr (NY), 1982. 187 pp. \$9. A mining engineer, Gustafson worked at Minn's. Cuyuna iron range until 1934 when he joined Freeport Sulphur Co., Texas, and worked on a variety of internat'l projects until 1961 retirement.
- James P. Hanlan, THE WORKING POPULATION OF MANCHESTER, N.H., 1840-1886. UMI Research Pr (Ann Arbor, MI), 1981. 237 pp, map, illus, tables. \$31.95. Social and labor history of the development of an industrial (textiles) city.
- James E. Hartmann, PRESERVATION SWITCHBOARD. In *Colorado Heritage News*, August 1982 p 4. Colo. Preservation Office coordinates the statewide project to locate, evaluate, register, and preserve archeological resources important to the state's heritage.
- James Hekkers, THE COLORADO RIVER RAILROAD SURVEY: A VISIONARY'S DREAM. In *American History Illus*, July 1981 pp 30-37.
- Ross Heuer, THE SCHREIER EXPANSION. In *Brewers Digest*, July 1982 pp 10-17. Touches on company history while discussing growth of Schreier Malting Co., Sheboygan, Wisc.
- George Hildebrand, BORAX PIONEER: FRANCIS MARION SMITH. Howell-North Books (San Diego), 1981. 320 pp. \$15.
- Robert A. Howard (SIA) & Alvin Gerhardt, Jr., MARY PATTON: POWDER MAKER OF THE REVOLUTION. Rocky Mount Historical Assn (Piney Flats, TN), 1980. 16 pp, illus. \$2.
- Leonard V. Huber, THE MISSISSIPPI LEVIATHANS. In *Louisiana History*, Summer, 1981 pp 239-51. Steamboats in the post-Civil War era.
- Charles K. Hyde (SIA), "DODGE MAIN" & THE DETROIT AUTOMOBILE INDUSTRY, 1910-1980. In *Detroit in Perspective, a Journal of Regional History* (Detroit Historical Soc, c/o Wayne State Univ Pr, Detroit, MI 48202), Spring 1982, p 1 ff.
- Helen Deiss Irvin, THE MACHINE IN UTOPIA: SHAKER WOMEN AND TECHNOLOGY. In *Women's Studies International Quarterly*, No. 3, 1981 pp 313-19.
- Thomas D. Isern, CUSTOM COMBINING ON THE GREAT PLAINS: A HISTORY. Univ of Oklahoma Pr (Norman), 1981. 248 pp, illus. \$14.95. A major work on custom combining; the history of interstate custom combining and a description of the people involved, beginning in the Great Plains during WW-II; continuing to the present. Rev: *Jnl of Amer Hist*, Sept 1982.
- Angela V. John, BY THE SWEAT OF THEIR BROW: WOMEN WORKERS AT VICTORIAN COAL MINES. Croom Helm (Totowa, NJ), 1980. 245 pp. \$29. Contemporary debates about women mine workers in England and attempts to reconstruct life in the mining community of Wigan in W. Lancashire. Rev: *Business Hist Rev*, Spring 1982.
- Bruce L. Johnson, NOTORIOUS "NOBBY" CLARKE & HIS WATER WORKS. In *California Historical Courier*, April 1982 pp 4-5, illus. History of Clarke's water system that included dams, reservoirs, pumps, and tanks.
- Bill Johnstone, COAL DUST IN MY BLOOD: THE AUTOBIOGRAPHY OF A COAL MINER. (Heritage Record No 9.) Provincial Museum (Victoria, B.C.), 1980. 159 pp. \$3 paper. Rev: *Saskatchewan Hist Spring* 1982.
- Robert J. Kapsch (SIA), PRESERVATION OF HISTORIC STRUCTURES THROUGH DOCUMENTATION: ASCE & THE HISTORIC AMERICAN ENGINEERING RECORD. (Paper delivered April 1982.) ASCE, 345 E 47th St, NYC 10017. Preprint 82-059. 14 pp, illus. \$2. The historic and philosophical relationship between HAER & ASCE, with summary of HAER's mission and activities.
- A.P. Kennedy, A HISTORY OF WATERWORKS IN CANADA. In *Civic Public Works*, Oct. 1981 pp 28-32.
