



SOCIETY FOR INDUSTRIAL ARCHEOLOGY

NEWSLETTER

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SIA savors industrial Philly, 'Workshop of the World'



The Richmond Generating Station's coal tower (1925) on Pier 225, Delaware River, for the Phila. Electric Co. Large buckets unloaded barges on both sides; inside, the coal was crushed and sifted, then conveyed to bunkers. *R. Frame photo.*

Let us announce it directly: the SIA's 19th Annual Conference in Philadelphia was a resounding success, thanks to our excellent hosts, the Oliver Evans Chapter and the Mid-Atlantic Regional Office, National Park Service. For one long weekend, 19th- and early-20th-century industrial Philadelphia came out of the closet as the "Workshop of the

World." It wasn't easy, but the 18th century was temporarily trip-hammered into submission.

In an almost mystically Byzantine circuit of tours, banquets, receptions, and open houses, more than 300 of the faithful—surely some kind of record—reveled in the historical remnants of the city's vast transportation and utility



69th ST. TERMINAL & CAR SHOPS, MARKET-FRANKFORD EL.

Above: Inside the car shop. *E.M. Kutsch photo.*

Below: Inside the motor shop. *R. Frame photo.*



Friday evening reception, tour, and Philly barbeque at the National Historic Landmark Fairmount Water Works (1812-72). *L.A. DeYoung photo.*

networks, mills, manufactories, and other sites of IA interest. When we weren't focusing on industry, we were absorbing the multicultural nature of neighborhoods with such intriguing names as Fishtown, Nicetown, Manayunk, and Northern Liberties, along with the nationally renowned Germantown, Fairmount Park, and South Philly. It was a conference that attempted the widest reach imaginable.

We learned about Philly IA by the immersion method, confronting over a dozen tours and other "pre-conference" events early on Thursday afternoon. Juggling armloads of registration packets, books, posters, and hardhats, we were hustled off in small groups to many of the city's early industrial neighborhoods. Travelling on foot, by bus, and even trolley, we visited a multitude of sites, including the Henry Disston & Sons Saw Works, textile mills along the Manayunk Canal, leather industry buildings, and Asher's Candy Co. Those with specialized IA interests in bridges and breweries had tours of their own. Latecomers had to settle for open houses at the Atwater Kent Museum and the American Philosophical Society. By Thursday evening, many of us had already worked our way through miles of local industry and several rolls of slide film, and the conference hadn't even been officially opened yet!

But leave it to the Oliver Evanses to put their own spin on the traditional Welcoming Reception, located at the Atwater Kent Museum and nicely accommodating those who would never find time to visit there otherwise. Disdaining the usual wine 'n cheese, the chapter assembled one of the oddest buffets most will ever browse through: Philly Foods. Here the IA gourmet could (and did) sample everything from the indigenous "cheese steaks" (sandwiches), soft pretzels with mustard, and Italian "Hoagies," to the locally manufactured Tasty Kakes, Goldenberg's Peanut Chews, Nabisco cookies and crackers, and Whitman's chocolates, all sloshed down with Ortlief's, Yuengling's, Rolling Rock, and Iron City (Pa. if not Phila.) beers, Chaddsford wines, or Frank's and Champ Cherry sodas. Another local product, Fleer's Double Bubble Gum, was available. An introductory illustrated presentation on Phila. IA rounded out the evening.

Early Friday morning IAing began in earnest with six separate, mostly thematic, process tours. For the first time in its annual-conference history, the SIA had to confront head-on the increasing refusal of firms to open their plants to large tours. Reluctantly, and with great difficulty, the planners arranged the six single-bus tours, offered on a first-come, first-served reservation system. The tours were carefully described, well in advance. It was a valiant effort that

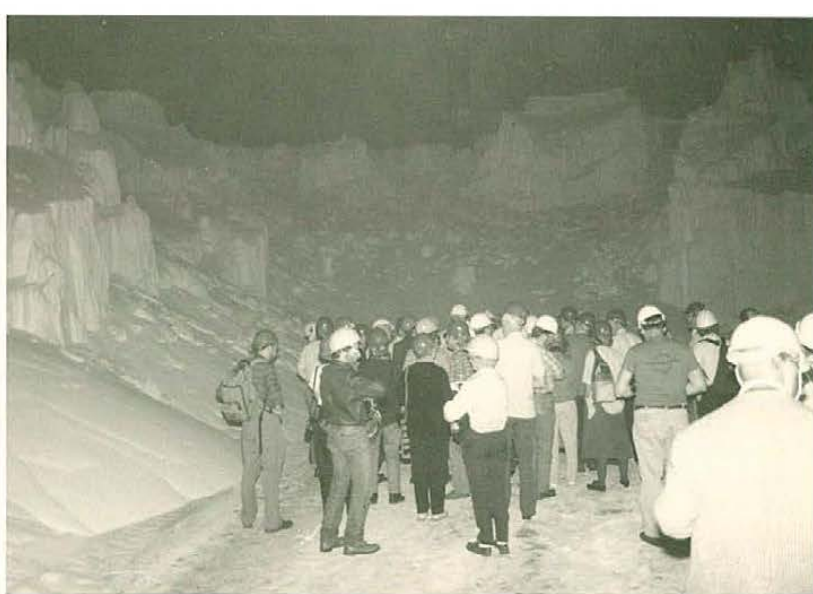


Above: Inside the workshop of the [Samuel] Yellin Metalworkers. C.F. Perez photos.

undoubtedly induced industrial-strength planning headaches, but which turned out surprisingly well.

Tour "A" travelled via the **Market/Frankford Elevated Line** (1904-22) to West and North Philadelphia and Center City, and featured visits to the **Yellin Metalworkers** (in action), the **Reading Terminal Train Shed & Market** (1893), and **Pennsylvania Woven Carpet Mills**, manufacturers of much of the industrial carpeting used in places like airports.

Tour "B" headed northwest and upstream along the Schuylkill River to the mill village of Manayunk, to view the remnants of the 19th-C textile industry on the **Manayunk Canal** (1819). The Manayunk tours included the two surviving spinning mills: **Robert Krook, Inc.**, and **John Wilde & Bro., Inc.**, both producing custom woolen yarn; **Freeland Felt**, a stone post-Civil War mill engaged in needed felt production; **G.J. Littlewood & Sons, Inc.**, a



CONRAIL'S GREENWICH PIERS, Windy Point, Delaware River.

Above: Bulk Import Pier 122 was built c1953 for iron ore, but its four traveling unloaders also serve these Agway storage domes, made of concrete on an inflated bag. The bulk fertilizer inside creates a fantasy landscape. L. DeYoung, R. Frame photos.

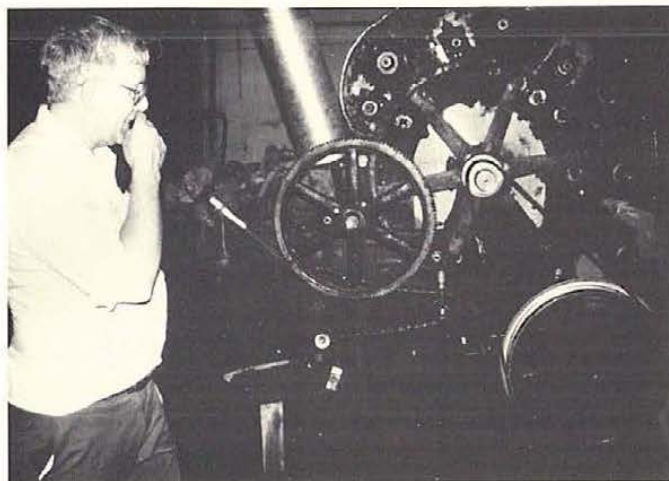
Below: Coal Export Pier 124, built in the late 1920s for the PRR and modernized c1980, has two parallel rotary dumpers and a 5,000 ton/hr. traveling shiploader. E.M. Kutsch photo.





Above: Operating the high pressure, stainless-steel dyeing vats at G.J. Littlewood & Sons, Inc., Dyeworks in Manayunk.

Below: An employee explains the equipment at Freeland Felt, where needled felt is made from waste jute. L. Leopold photos.



Below: Clearly, the turnapulls were not operating when we toured the coal unloading facility at Phila. Electric Co.'s Richmond Generating Station (1925). R. Frame photo.



fifth-generation dyeworks; and two heavy-cardboard plants: **Container Corp. of America, Inc.**, and **Connelly Container, Inc.** In continuous operation at the site since 1884, the Wilde firm is the oldest American carpet yarn company in existence.

Visiting west, south, and southwest Phila., Tours "C" and "D" involved many of the same industries and transportation sites, including the **69th St. Terminal & Car Shops of the Market-Frankford Elevated Line**, Southeastern Pa. Trans. Authority; Conrail's **Coal Export Pier No. 124** (1924, 1979) and **Iron Ore Import Pier No. 122** (1956, 1989), both at Windy Point; and the **General Electric Switchgear Plant** (1924). In addition, Tour "D" took a windshield tour of the 793-acre **Phila. Naval Shipyard**; Tour "C" bussed through the **Phila. Refinery of Sun Refining & Marketing Co.**, an SIA process-tour first.