- Jeremy W. Kilar, GRAND OLD MAN OF CAMP SIXTEEN. In *Chronicle: The Magazine of the Hist Society of Michigan*, Winter 1981 pp 20-23. Frank I. Wixom (1863-1943) built several dams along Michigan's Tittabawassee R. in order to reinvigorate the economy in the cutover region.
- Maury Klein, FROM UTOPIA TO MILL TOWN: Pts. 1 & 2. In *American Hist Illus*, Oct. 1981, pp. 35-41, 48; Nov. 1981, pp. 36-43. Pt. 1--Boston Associates & Lowell; Pt. 2--The Mill Girls.
- Karl R. Koenig, MT. RAINIER SCENIC RR: WESTERN WASHINGTON FOREST INDUSTRIES MUSEUM. In *Pacific News*, No. 237, May 1982 pp 6-11. Tacoma outfit operates a 3-truck Climax (1928) & 3-truck Heisler (1929) over Weyerhaeuser Co's. Chehalis Western track & plans a museum bldg.
- Gary Kulik (SIA), Roger Parks & Theodore Penn (SIA), (Eds.), THE NEW ENGLAND MILL VILLAGE, 1790-1860. MIT Press (28 Carleton St., Cambridge, MA 02142), 1982. 400 pp., 49 illus. \$40. Conjointly published with Folsom et al (above) as "Documents in American Industrial History."
- Larry D. Lankton & Charles K. Hyde (Both SIA), OLD RELIABLE: AN ILLUSTRATED HISTORY OF THE QUINCY MINING CO. The Quincy Mine Hoist Assn. (Box 265, Hancock, MI 49930), 1982 159 pp 150 photos. \$27.50 PPD. "Old Reliable" for its long and profitable operation. Solid and interesting account of a mine that extracted and smelted copper in Upper Michigan for some 135 years. All aspects of a largely self-contained venture, including the below and above-ground works. Site, of course, of the legendary "Quincy Hoist," built by Nordberg of Milwaukee in 1920, the largest steam hoist in the world, ever, preserved *in situ*. All drawings of the HAER 1978 survey included. An important record of an important firm.
- William H. Lazonick, PRODUCTION RELATIONS, LABOR PRODUCTIVITY, & CHOICE OF TECHNIQUE: BRITISH & U.S. COTTON SPINNING. In *Jnl. of Economic Hist.*, Sept. 1981 pp 491-516.
- Linda Legner, SUPERSALESMAN FOR A NEW KIND OF PARK. In *Historic Pres*, Mar-Apr 1982 pp 26-31. Preservationist Gerald W. Adelmann's proposal for the Illinois & Michigan Canal National Heritage Corridor, to follow the I & M Canal between Chicago & LaSalle.
- Edward A. Leonard, RAILS AT THE PASS OF THE NORTH: A CENTENIAL HISTORY OF EL PASO'S RRS. (Southwestern Studies No. 63.) Texas Western Pr. (El Paso 79968), 1981. 60 pp, illus, map, biblio. \$3 paper.
- Felicity L. Leung, GRIST & FLOUR MILLS IN ONTARIO: FROM MILLSTONES TO ROLLERS, 1780s-1880s. National Historic Parks & Sites Branch, Parks Canada, 1981. (Avail.: Canadian Govt. Publ Centre, Supply & Services Canada, Hull, Quebec K1A 0S9.) 293 pp, illus. \$15. Canada /\$18. elsewhere. Changes in methods of milling wheat in the province during the century: the machinery and technology available and some of the economic, social, political, and geographical influences affecting the industry. Sections on the architecture and power of mills as well as the immediate technology. Good bibliog. Fine, thorough work.
- Sue MacLeod, MARITIME MUSEUM: AT LAST, A HOME OF ITS OWN. In *Canadian Geographic*, June/July 1982 pp 72-75. Maritime Museum of the Atlantic in Halifax, N.S.
- Dena S. Markoff, A BITTERSWEET SAGA: THE ARKANSAS VALLEY BEET SUGAR INDUSTRY, 1900-79. In *Colorado Magazine*, Summer/Fall 1979 pp 161-78. In SE Colo., includes factory photos, then and now.
- J.D. Marshall & John K. Walton, THE LAKE COUNTIES FROM 1830 TO THE MID-20th C: A STUDY IN REGIONAL CHANGE. Manchester Univ Pr (Manchester, England M13 9PL), 1981. 320 pp, photos, maps. £ 13.50. Incl. technological history.