Tour "E" featured textile IA, and went to Frankford, Germantown, and East Falls, with tours of the **Globe Dye Works**, managed by the fifth generation of one of the founders; **Huntingdon Yarn Mill**; **Wayne Mills**, weavers of narrow tapes and now occupying the **New Glen Echo Mills** (1885, 1908). A final stop at the **Phila. College of Textiles & Science** provided an insight into modern computer-controlled textile operations.

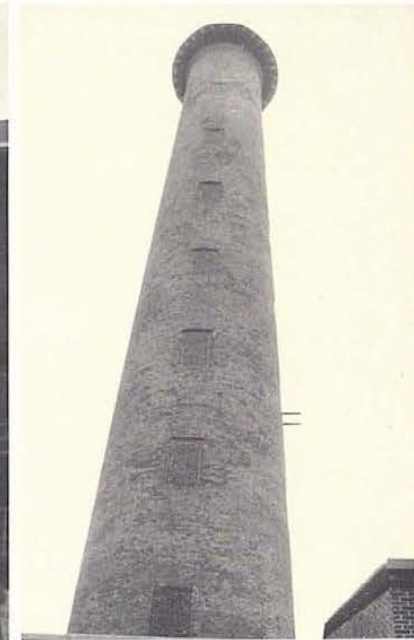
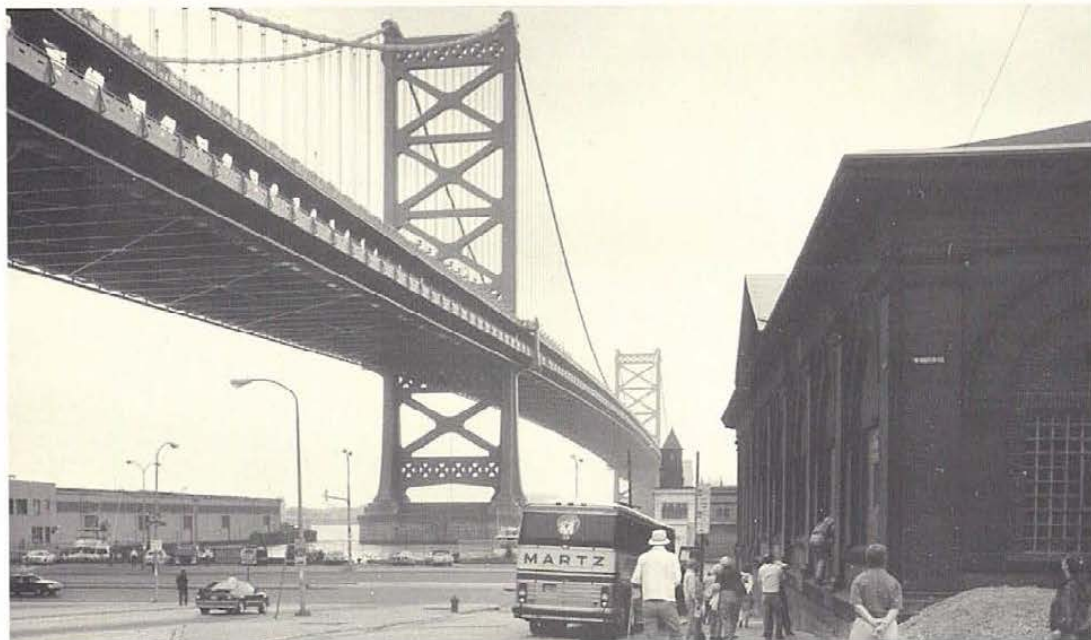
Tour "F" travelled to the Conshohocken and King of Prussia area to tour the **Simpson Paper Co.**; the rolling mill of **Lukens, Inc.**, where women were operating the controls; and the **Phila. Gear Corp.**, which specializes in the design and manufacture of large, high capacity, power-transmission equipment.

Friday concluded with a special barbecue at the **Fairmount Water Works [NHL]**, which was constructed in stages between 1812 and 1872. All were free to wander through the buildings and inspect the *in situ* 1851 Jonval turbine, gear train, and pump. Guides explained the site's history, on-going archeology, and planned "interpretive center." All this was followed by an informal "show & tell" back at the hotel.

On Saturday, the traditional day for scholarly presentations, registrants had the opportunity to hear over 50 papers in

Below left: The 9,570-ft. Benjamin Franklin Bridge (about the only time Ben was mentioned during the conf.) was the world's longest suspension bridge when built in 1921-26. At right is a 1908 high pressure, fire-service station, designed to pump river water into an independent hydrant system.

Below right: Sparks Shot Tower (1808), oldest standing industrial feature in So. Phila. R. Frame photos.





The Oliver Evans Chapter SIA has designed and produced a special Fairmount Water Works pewter belt buckle as a souvenir of the SIA's 19th Annual Conf. in Phila. The image is based on a view embossed on the cover of the 1869 *Annual Report of the Dept. for Supplying the City with Water*, and the back is inscribed: "Fairmount Water Works on the Schuylkill River in Philadelphia, Pennsylvania c. 1858. First large municipal waterworks. Designed by Frederick Graff, Superintendent 1812-1846. Three power systems; steam engines, breast water wheels, Jonval hydraulic turbines. Decommissioned 1911. National Historic Landmark, National Historic Civil Engineering Landmark, National Historic Mechanical Engineering Landmark." The chapter worked with the Phila. Buckle Co. and the Siskiyou Forge to mint the buckle. Avail. for \$22.50 ppd. from Rebecca Shiffer, 1528 Pine St., Phila. PA 19102. Checks to "Oliver Evans Chapter SIA."

four concurrent sessions. The Annual Business Meeting, with unannounced "guest" speaker from Hopewell Furnace, was conducted during the luncheon (see Secretary's Report in "SIA Affairs" section).

Saturday evening was spent dining and dancing aboard the *USS Olympia*, the 1892 protected cruiser that was Admiral Dewey's flagship at the Battle of Manila Bay ("You may fire when you are ready, Gridley") and the sole survivor of the turn-of-the-century "new steel navy." The ship, including the starboard engine room with its triple-expansion engine, was open for inspection, as was the 1945 guppy-class submarine *USS Becuna*, tied up alongside.

Sunday was a very full day of drive-by bus tours, photo opportunities, and walk-throughs, traversing as much of the entire Phila. area as possible. Highlights were Reading Terminal, Sparks Shot Tower, Benjamin Franklin Bridge, Richmond Generating Station, Disston Saw Works, Frankford Arsenal, Bromley Mills, Budd Co., Midvale Steel, RittenhouseTown, Manayunk Canal & Lower Locks, Falls Bridge, and Strawberry Mansion Bridge.

All of the foregoing would have been enough—more than enough, in fact—for most three-day conferences. But, there was more. For those who stayed on through Monday, two

special tour options were available: a visit to the wonders of the **Hagley Museum & Library**, Wilmington, Del., or a tour of the fanciful tiled, reinforced-concrete creations of Henry Chapman Mercer in Doylestown: the **Mercer Museum** [1913-16], **Moravian Tile Works** [1911-12, HAER], and Mercer's house, **Fonthill**. For those of us who enjoyed almost five full days of IA in Philadelphia, we concluded the 19th Annual Conference on Monday, exhausted yet utterly satisfied.

Levis' Hot Dogs & Champ Cherry Soda

To many Philadelphians, Levis' Hot Dogs and Champ Cherry Soda are as much a part of the city's culinary heritage as pepper pot soup, cheese steaks, and soft pretzels. It began in 1895, when Abe Levis started grinding his own frankfurter meat in the basement of his rowhouse on South Sixth St., selling the franks out of his first-floor storefront along with his "champ" (short for "champagne") cherry soda, a cider-flavored drink made from his own formula. The Levis firm has operated continuously at the original location ever since. The original soda fountain, reportedly the oldest in North American operation, is still used for drawing Champ Cherry soda water. Levis' Champ Cherry Soda was savored as one of the great "Philly Foods" at the 19th Annual SIA Conf.

K.M.C.

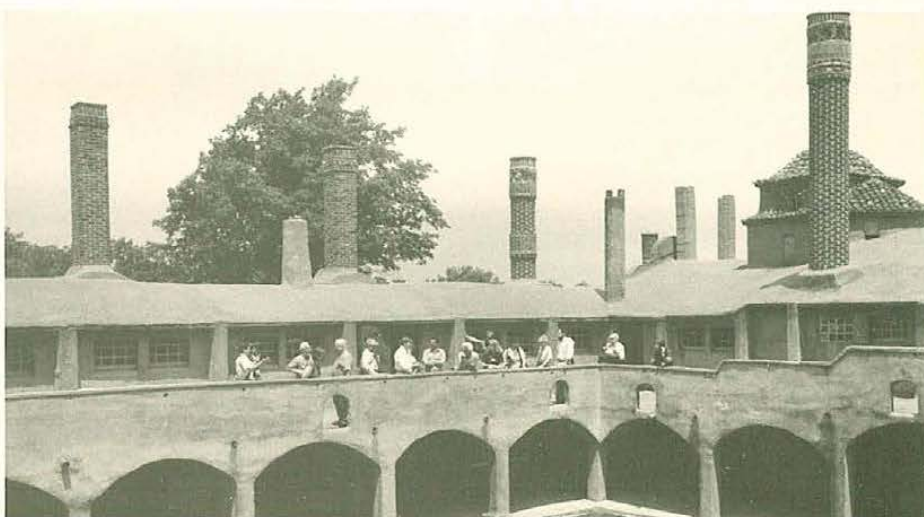


CONFERENCE VIEWS.