Louis G. May, NORTH CAROLINA PINE--THE FORGOTTEN LUMBER. In *Southern Lumberman*, Aug 15, 1981 pp 7-10. Summary history of the softwood industry of Virginia, NC, the product commercially known as North Carolina pine from 1880 to 1930.

John W. McGrain (SIA), "GOOD BYE OLD BURR": THE ROLLER MILL REVOLUTION IN MARYLAND, 1882. In *Maryland Historical Mag*, Summer 1982 pp 154-71. Fine essay on the greatest revolution in the history of flour milling, still controversial due to the heating of the flour & loss of nutritives thereby.

Martin V. Melosi, GARBAGE IN THE CITIES: REFUSE, REFORM, & THE ENVIRONMENT: 1880-1980. Texas A & M Univ Pr (College Station), 1981. 392 pp. \$21.50. Based on municipal documents, popular & technical publs, and census data: a study of urban attempts to deal with refuse (mostly pre-1920) and its production (mostly later).

Carl I. Meyerhuber, Jr, ORGANIZING ALCOA: THE ALUMINUM WORKERS' UNION IN PENNSYLVANIA'S ALLEGHENY VALLEY, 1900-71. In *Pennsylvania History*, July 1981 pp 195-219.

Conrad Milster (SIA), AMERICAN UNIFLOW MARINE STEAM ENGINES. In *Marine Propulsion* (GB), May 1982, pp 22-24, 27-28. Interesting historical survey of the most efficient form of reciprocating engine, as used on the water, and its future there, of which it seems to have one.

_____, EXAMINING THE CORNISH ENGINE. In *Iron Man Album-Magazine*, July-Aug 1982, pp 5-10. Overview of evolution and operation, with photos of engines at East Pool & Alar Mine, Pool, Cornwall.

Eugene P. Moehring, PUBLIC WORKS & THE NEW DEAL IN LAS VEGAS, 1933-40. In *Nevada Hist Soc Quart*, Summer 1981 pp 107-29.

Timothy L. Moll, THE DESHLER BROOM FACTORY. In *Nebraska History*, Spring 1981 pp 73-79. Begun in 1890, still going in 1980, now owned by Twin City Mfg Co of Minn.

Willard N. Morss, ON LOGGERS & SLABWHACKERS. In *Loggers Handbook*, 1981 pp 17-19. Compares evolution of technology in logging and sawmill operations.

Vincent Moses, MACHINES IN THE GARDEN: A CITRUS MONOPOLY IN RIVERSIDE, 1900-36. In *Calif History*, Spring 1982 pp 26-35. Discussion, with photos, of fruit handling & processing machines, incl Lemon Sizer, Fruit Separator, Rope & Roll Orange Sizer, CIW Fruit Distributor, Smudge Pot Maker, &c.

David Mountfield, THE RAILWAY BARONS. Norton (NY), 1979. 224 pp, illus, bibliog, index. \$15.

James A. Mulholland, A HISTORY OF METALS IN COLONIAL AMERICA. Univ of Alabama Pr (University), 1981. 215 pp, illus, maps, bibliog, index. \$18/9. Rev: *Penna Mag of History*, Jan 1982.

George Musk, CANADIAN PACIFIC: THE STORY OF THE FAMOUS SHIPPING LINE. David & Charles (N. Pomfret, VT), 1981. 272 pp, lists, maps, appendices, bibliog. \$45. About CP Steamships Inc.

Surendra Ojha & Josef Womelsdork, INSPECTING TOWN BRIDGES IN CONNECTICUT. In *Civil Engineering*, July 1982 pp 62-64. Inspection of off-system spans from engineer's viewpoint. Notes stone arch bridge in Killingly, built 1700.

Edward Pessen, A YOUNG INDUSTRIAL WORKER IN THE EARLY WORLD WAR II IN N.Y. CITY. In *Labor History*, Spring 1981 pp 269-81.

Joyce Shaw Peterson, AUTO WORKERS AND THEIR WORK, 1900-33. In *Labor History*, Spring 1981 pp 213-36.

Loretta Pineda, COLORADO'S INACTIVE MINE PROGRAM. In *Colo. Heritage News*, August 1982 p 4, illus. Its purpose is to minimize hazardous situations associated with past coal-mining; also, to preserve the historic and cultural aspects of the sites.

Larry Remele, SEWAGE DISPOSAL AND LOCAL POLITICS AT JAMESTOWN, 1926-29: A CASE STUDY IN NORTH DAKOTA URBAN HISTORY. In *North Dakota History*, Spring 1982 pp 22-29. Includes diagram of Imhoff tanks like those constructed at Jamestown.

Terry S. Reynolds (SIA), CISTERNS & FIRES: SHREVEPORT, LA, AS A CASE STUDY OF THE EMERGENCE OF PUBLIC WATER SUPPLY

SYSTEMS IN THE SOUTH. In *Louisiana History*, Fall, 1981 pp 337-67.

William Rintoul, DRILLING AHEAD: TAPPING CALIFORNIA'S RICHEST OIL FIELDS. Valley Publs (111 Pacific Ave, Santa Cruz 95060), 1981. 291 pp, index. \$20.

David J. St Clair, THE MOTORIZATION & DECLINE OF URBAN PUBLIC TRANSIT, 1935-50. In *Jnl of Economic History*, Sept 1981 pp 579-600.

Judith St George, THE BROOKLYN BRIDGE--THEY SAID IT COULDN'T BE BUILT. G.P.Putnam's Sons (NY), 1982. 125 pp, illus. \$10.95. A young people's book, and not a bad account of this great project, but why do we have to take so much notice of the very few uninformed cranks who were, in fact, the only ones who said that? Is that what we have to do to sell books to kids? Maybe G.P.'s boys said that otherwise it couldn't be sold.

Esa Santala, THE KIRKENES PULP MILL PROJECT, 1956-61. In *Scandinavian Economic Hist Rev*, No. 1, 1980 pp 33-52.

Nancy B. Schrier, HIGHGRADE: THE MINING STORY OF NATIONAL, NEVADA. Arthur H. Clark Co. (Glendale, CA), 1981. 150 pp, illus. \$19.95. A gold mine near Winnemucca that worked 1907 to 1943. Rev: *Montana: the Magazine of Western History*, Spring 1982.

Philip Scranton, FINANCE, CULTURE, & TECHNOLOGY: RECENT STUDIES OF BRITISH & AMERICAN INDUSTRY. In *Pennsylvania Mag of History & Biog*, Jan 1982 pp 111-21. A review essay of Cottrell, *Industrial Finance, 1830-1914*; Joyce, *Work, Society, & Politics*; Jeremy, *Transatlantic Industrial Revolution*; and Cochran, *Frontiers of Change*.

William H. Shank (SIA), et al, TOWPATHS TO TUGBOATS: A HISTORY OF AMERICAN CANAL ENGINEERING. American Canal & Transportation Center (809 Rathton Rd, York, PA 17403), 1982. 76 pp, illus. \$6.75 Ppd. The story of Wright, Baldwin, White, and the others, up to Goethals, incl many of the lesser knowns. The first canal book from the engineering standpoint.

Jerrell H. Shorner, POSTSCRIPT TO THE MARTIN-TABERT CASE: PEONAGE AS USUAL IN THE FLORIDA TURPENTINE CAMPS. In *Florida Hist Quart*, Oct 1981 pp 161-73. Forced labor, 1920s-40s.

Frank N. Shubert, VANGUARD OF EXPANSION: ARMY ENGINEERS IN THE TRANS-MISSISSIPPI WEST. Dept of the Army, Office of the Chief of Engineers (Wash, DC), 1981. 160 pp, illus, maps, bibliog. \$4.50 paper. Rev: *Western History Quart*, April 1982.

Marion O. Smith, CONFEDERATE SALTPETRE MINING IN NORTHERN ALABAMA. In *Alabama Hist Quart*, Spring-Summer 1980 pp 72-86.

Barbara Stack, HANDBOOK OF MINING & TUNNELLING MACHINERY. John Wiley & Sons (NY), 1982. 742 pp, heavily illus. \$91. Tour de force describing every type of drill, shield, coal cutter, full-area machine, stripping shovel, and other device, from the very beginnings to the present day. Really the final word.