Left: Conference dynamo Jane Mork Gibson speaking at Fairmount Water Works, a site she made her own. W.F. Wescott photo.

Below left: Observing a Phila. PCC car, the tour vehicle for Thursday's pre-conf. trip to Germantown. R. Frame photo.

Below right: Monday's post-conf. tour of the Moravian Pottery & Tile Works [NHL, HAER], Doylestown, a reinforced-concrete tile factory built 1911-16 by the brilliant and eccentric Henry Chapman Mercer. R. Frame photo.



AFS honors Tannehill Ironworks

Alabama's Tannehill Ironworks restoration project will be showcased Sunday, Oct. 14, during ceremonies designating the birthplace of the Birmingham iron district a national metallurgical engineering landmark. The award, presented by the Birmingham Chap. of the American Foundrymen's Society, caps off a three-year restoration project by the state to put the old ironmaker back into its Civil War appearance.

Tracing its beginnings to 1830, Tannehill's three furnaces became a major supplier of Confederate iron for cannon and naval plate before being attacked by federal troops Mar. 31, 1865. Along with 14 similar plants in the state, Tannehill provided 70% of the South's iron supply from 1864 to 1865. The 1,500-acre National Register site annually attracts over 300,000 visitors. Restoration work there is thought to be the most extensive outside Hopewell National Historic Village in Pa. and Saugus Ironworks in Mass.

As part of the restoration, archaeologists from the Univ. of Alabama recently uncovered the foundation of what is thought to be Tannehill's original forge, built by Daniel Hillman in 1830. In the 14'8" x 17'2" building were found a great many artifacts, including a 12-pound cannon ball, an anvil bottom, a trip-hammer wheel, and a number of tools, including a file with a corn-cob handle. Located nearby was an 1842 dime in mint condition.

Carey B. Oakley, asst. director of the State Museum of Natural History, said the suspected old forge may have been converted into a warehouse following addition of an adjacent blower house and tall furnace in the late 1850s. Also located in connection with the forge was an 8'-wide, rock-lined race extending 285' to a nearby creek and a forebay.

When Tannehill No. 1 (1855) was re-fired for a run of iron as part of the National Bicentennial celebrations in 1976 [*SIA* Sept./Nov. 76:1], it marked the first time in U.S. history that a furnace out of blast for over a century had been put back into operation. Birmingham artist Barry Graham was commissioned to produce a drawing of the proposed furnace restoration prior to commencement of the work, and prints are available for \$20 from Tannehill Historical State Park, 12632 Confederate Pkwy., McCalla AL 35111 (205-477-5711).

J.B.



TANNEHILL WANTS HOT-BLAST STOVE. Much of the original machinery at Alabama's Tannehill Ironworks, including steam engine and hot blast stove, was scrapped by Republic Steel in the 1920s. Now park administrators are searching for a stove surviving from another furnace that they may exhibit at their Alabama site. Pictured is a stove atop the Eliza Furnace (c1846) in Pa., similar to one wanted at Tannehill. Send info. to Jim Bennett, Park Administrator, Tannehill Historical State Park, 12632 Confederate Pkwy., McCalla AL 35111 (205-477-5711).



Above: Tannehill Ironworks, 1855-65, near Birmingham, Ala.

Right: Recently unearthed artifacts: ingot molds, 2½'-diam. pot, huge blower pipe, and shafting. Photos courtesy J. Bennett.



SITES & STRUCTURES

FIRST MINNEAPOLIS ALL-STEAM MILL BURNS. In Minnesota's third major flour-mill fire in as many years, the New Century Mill [NR] was totally destroyed by a four-alarm blaze. [The two previous tragedies were the 1890 Stockton Roller Mill and the 1916 Faith Mill.] Named for its construction date, 1899-1900, the New Century Mill was the first flour mill in Minneapolis to turn its back on the massive water power of the Mississippi's St. Anthony Falls in Minneapolis, site of the city's great flour-milling district (toured during the 1983 SIA Annual Conf.). Though little-known in later years, the five-story, white-brick Century marked a significant attempt to move the industry away from the over-crowded Falls site by erecting a major steam-powered mill where it could take economical advantage of two rail links. Located at the edge of today's Univ. of Minnesota Minneapolis campus, the rail area already was an important terminal-grain-elevator district that remains active today. The Century was financed by George C. Christian, son of influential Minneapolis miller George H. Christian, who controlled numerous other milling properties. It was built by the Edward P. Allis Co. of Milwaukee and designed by their senior engineer, William D. Gray. Only two decades earlier, Gray had developed and introduced the revolutionary modern roller-mill in flour mills at the Falls, ending virtually overnight the reign of the ancient millstone. By the 1920s, Minneapolis milling was in decline and operations at the Century ceased. For years, it was used to warehouse flour and other commodities. Around 1980 there was short-lived interest in a tax-act project to convert the mill to a luxury hotel, catering to nearby university hospital and athletic facilities. Reuse interest evaporated and never reappeared, in part because money-hungry university football abandoned its traditional stadium for the heavily hyped new Metrodome downtown. At the end, the Century had become vulnerable to transients. It perished uninsured and, regrettably, undocumented. Ed.

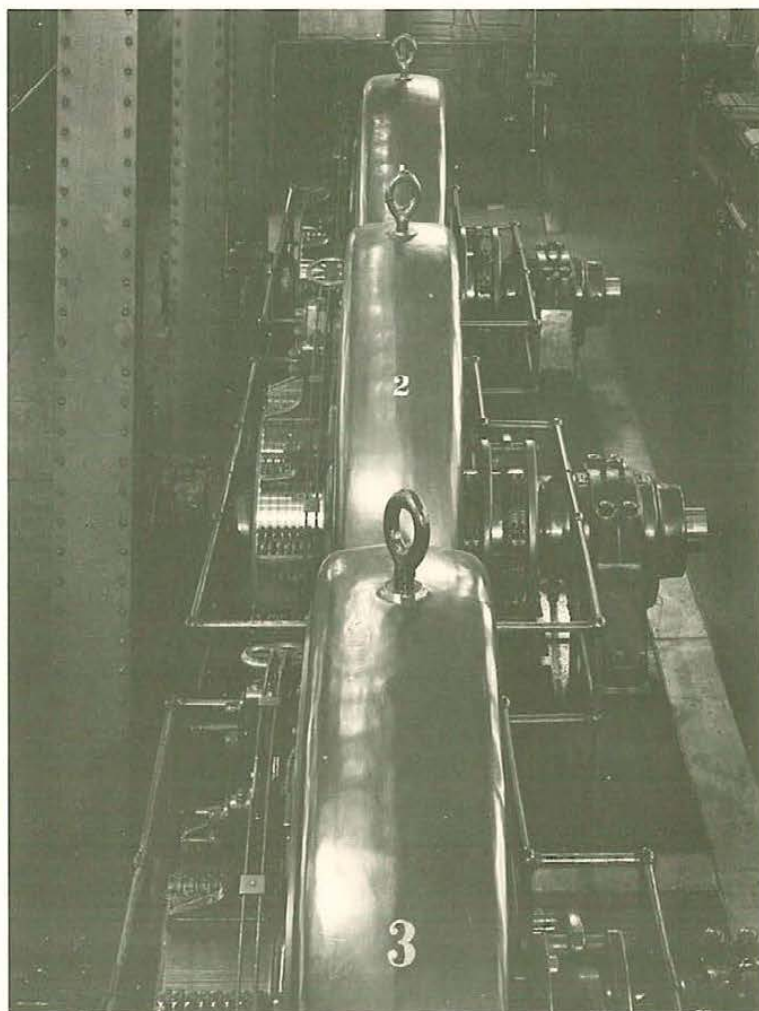
NYC Subway AC/DC Photo Exhibit

The IA of New York City subway electrical-conversion substations, as seen through the photography of Gerry Weinstein [SIA], is featured in "Dual Images," an exhibit of black and white photographs at the New York Transit Museum. The exhibit also displays the work of Joseph Elliott [see *SIA* Fall 87:9 & Spring 90:4].

The photos by Weinstein, co-founder of Photo-Recording Associates, are interpretive and documentary large-format studies of the oldest NYC Transit Authority (TA) substations. Today, these manned rotary-converter substations are living museums of early 20th-C power technology. They change AC supplied by utilities to the DC necessary to run the trains. Due to budget cutbacks in the 1970s and '80s, the TA kept the equipment running well past its theoretical life span, and a few of the original 1904-07 IRT stations have survived with only minor modifications. Now a capital budget plan is installing new solid-state rectification. Weinstein photographed the substations in the early 1980s.

A new threat to this equipment is the proposal of the electricity supplier, Consolidated Edison, to end all 25-cycle service, which it now provides by operating frequency changer sets in the former transit power stations. In most cases, the TA is reusing the existing structures, which were designed to harmonize with their turn-of-the-century neighborhoods.