David R. Starbuck (SIA), INDUSTRIAL ARCHEOLOGY & THE ELI WHITNEY CONTROVERSY. In *Jnl of the New Haven Colony Historical Soc*, Fall, 1981 pp 35-41, illus. Is Eli Whitney's legend valid? IA at his armory has succeeded in the physical recording, but has not produced new information useful to scholars. (But . . . see IA, Vol. 8, 1982.)

Barbara Sudler, REWINNING THE WEST. In *Colorado Heritage News*, July 1982 p 2. Colorado Hist Soc has restored a historic train ride and mine project depicting two themes of the Amer. legend: RRing and mining.

Clarence N. Trefry & Narcissa G. Chamberlain (eds), THE SHOE-MAKING INDUSTRY IN MARBLEHEAD: A REMINISCENCE. In *Essex Institute Historical Collection*, July 1981 pp 213-22.

Gladys Orcutt Urey, ICE PLANT. In *Oregon Hist Quart*, Summer 1982 pp 195-99. Brief account of her father's ice-cutting operation for refrigerated RR cars on the Oregon Short Line; early illus of ice house and ice cutting.

Lawrence & Lucille Wakefield, SAIL & RAIL: A NARRATIVE HISTORY OF TRANSPORTATION IN THE TRAVERSE CITY REGION. Village Pr (Traverse City, MI), 1980. 216 pp, 250 illus. \$20. Rev: *Inland Seas*, Spring, 1982.

T.H. Watkins, HISTORY BY A DAM SITE. In *American Heritage*, Dec 1981 pp 46-47. Round Lake logging dam on Wisconsin's Flambeau River.

Carol Holderby Welsh, CATTLE MARKET FOR THE WORLD: THE OKLAHOMA NATIONAL STOCKYARDS. In *Chronicles of Oklahoma*, Spring 1982 pp 42-55.

Theodore A. Wertime & James D. Muhly (eds), THE COMING OF THE AGE OF IRON. Yale Univ Pr (New Haven), 1980. 555 pp, illus, bibliog, index. \$29.50. How, why, and where metallurgy developed.

Thomas R. Winpenny, MILL HANDS & BOILERS: THE ANATOMY OF A DISASTER. In *Jnl of the Lancaster Co Hist Soc* (Penna), No. 3, 1981 pp 110-24.

Robert F. Zeidel, BEER RETURNS TO CREAM CITY. In *Milwaukee History*, Spring 1981 pp 20-32.

COUNTY & CONSULTANTS REHABILITATE BRIDGES. In *APWA Reporter* (Amer Public Works Assn), Mar 1982 pp 22-24. Particularly the bridges of Pittsburgh and Allegheny County.

THE ENCYCLOPEDIA OF AMERICAN FOREST & CONSERVATION HISTORY: A REVIEW. In *Jnl of Forest History*, Oct 1981 pp 209-21. Discusses forthcoming (1983) 2-vol encyclopedia and incl four sample articles. Of IA interest: Chas. F. Carroll: "Wooden Ships & American Forests", and Carl Abbott, "Plank Roads & Wood-Block Pavements."

NEW RAIL MILL IN THE U.S. In *Progressive Railroad*, Dec 1981 pp 42-44. Photos and perspective flow chart of Wheeling-Pittsburgh Steel's new mill, only one in the US to incorporate the universal rolling method.

TIME CATCHES UP WITH SETH THOMAS' CONNECTICUT HISTORY. In *New England Business*, July 5, 1982 pp 52, 55. Thomaston plant will close when firm moves to Georgia.

SPECIAL PUBLICATIONS

David Beuten, 18th CENTURY WEDGWOOD: A GUIDE FOR COLLECTORS & CONNOISSEURS. Pitman Books Ltd (39 Parker St, London WC2B 5PB), 1980. £ 9. Publ for 250th anniversary of W's birth; incl much information about manufacturing problems faced.

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BIBLIOGRAPHIC NOTES

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HISTORY OF TECHNOLOGY: Bookcell Books, 90 Robinwood Rd, Hamden, CT 06517, (203) 248-0010, publishes catalogs on occasion with much H-O-T & related interest, out-of-print, at very pleasant prices.

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