"Dual Images" and Weinstein are honored with a mini-review titled "Time Warp" in the "Goings On about Town" section of the Sept. 17th *New Yorker*. The exhibit runs through Jan. (M-F 10-4, Sat. 11-4) in the Transit Museum's



Above: 1500 KW converters in Substation #17, northern tip of Manhattan. Put in service July 31, 1905, this is the oldest IRT (subway) substation with all original equipment intact (but now slated for replacement). Only guard railings, rectifier boards, and Con Ed meters have been added.

Left: A rare 1902, 1500 KW converter in Substation #7, at 3rd Ave. & 99th St. The substation (with this unit) was put in service Aug. 1, 1902, to power Manhattan Rwy. trains on the 3rd Ave. elevated line, and thus predates the subway. Installed to convert AC from the mammoth "Manhattan" steam generators, it was one of four to escape replacement in the 1920s. Substation #7 has recently been stripped of all equipment.

Photos by Gerry Weinstein, 1981-82.

unique quarters, an inactive 1930s subway station at Boerum Place & Schermerhorn St., Brooklyn NY 11201 (212-431-6100 x208). A subway token deposited in the turnstile is the admission charge. The museum maintains an impressive collection of eighteen restored subway cars, from the earliest to relatively recent, all on original tracks with a hot third rail. The interpretation of technological artifacts is minimal but improving, thanks to a research and labeling project, also by Weinstein.

CONTRIBUTORS TO THIS ISSUE

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With thanks.

NOTES & QUERIES



Women working in the Lawther Candy Co., Dubuque, Ia., about 1910. Photo courtesy Center for Dubuque History.

"IOWA WOMEN IN THE WORKPLACE" is an exhibit of 34 interior photographs documenting women at work in the factories, shops, and offices of pre-WWI Dubuque. It runs through Feb. 1991 at the State Historical Society of Iowa Museum in Des Moines and is available for future bookings. Mary Allison Farley, currently an archivist at the Henry Ford Museum, selected the examples from the 427-photo William F. Klauer Collection at the library of the exhibit's sponsor, the Center for Dubuque History. Co-sponsors are the Iowa Humanities Board and the Natl. Endowment for the Humanities. For further info. on bookings and availability, contact Michael D. Gibson, Archivist, Wahlert Memorial Library, CDH, POB 178, Loras College, Dubuque IA (319-588-7125), and read his related article in the Spring 1990 number of *The Annals of Iowa*.

"CONCORD, N.H.: A FURNITURE-MAKING CAPITAL," is an exhibition at the N.H. Historical Society tracing the furniture-making industry there from its beginnings in the handcrafts of the 18th-C joiner and chairmaker to the mechanized factory production of the 19th C. It includes some 40 pieces of furniture, documentary material, tools, and illustrations of manufacturing processes. Open to the public 9-4:30 M-F, noon-4:30 S-S, through Dec. An illustrated catalog is available from the NHHS Museum Store, 30 Park St., Concord NH 03301 (603-225-3381).

EAIA AWARDS FOR 1990. The Early American Industries Assn. has announced its annual Grants-in-Aid awards of \$1,000 each. Carolyn Cooper [SIA], Hampden, Conn., will study the few surviving Conn. milling machines to understand their creation and use in the context of 19th-C industrial technology. Robert Finch, Lakewood, Colo., will prepare a record of the design and development of boring tools and drills for the last 200 years. John Bidwell, Los Angeles, Calif., will research the Brandywine Paper Co. William Robertson, Kansas City, Mo., will identify various American makers of machinists' measuring tools, when and where they worked, what they made and their patents, and will include a classification of the tools by use and features. For info. on the EAIA program, contact Charles F. Hummel, c/o Winterthur Museum & Gardens, Winterthur DE 19735.

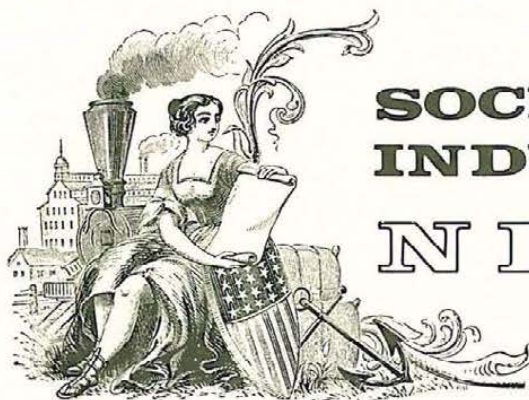
"BRIDGES—SYMBOLS OF PROGRESS" is an exhibition of 32 photographs by Richard Margolis [SIA], running through Jan. 2, 1991, at Arts in the Academy, Natl. Academy of Sciences, 2101 Constitution Ave. NW, Wash. DC 20418. The exhibition includes the George Washington Bridge; Pont de Langlois, the "Van Gogh bridge" in Arles, France; Brooklyn Bridge; a swing bridge in Rochester, N.Y.; a suspension pedestrian bridge in Loafer's Glory, N.C.; and an abandoned movable bridge across the Cuyahoga River in Cleveland, Oh. The exhibition is open to the public, free of charge, 9-5 M-F. Info.: Fredrica Wechsler, Director, AIA, NAS (202-334-2436).

LITHO OF UNIQUE BRIDGE-PAINTING AVAIL. In preparation for the restoration this year of the fire-damaged 1852 Philippi Bridge [*SIA*N Spring 89:1], project manager and engineer Emory Kemp [SIA], along with the architect and the restoration specialist, commissioned noted W.Va. artist Linda J.C. Turner to paint the bridge as it stood in 1861. Her painting was to be a "facsimile of the proposed restoration," and became a serious IA project. She carefully studied the bridge, measuring and sketching the members and joints. The surfaces of the arches and chords had to be searched carefully for the correct nail holes and mortises, indicating the position of wall studs and the spacing of siding. An unexpected finding made by Turner was that the lower chord of the truss had been exposed when the bridge carried horizontal siding. The discovery was corroborated when a substance found on the outside of the chord was identified as lead paint. Architectural elevation drawings and measurements, old photos, and a copy of Lemuel Chenoweth's plans for the bridge were produced, along with a mid-19th-C painting, which provided the only graphic documentation of the bridge with exposed arches.

Turner used these resources and her own research to arrive at the final painting, which includes horizontal off-white siding, exposed arches and chords, brick-red wooden roof shingles, wall studs, wooden curbs, hub rails, arched portals, gable-end siding aligned with top chord, knee braces from truss posts to tie beams, bracing at center long posts on pier and abutments, restored pier and abutment stonework, and a 10-in. camber in the span's center, which had dropped over the years. The painting was done from measured drawings. Ten months were required to complete the project.

The original painting is a watercolor on 300-lb. paper with an image 17" x 28". This has been reproduced by offset lithography, in a limited edition of 300 signed and numbered prints plus two artist's proofs, on 100-lb. acid-free paper. The image size is 15 3/4" x 26". Prints are available for \$85 ppd., from Laurelwood Studio, Rt. 2 Box aJ, Jane Lew WV 26378 (304-884-7956).

AUTO EXHIBIT RESEARCHER NEEDED. The Detroit Historical Museum, one of the nation's largest urban historical museums, seeks a researcher for a major permanent exhibit on the impact of the automobile industry on Detroit. Candidates should have a minimum of a masters degree in American technological, industrial, business, or labor history, and should have a demonstrated record of research in one or more of these areas. They will work closely with museum curators developing a research base for the exhibit script. This is a full-time, NEH-funded, one-year appointment, for \$18,000. Contact the Motor City Steering Committee, Collections Resource Center, Detroit Historical Dept., 6325 B, W. Jefferson Ave., Detroit MI 48209.



SOCIETY FOR INDUSTRIAL ARCHEOLOGY NEWSLETTER

PUBLICATIONS OF INTEREST

A SUPPLEMENT TO VOL. 19, NO. 2

SUMMER 1990

Compiled by John M. Wickre

GENERAL SUBJECTS

Vladimir Andrie, **Workers in Stalin's Russia: Industrialization & Social Change in a Planned Economy**. St. Martin's (NY), 1988. 255p. \$40. Rev.: *AHR* 95, June 1990, p874.

Joseph L. Arnold, **The Evolution of the 1936 Flood Control Act**. Office of History, U.S. Army Corps of Engineers (Ft. Belvoir VA), 1988. 135p. \$4.

"**Brooklyn's History Museum**." Exhibition, Brooklyn Historical Society (128 Pierrepont St., Brooklyn NY 11201), opened 1989. Incl. Brooklyn Bridge, Navy Yard. Rev.: *JAH* 77, June 1990, p225-32.

Business History 32, Apr. 1990, includes children's toy industry in 19th-C Britain, U.S. electric utility industry c.1900, British & Amer. auto industries. [British, avail. from Frank Cass, c/o Allen Press, POB 368, Lawrence KS 66044.]

Clifford E. Clark (ed.), **Minnesota in a Century of Change: The State & Its People Since 1900**. Minn. Hist. Soc. (St. Paul), 1989. 623p. \$36/20 pap. A collection of essays, produced with support from a 1978 grant from The St. Paul Companies. Incl. urbanization, iron mining, labor, & misc. modern industries. Rev.: *JAH* 77, Sept. 1990, p698.

[Engines of Change: exhibition, booklet, monograph, video:]

— "Engines of Change: The American Industrial Revolution, 1790-1860." Permanent exhibition, National Museum of American History, Smithsonian Institution (Wash. D.C. 20560), opened 1987. 6,000 sq. ft. Steven Lubar, curator; Brooke Hindle, historian emeritus; William Withuhn, project manager; Constantine Raitzky, designer. Incl. John Bull locomotive, iron bridge, machine shop.

— Steven Lubar, **Engines of Change: An Exhibition on the American Industrial Revolution at the National Museum of American History, Smithsonian Institution**. Museum Shop, NMAH, 1986. 69p, illus. \$6.

— Brooke Hindle & Steven Lubar, **Engines of Change: The American Industrial Revolution, 1790-1860**, Smithsonian Inst. Pr., 1986. 309p, illus., bibliog., index. \$33/15.

— **The "Engines of Change" Video**. Office of Telecommunications, Smithsonian, 1987. 30 minutes. \$25. (Avail.: Dept. of Public Programs).

— **Reviews: T&C** 29, Jan. 1988, p151-2 (book only); *T&C* 31, Apr. 1990, p271-7 (previously noted), *JAH* 77, June 1990, p217-21 (esp. enthusiastic about booklet).

H. Tristram Englehardt, Jr., & Arthur L. Caplan (eds.), **Scientific Controversies: Case Studies in the Resolution & Closure of Disputes in Science & Technology**. Cambridge U. Pr. (NY), 1987. 649p. \$60/\$20 pap. Incl. occupational safety & health (benzene, cotton dust) & nuclear power (Three Mile Island). Full list in *AHR* 95, June 1990, p957-8.

Dee Garrison, **Mary Heaton Vorse: The Life of an American Insurgent**. Temple U. Pr. (Philadelphia), 1989. 397p. \$28. Labor reporter who covered strikes of textile workers at Lawrence, Mass. (1912), Passaic, N.J., & Gastonia, N.C.; steel strike of 1919; & autoworkers strike, Flint, Mich. Rev.: *JAH* 77, Sept. 1990, p702-3.

David J. Goldberg, **A Tale of Three Cities: Labor Organization & Protest in Paterson, Passaic, Lawrence, 1916-1921**. Rutgers U. Pr. (New Brunswick, N.J.), 1989. 292p. \$38/15 pap. Amalgamated Textile Workers of America & the immigrant workers who formed it. Rev.: *JAH* 77, Sept. 1990, p703-4.

Dolores Greenberg, **"Energy, Power, & Perceptions of Social Change in the Early 19th Century."** In *AHR* 95, June 1990, p693-714. Emergence of "energy mystique" in early stages of Anglo-American industrialization, erroneously equating unlimited energy use with growth & progress.

J. A. Hassan & A. Duncan, **"The Role of Energy Supplies during Western Europe's Golden Age, 1950-1972."** In *JEEH* 18, Winter 1989, p479-508. Growth in mfg. energy consumption, 1960-72, more rapid than growth in mfg. output.

Jeffrey Haydu, **Between Craft & Class: Skilled Workers & Factory Politics in the U.S. & Britain, 1890-1922**. Univ. of Cal. Pr. (Berkeley CA), 1988. 312p. \$33. Job control; American machinists, British engineering workers. Rev.: *AHR* 95, June 1990, p782-3.

Hubert Kiesewetter, **Industrialisierung und Landwirtschaft: Sachsens Stellung im regionalen Industrialisierungsprozess Deutschlands im 19. Jahrhundert**. Bihlau (Cologne), 1988. 849p. DM188. Regional industrialization; Saxony (Germany). Rev.: *AHR* 95, June 1990, p850-51.

Hubert Kiesewetter, **Industrielle Revolution in Deutschland 1815-1914**. Suhrkamp (Frankfurt), 1989. 350p. DM20[?]. Germany.

David C. Klingaman & Richard K. Vedder (eds.), **Essays on the Economy of the Old Northwest**. Ohio U. Pr. (Athens), 1987. 330p, illus., notes. \$33. Ohio, Ind., Ill., Mich., Wis.; incl. transport, mfg. Rev.: *BHR* 63, Summer 1989, p418-20.

James G. Leyburn, **The Way We Lived: Durham, 1900-1980**. Northcross House (Elliston VA), 1989. 240p. \$20. Durham, N.C., incl. some on industries; division between "our kind of people" (middle-class) & working-class (esp. mill workers). Rev.: *JAH* 77, Sept. 1990, p697.

Steven Lubar, **"New, Useful, & Nonobvious."** In *AHT* 6, Spring/Summer 1990, p8-16. History of U.S. patent law.

Katherine A. Lynch, **Family, Class, & Ideology in Early Industrial France: Social Policy & the Working-Class Family, 1825-1848**. U. of Wis. Pr. (Madison), 1988. 285p. \$40/19 pap. Rev.: *AHR* 95, June 1990, p840.

[Made on Staten Island: exhibition, booklet:]

— **"Made on Staten Island: Agriculture, Industry, & Suburban Living in the City."** Staten Island Historical Society (441 Clarke Ave., Staten Island NY 10306), opened 1984 at the Richmondtown Historical Museum. 8,000 sq. ft. Charles L. Sachs, project director & curator; Nancy H. Waters, asst. project director & co-curator; Breslin/Mosseri Design, exhibition design. Primarily 1819-1930. Incl. much on mfg. (the area had 175 "industrial plants" by 1922). — Charles L. Sachs, **Made on Staten Island: Agriculture, Industry, & Suburban Living in the City**. SIHS, 1988. 120p. \$30/20 pap. — **Review: JAH** 77, June 1990, p221-4 (considers it a "model" exhibition).

Gary Marks, **Unions in Politics: Britain, Germany, & the U.S. in the 19th & 20th C.** Princeton U. Pr. (Princeton NJ), 1989. 295p. \$35/14 pap. Incl. cross-national comparison of printing & coal mining industries. Rev.: *JAH* 77, Sept. 1990, p691-2.

Scott Newton & Dilwyn Porter, **Modernization Frustrated: The Politics of Industrial Decline in Britain since 1900.** Unwin Hyman (Boston), 1988. 239p. Rev. in *AHR* 95, June 1990, p829-30, notes "overstated" emphasis on the role of Britain's distinctive political & financial institutions as an adverse influence on industrial growth.

Papers of the NAACP. Part 10: Peonage, Labor, & the New Deal, 1913-1939. Univ. Publications of Amer. (Bethesda MD), 1990? Incl. black factory workers. **Part 11: Special Subject Files, 1912-1939** might also be worth a look. Forthcoming.

Elizabeth Anne Payne, **Reform, Labor, & Feminism: Margaret Dreiser Robins & the Women's Trade Union League.** U. of Ill. Pr. (Urbana), 1988. 232p. \$35. Mostly 1906-1934; incl. AFL alliance. Rev.: *JAH* 77, Sept. 1990, p701-2.

Ulrich Pfister, **"Proto-Industrialization & Demographic Change: The Canton of Zürich Revisited."** In *JEEH* 18, Winter 1989, p629-62. Switzerland, 18th C.; incl. cotton textile industry.

Agnes Pogany, **"From the Cradle to the Grave? Banking & Industry in Budapest in the 1910s & 1920s."** In *JEEH* 18, Winter 1989, p528-49. Incl. data by industrial sector.

Cecil O. Smith, **"The Longest Run: Public Engineers & Planning in France."** In *AHR* 95, June 1990, p667-92. Centralized planning, from 18th-C highways to 19th-C railroads & 20th-C electric & nuclear power.

Elaine Glovka Spencer, **Management & Labor in Imperial Germany: Ruhr Industrialists as Employers, 1896-1914.** Rutgers U. Pr. (New Brunswick NJ), 1984. 318p. \$40. Incl. "appendixes presenting a survey of major coal, iron, & steel corporations in the Ruhr with their employment figures & biographical data on the most important members of the entrepreneurial elite." Rev.: *AHR* 95, June 1990, p853-4. See p852-3 of the same journal for related reviews of German-language books with interminable titles by Kutz-Bauer, on the Hamburg workers movement, 1873-90; & Von Berlepsch on failed efforts at German labor reform, 1890-96.

John M. Staudenmeier, **"Recent Trends in the History of Technology."** In *AHR* 95, June 1990, p715-25. Incl. SHOT history; notes 3 styles of emphasis (internalists, contextualists, & externalists) & 9 major subject areas.

Rolf Steininger (ed.), **Die Ruhrfrage 1945-46 und die Entstehung des Landes Nordrhein-Westfalen: Britische, französische und amerikanische Akten.** Droste (Düsseldorf), 1988. 1036p, illus., maps, bibliog. DM220. Incl. 222p intro. to the 244 mostly British documents related to the founding of the state of Nordrhein-Westfalen in the industrial Ruhr in Germany after WWII. Rev.: *AHR* 95, June 1990, p788-9.

Donald E. Sutherland, **The Expansion of Everyday Life, 1860-1876.** Harper & Row (NY), 1989. 304p. \$22. Incl. patterns of work among farmers & laborers. Rev.: *JAH* 77, June 1990, p313-14.

Rudolph J. Vecoli (ed.), **Italian Immigrants in Rural & Small Town America.** Amer.-Italian Hist. Soc. (Staten Island NY), 1987. 204p. Incl. workers on RRs & on the Gogebic & Minn. iron ranges.

George Wise, **"Reckless Pioneer."** In *AHIT* 6, Spring/Summer 1990, p26-31. Eliphalet Nott (1773-1866), pres. of Union College (Schenectady, N.Y.), promoter of united science & liberal arts education & of regional technology development, inventor of the Nott anthracite-burning stove.

Curt Wohleber, **"The Information Age."** In *AHIT* 6, Spring/Summer 1990, p6-7. Discusses Smithsonian exhibition, "The Information Age: People, Information & Technology."

Philip Ziegler, **The Sixth Great Power: A History of One of the Greatest of All Banking Families, the House of Barings, 1762-1929.** Knopf (NY), 1988. 439p. \$30. Merchant (investment) bankers with power compared to that of nations. Rev. in *AHR* 95, June 1990, p823, mentions huge Baring archives, 1200 correspondents around world. Surely there must be something here on investment in industry.

Paul F. Clark, et al (eds.), **Forging a Union of Steel: Philip Murray, SWOC, & the United Steelworkers.** Cornell U. Pr. (Ithaca NY), 1987. 168p, illus., bibliog., index. \$23/9 pap. Rev.: *BHR* 63, Summer 1989, p426-6.

Austin Coates, **The Commerce in Rubber: The First 250 Years.** Oxford U. Pr. (NY), 1987. 395p, maps, illus., notes, bibliog., index. \$33. Rev.: *BHR* 63, Summer 1989, p456-7.

T.A.B. Corley, **A History of the Burmah Oil Company.** Wm. Heinemann (London), Vol. 1, 1886-1924 (pub. 1983); Vol. 2, 1924-1966 (1988). 432p, maps, illus., appendixes, notes, index. £20. Rev.: *BHR* 63, Summer 1989, p458-9.

Jonathan Crush, **The Struggle for Swazi Labour, 1890-1920.** McGill-Queen's U. Pr. (Montreal), 1987. 330p. \$33. Southern Africa; incl. mining. Rev.: *AHR* 95, June 1990, p680.

David M. Emmons, **The Butte Irish: Class & Ethnicity in an American Mining Town, 1875-1975.** U. of Ill. Pr. (Urbana), 1989. 457p. \$26. Rev.: *JAH* 77, June 1990, p318.

Thomas G. Fuchtmann, **Steeple & Stacks: Religion & Steel Crisis in Youngstown.** Cambridge U. Pr. (NY), 1989. 318p. \$40.

John C. Inscoe, **Mountain Masters, Slavery, & the Sectional Crisis in Western North Carolina.** U. of Tenn. Pr. (Knoxville), 1989. 366p. \$30. Incl. slave labor in mining. Rev.: *JAH* 77, Sept. 1990, p689-70.

Journal of the West 28, Oct. 1989 *special issue on petroleum*:
— Kenny A. Franks & Paul F. Lambert, **"Black Gold: The Last Great Mineral Rush"**, p60-63.
— Andrew Guilleford, **"The Tiger Empties the Tank: The Oil Shale Boom-and-Bust in Colorado"**, p19-25.
— Richard Mason, **"Innovation in the Oil Patch: Enhanced Recovery in North Texas"**, p37-45.
— Diana Davids Olien, **"Selling Shares in Black Gold: Oil Promoters in the Jazz Age"**, p26-32.
— Roger M. Olien, **"Doctor Frederick A. Cook & the Petroleum Producers' Assn."**, p33-36.
— Bobby D. Weaver, **"The Discovery & Development of the Panhandle Oil & Gas Field"**, p4-9.

Barbara Kingsolver, **Holding the Line: Women in the Great Arizona Mine Strike of 1983.** ILR Pr. (Ithaca NY), 1989. 225p. \$26/11 pap.

S. J. Kleinberg, **The Shadow of the Mills: Working-Class Families in Pittsburgh, 1870-1907.** U. of Pittsburgh Pr. (Pittsburgh PA), 1989. 440p. \$50. Steel mills. Rev.: *JAH* 77, June 1990, p317-18.

Jack Lufkin, **"Iowa's Independent Oil Companies."** In *The Palimpsest* 70, Winter 1989, p198-204. Sale of petroleum products, mostly 1910-1930s.

Darcie A. MacMahon, **Archeological Collections Management at the Saugus Iron Works National Historic Site, Massachusetts.** ACMP Series No. 5. Div. of Cultural Resources, N. Atlantic Regional Office, Natl. Park Service (Boston), 1988. 224p, illus., refs., appendixes. Pap. Operated for perhaps 30 years (1646-1676?), the first integrated ironworks in N.A. Review in *IA* 15, No. 1, 1989, p65-6, commends MacMahon but faults previous poor fieldwork & haphazard collections management at site; notes need for further consideration of remaining industrial artifacts.

Gerald Markowitz & David Rosner, **"The Street of Walking Death: Silicosis, Health, & Labor in the Tri-State Region, 1900-1950."** In *JAH* 77, Sept. 1990, p525-52. Mo./Kan./Okla., lead-zinc mines; Eagle-Picher Lead Co.; Western Federation of Miners / Intl. Union of Mine, Mill & Smelter Workers; U.S. Dept. of Labor vs. U.S. Public Health Service.

R. E. Mather & F. E. Boswell, **John David Borthwick: Artist of the Gold Rush.** U. of Utah (Salt Lake City), 1989. 230p, illus. \$20. Calif., c.1850-52?, & Australia gold rush, 1853-4. Rev.: *JAH* 77, June 1990, p307-8.

Kenneth S. Mernitz, **"Governmental Research & the Corporate State: The Rittman Refining Process."** In *T&C* 31, Jan. 1990, p83-113. Problems of the U.S. Bureau of Mines (est. 1910) in commercializing the Rittman vapor-phase process for the continuous cracking of petroleum for the production of gasoline, benzene & toluene over the then-current Burton liquid-phase batch process, 1914-16; & Walter F. Rittman's continuing problems after leaving the Bureau & forming his own firm, 1916-1918.

Thomas F. O'Brien, "Rich Beyond the Dreams of Avarice: The Guggenheims in Chile." In *BHR* 63, Spring 1989, p122-129. Nitrates, copper; multinational enterprise; also smelting in Colo. & Mexico.

Ben E. Pingnot, *Siringo*. Texas A&M U. Pr. (College Station), 1989. 260p. \$30. Biog. of Charles A. Siringo, cowboy & Pinkerton, incl. Coeur d'Alene (ID) mining investigations. Rev.: *JAH* 77, Sept. 1990, p686.

Brian Roberts, *Cecil Rhodes: Flawed Colossus*. Norton (NY), 1987. 333p. \$23. Incl. diamond & gold mining enterprises; South Africa. Rev. in *AHR* 95, June 1990, p227-8, mentions related Roberts' books, *The Diamond Magnates* (1972) & *Kimberley: Turbulent City* (1976).

Robert I. Rotberg, *The Founder: Cecil Rhodes & the Pursuit of Power*. Assisted by Miles F. Shore. Oxford U. Pr. (NY), 1988. 823p. \$35. Incl. R as diamond & gold mining entrepreneur; South Africa. Rev. in *AHR* 95, June 1990, p227-8, considers this "a major...reevaluation".

Daniel J. Santoro, *A Socio-Historical Analysis of the American Steel Industry, 1865-1929: Factory Closures in the Cycle of Capitalist Development*. Ph.D. thesis, U. of New Hampshire, 1988.

Paul A. Tiffany, *The Decline of American Steel: How Management, Labor, & Government Went Wrong*. Oxford U. Pr. (NY), 1988. 295p, tables, notes, bibliog., index. \$23. Rev.: *T&C* 31, Jan. 1990, p139-40.

Werner Troesken, "A Note on the Efficiency of the German Steel & Coal Syndicates." In *JEEH* 18, Winter 1989, p595-600. Late 19th- & early 20th-C.; evidence does not support the hypothesis that the cartels restricted output.

TRANSPORT

C. Edson Armi, *The Art of American Car Design: The Profession & Personalities—"Not Simple Like Simon."* Pa. State U. Pr. (U. Park PA), 1988. 320p, illus, notes, index. \$35. Rev.: *T&C* 31, Apr. 1990, p314-15.

W. Jeffrey Bolster, "To Feel Like a Man: Black Seamen in the Northern States, 1800-1860." In *JAH* 76, Mar. 1990, p1173-99. Esp. Providence, R.I., where in 1832 25% of heads of Afro-American households were mariners. Disappearance of professional black sailors by 1860; increasing relegation of blacks to galley or steward's work.

Walter J. Boyne, *Power Behind the Wheel: Creativity & the Evolution of the Automobile*. Stewart, Tabori & Chang (NY), 1988. 240p, illus., index. \$35. Rev.: *T&C* 31, Apr. 1990, p314-15.

Thomas C. Buckley, "Railroader as Yachtsman: James J. Hill & the Wacouta of St. Paul." In *Ramsey County History* 25, Spring 1990, p4-11, 16-21. (Avail.: Ramsey County Historical Society, 323 Landmark Center, 75 W. 5th St., St. Paul MN 55102.) Construction & operation of Hill's 240-ft. steel-hulled yacht, used 1900-16 mostly on East Coast for travel to New Brunswick salmon "killing". Orig. the *Eleanor*, built 1893-4 by William Slater [yes, a descendant of the textile mill Slaters].

George P. Clark (ed.), "Through Indiana by Stagecoach & Canal Boat: The 1843 Travel Journal of Charles H. Titus." In *Ind. Mag. of Hist.* 85, Sept. 1989, p193-235.

Dorothy Cochran, et al, *The Aviation Careers of Igor Sikorsky*. U. of Wash. Pr. (Seattle), for the Natl. Air & Space Museum, Smithsonian (Wash. DC), 1989. 207p. \$35/20 pap. Seaplanes, helicopters?

Paolo E. Coletta (comp.), *A Selected & Annotated Bibliography of American Naval History*. Revised ed. U. Pr. of Amer. (Lanham), 1988. 547p. \$40. Rev.: *JAH* 76, Mar. 1990, p1368-9.

Malcolm Cooper, "Maritime Labour & Crew List Analysis: Problems, Prospects, & Methodologies." In *Labour/Le Travail* 23, Spring 1989, p179-94.

Edward R. Crews, "The Big Ship." In *AHIT* 6, Spring/Summer 1990, p34-41. Transatlantic liner *United States*, completed 1952, unoperated since c.1970, now sitting idle at a Norfolk, Va., coal pier; & its designer, William Francis Gibbs (1866-1967), marine architect, 1915-1967. Color adv. illus.

Kendrick Price Daggett, *Fifty Years of Fortitude, the Maritime Career of Captain Jotham Blaisdell of Kennebunkport, Maine, 1810-1860*. Mystic Seaport Museum (Mystic CT), 1988. 184p, maps, illus., tables, app., notes, index. \$20. Captain/business agent engaged in sugar & cotton trade; "packed with technical, legal, & procedural detail" according to rev. in *BHR* 63, Spring 1989, p189-90.

James Barker Farr, *Black Odyssey: The Seafaring Traditions of Afro-Americans*. Peter Lang (NY), 1989. 310p. \$43.

William Finlay, *Work on the Waterfront: Worker Power & Technological Change in a West Coast Port*. Temple U. Pr. (Phila. PA), 1988. 220p., tables, notes, bibliog., index. \$25. International Longshoremen's & Warehousemen's Union in Los Angeles / Long Beach, Calif.; containerization, from 1960 union agreement to present. Rev.: *T&C* 31, Jan. 1990, p154-56.

Freight Cars Journal 7, April 1990, includes Reading covered hoppers (1930s), history of pneumatic brake equipment for RR cars (1869-1953). Avail.: Society of Freight Car Historians, POB 2480, Monrovia CA 91017.

Ralph D. Gray, *The National Waterway: A History of the Chesapeake & Delaware Canal, 1769-1985*. U. of Ill. Pr. (Champaign), 1989. 349p. \$30/14 pap.

Martin Halpern, *UAW Politics in the Cold War Era*. St. U. of N.Y. (Albany), 1988. 369p. \$45/17 pap. Rev.: *JAH* 76, Mar. 1990, p1308-10.

Deborah Scott Hirshfield, "Women Shipyard Workers in the Second World War." In *Intl. History Rev.* 11, Aug. 1989, p478-85.

Hartley Edward Howe, *North America's Maritime Museums: An Annotated Guide*. Facts on File (NY), 1987. 382p. \$35. Rev.: *JAH* 76, Mar. 1990, p1367-8.

Alvah F. Hunter, *A Year on a Monitor & the Destruction of Fort Sumpter*. Edited by Craig L. Symonds. U. of S.C. Pr. (Columbia), 1987. 203p, illus., notes, index. \$20. A cabin boy's service on the *USS Nahant* in 1863, with much on ship itself. Rev.: *T&C* 31, Jan. 1990, p185-7.

Richard P. Jackson, "From Profit-Sailing to Wage-Sailing: Mediterranean Owner-Captains & their Crews during the Medieval Commercial Revolution." In *JEEH* 18, Winter 1989, p605-28.

David J. Jeremy, "The 'Emigrants to a New World' Gallery at the Merseyside Maritime Museum, Liverpool." Generally favorable exhibit rev. in *T&C* 31, Apr. 1990, p278-83. Noises & smells in street-and-steerage section of exhibit include "smell (not too strong) of vomit & ordure."

[Kansas City Southern Rwy.] in *Natl. Rwy. Bull.* 55, No. 1, 1990: — "Kansas City's Railroad", p4-17. — Don G. Campbell, "Kansas City Southern E-Units", p18-22. Diesels.

Seung-Wook Kim, *Accident Risk & Railroad Worker Compensation: A Historical Study, 1880-1945*. Ph.D. thesis, U. of Ga., 1988.

Howard Kimeldorf, *Reds or Rackets? The Making of Radical & Conservative Unions on the Waterfront*. U. of Calif. Pr. (Berkeley), 1988. 254p. \$28. Intl. Longshoremen's & Warehousemen's Union (ILWU), West Coast U.S., 1930s-1950s. Rev.: *JAH* 76, Mar. 1990, p1307-8; *AHR* 95, June 1990, p227-8.

Philip A. Korth & Margaret R. Beegle, *I Remember Like Today: The Auto-Lite Strike of 1934*. Mich. St. U. Pr. (E. Lansing), 1988. 264p. \$20. UAW strike, Toledo, Ohio; oral history. Rev.: *JAH* 76, Mar. 1990, p1308-10.

Bill Lass, "Missouri River Steamboating." In *North Dakota History* 56, Summer 1989, p3-15.

W. David Lewis & William F. Trimble, *The Airway to Everywhere: A History of All American Aviation, 1937-1953*. U. of Pittsburgh Pr. (Pittsburgh PA), 1988. 239p, illus., appendixes, notes, bibliog., index. \$28. Predecessor of Allegheny Airlines / USAir, All American was founded by Lytle S. Adams to provide aerial pickup of mail; transformed into regional passenger airline in 1948. Rev.: *BHR* 63, Summer 1989, p434-5.

Nelson Lichtenstein & Stephen Meyer (eds.), *On the Line: Essays in the History of Auto Work*. U. of Ill. Pr. (Champaign), 1989. 256p. illus., notes, index. \$33/13 pap. Rev.: *T&C* 31, Apr. 1990, p317-19.

Thomas J. Manning, **U.S. Coast Survey vs. Naval Hydrographic Office: A 19th-Century Rivalry in Science & Politics**. U. of Ala. Pr. (Tuscaloosa), 1988. 216p. \$22. Rev.: *JAH* 77, June 1990, p315-6.

Merrill J. Mattes, **Platte River Road Narratives: A Descriptive Bibliog. of Travel over the Great Central Overland Route to Ore., Calif., Utah, Colo., Mont., & Other Western States & Territories, 1812-1866**. U. of Ill. Pr. (Urbana), 1988. 647p. \$95. Road from St. Joseph, Mo., to Fort Laramie, Wyo. Rev.: *JAH* 76, Mar. 1990, p1359-60.

William A. McKenzie, **Dining Car Line to the Pacific: An Illustrated History of the NP Railway's "Famously Good" Food, With 150 Authentic Recipes**. Minn. Hist. Soc. Pr. (St. Paul MN), 1990. 164p, illus., notes, index. Incl. crew's view of 1960s round-trip, Chicago - Seattle; history of dining car service in U.S. & on Northern Pacific, 1880s-1970; waiters & unions.

Alfred C. Mierzejewski, **The Collapse of the German War Economy, 1944-1945: Allied Air Power & the German National Railway**. U. of N.C. Pr. (Chapel Hill), 1988. 305p. \$36. Effectiveness of attacks on RR marshalling yards; should have been done sooner. Rev.: *AHR* 95, June 1990, p857-8.

Modeltec (POB 286, Cadillac MI 49601) is a monthly magazine publishing "machinist projects of beauty & usefulness" as well as news of live steam model activities. Its Old Orchard Publishing Service (POB 284) lists books for both machinists & modelers. Modeling projects spread over multiple issues in 1989-90 include a donkey engine, Pennsy E6s Atlantic locomotive, una-flow steam engine, motor coach, crab engine, Canadian Pacific 4-6-2, & misc. rolling stock. Other articles include a historical series on steam automobiles (1987-89), a Stirling hot air engine (Jan. 1990), & a 1/2-in. scale 1906 Atlantic Equipment Co. (later Alco/Bucyrus) steam shovel (Apr. 1990; dwgs. for which are avail. in 1/2- & 1/4-in. scale from Harriet Peebles, 1502 S. Owyhee St., Boise ID 83705).

Armando Montari, **"Barcelona & Glasgow: The Similarities & Differences in the History of Two Port Cities."** In *J. of Eur. Econ. Hist.* 18, Spring 1989, p171-89. Glasgow in decline, with port moved physically away from the city, but with modern electronics industry substituting chips for ships; since 1979, some restoration of 19th & 20th buildings. Barcelona seeing increase in traffic since 1978 est. of Free Port authority (public body run like private enterprise), but 1992 Olympic Games structures being built on land cleared of "old port buildings & factories." Related books: A. Gibb, **Glasgow: The Making of a City** (Croom Helm, London, 1983, 197p) & J. Alemany, **El Puerto de Barcelona, Historia y Actualidad** (Puerto Autonomo de Barcelano, 1984, 247p).

Of Men & Machines. Historic Spencer Shops (POB 44, Spencer NC 28169), 1989? Video (VHS), color, sound. PBS edited version, 28.5 min., \$30. Regular version, 45 mins., \$50. Southern Rwy. shops; film clips, stills, video of current Spencer Shops Transportation Museum operations; interviews with workers. Rev.: *Natl. Rwy. Bull.* 55, No. 1, 1990, p38.

John H. Pryor, **Geography, Technology, & War: Studies in the Maritime History of the Mediterranean, 649-1571**. Cambridge U. Pr. (NY), 1988. 256p, figures, notes, bibliog., index. \$40. Rev.: *T&C* 31, Jan. 1990, p183-5.

[**Sault Ste. Marie, Ont., ship canal**; dual rev. in *IA* 15/2, 1989, p73-5; both books discuss the Canadian canal between Lakes Superior & Huron, which flourished ca.1895-1915; both avail. from Canadian Govt. Publishing Centre, Supply & Services Canada, Hull, Quebec K1A 0S9.]

— Brian S. Osborne & Donald Swainson, **The Sault Ste. Marie Canal: A Chapter in the History of Great Lakes Transport**. Parks Canada (Ottawa), 1986. 148p, illus., notes, bibliog., index. \$C7.50 inside Canada, C\$9 outside; pap.

— Robert W. Passfield, **Technology in Transition: The "Soo" Ship Canal, 1889-1985**. Canadian Parks Service / Environment Canada (Ottawa), 1989. 267p, illus., notes, bibliog., index. \$C14.25 in Canada; \$C17.10 outside; pap.

James D. Sheppard, **"Columbia, Newberry & Laurens: A South Carolina Shortline in the '40s."** In *Natl. Rwy. Bull.* 55, No. 1, 1990, p24-32.

Richard F. Snow, **"The Most Beautiful Dry Dock."** In *AHIT* 6, Spring/Summer 1990, p4-5. Drydock No. 1, Brooklyn Navy Yard, built 1851, still at work.

John W. Snyder, **"The Southern Pacific Builds a Bridge—The Saga of the Martinez-Benicia Bridge."** In *RRH*, Autumn 1989, p66-93. Efforts to bridge Carquinez Strait on San Francisco Bay from the 1880s, culminating in the 1928-30 construction of the last important simple-truss RR bridge built on a new location in the U.S.

John H. White, Jr., **"Riding in Style: Palace Cars for the Cattle Trade."** In *T&C* 31, Apr. 1990, p265-270. Cattle car design & operation; humane treatment of animals bound for slaughter.

Edward H. Wiswesser, **Steam Locomotives of the Reading & P&R Railroads**. Greenberg Publishing Co. (7566 Main St., Sykesville MD 21784), 1989? 288p. \$35.

Work & the Waterways: An Aural History of Midwestern Workers. Loyola U. of Chicago & the Chicago Maritime Society (Chicago), 1987. Audio cassette (60 mins.) & teacher's guide. \$13. (Avail.: CMS, c/o Newberry Library, 80 W. Walton St., Chicago IL 60610.) Folk songs, newsp. excerpts, & other info (with "unrealistically good" music & speech); exact location & type of work not specified by rev. in *Teaching History* 15, Spring 1990, p47.

Karl Zimmerman, **"Before There Was Plastic...."** In *Americana* 17, p50-53. RR dining car crockery & silverware; bibliog. references; mentions **Railroadiana Collectors Assn.** (795 Aspen Dr., Buffalo Grove IL 60089).

STRUCTURE

T. H. Breen, **Imagining the Past: East Hampton Histories**. Addison-Wesley (Reading), 1989. 320p. \$20. Long Island, N.Y.; incl. archeological problems in searching for the remains of the Mulford Warehouse. Rev.: *JAH* 77, Sept. 1990, p631-2.

[**Bridges Theme Issue:**] *IA* 15/2, 1989. All finely illus., with bibliog.:

— Emory Kemp, **"The Fabric of Historic Bridges"**, p3-22. Historic American bridges considered through the development of structural systems that optimize the materials used, incl. wooden covered bridges, iron & steel truss & suspension bridges; stone, steel & concrete arches.

— David A. Simmons, **"Bridge Building on a National Scale: The King Iron Bridge & Manufacturing Co."**, p23-39. Zenas King & his Cleveland, Ohio, bridge firm, mostly ca.1860-1890s, esp. tubular swing & bowstring bridges; cantilever construction; sales methods; pooling.

— Victor C. Darnell, **"The Other Literature of Bridge Building"**, p40-56. Fabricator's catalogs & reports & brochures of consulting engineers as sources for bridge history; incl. a checklist of 19th-C. examples & a selected list for 1901-40; & mention of the publications of trade associations & iron & steel mfrs.

— Eric DeLony, **"HAER's Historic Bridge Program"**, p57-71. History of HAER; role of Federal Highway Admin.; statewide historic bridge inventories; legislation; documentation of demolished bridges; publications, exhibits, awards; rehabilitation guidelines.

Business History Review [BHR] 63, Summer 1989 [rec'd spring 1990] focuses on **real estate in business history**, incl. overview with selected bibliog.; building societies in Quebec City, 1850-1864; as well as articles by Rosen & Friedrichs, cited separately.

Thomas Carter & B. L. Herman (eds.), **Perspectives in Vernacular Architecture, III**. U. of Mo. Pr. (Columbia), 1989. 262p. \$22. Incl. typological section: house trailers, Appalachian half-houses, Lustron steel houses, garages. Rev.: *JAH* 77, Sept. 1990, p633-4.

William B. Friedrichs, **"A Metropolitan Entrepreneur Far Excellence: Henry E. Huntington & the Growth of Southern California, 1898-1927."** In *BHR* 63, Summer 1989, p329-355. H as de facto regional planner in Los Angeles Basin; incl. street rwy., hydroelectric power.

Abbreviations used in this PofI:

- **AHIT**: American Heritage of Invention & Technology
- **AHR**: American Historical Review
- **BHR**: Business History Review
- **IA**: *IA*, The Journal of the Society for Industrial Archeology.
- **JAH**: Journal of American History
- **JEEH**: Journal of European Economic History
- **T&C**: Technology & Culture

Readers are urged to send all notices of pertinent publications to John M. Wickre, Compiler, Publications of Interest, SIA Newsletter, P.O. Box 65158, St. Paul, MN 55165-0158 (612-222-5628 or 224-0028).

NOTES & QUERIES

HAER PUBS SPECIAL TO SIA MEMBERS. Because of the longstanding close relationship between the SIA and the Historic American Engineering Record, HAER is making the following publications available to SIA members free or at cost, postpaid:

—*HAER Brochure* (1990). The first brochure for the HAER program in a decade. Free.

—Robert J. Kapsch, "HABS/HAER: A User's Guide," *APT Bulletin* 22, 1&2 (1990). Reprint of an overview of the HABS/HAER program, by the Chief. Free.

—*Historic American Buildings Survey / Historic American Engineering Record: 1989 Annual Report* (1990). Includes a review of HABS/HAER in the 1980s. Free.

—John Burns, ed., *Recording Historic Structures*. Wash. D.C.: American Inst. of Architects Press, 1989. The how-to recording "bible" of the HABS/HAER programs, this publication replaces Harley McKee's classic of 1970. Paper cover, \$10.

—*Industrial Eye: Photographs by Jet Lowe from the Historic American Engineering Record*. Wash. D.C.: Preservation Press, 1986. Award-winning book captures the excitement of IA. Hard cover, \$20.

—Richard K. Anderson, Jr., *Guidelines for Recording Historic Ships*. Wash. D.C.: HABS/HAER, 1988. Definitive guide to recording large historic ships. Free.

Supplies of some of these publications are limited. Make checks payable to the Historic American Engineering Record. SIA members may write Jean Yearby, Publications Specialist, HABS/HAER (429), Natl. Park Service, POB 37127, Wash. DC 20013-7127.

BIBLIOGRAPHIC QUERY. Researchers desire citations to publications dealing with the historical geography of the environment. Please submit references to published work that either focuses on, or contains a substantial treatment of, some form of environmental change brought about by human agency and is examined in a historical perspective. This may include long-term climatic change, environmental degradation caused by agricultural practices or pollution, the impact of land reclamation, stream morphology, or studies of land management practices. We are particularly interested in locating relevant segments of larger works, such as environmental impact statements or other items in the "gray literature," that treat environmental change from a historical perspective. Citations needed ASAP. Craig Colten [SIA], Illinois State Museum, 1920 S. 10 1/2 St., Springfield IL 62703.

COLORADO ORE-MILL QUERY. The Aspen Historical Society has recently acquired responsibility for the remains of a silver mill erected in the 1890s. It used the Russell process of lixiviation to extract silver. Two of the mill buildings survive, a sampling works and a storage shed. After mining ended, the property was part of a ranch and the sampling-works building was used as a granary. Plans call for adapting that building as a museum focusing on the mining and ranching history of the area. The Society is very interested in learning about any other ore mills that have been preserved and/or used as museums. Contact Lysa Wegman-French, Aspen Historical Society, 620 West Bleeker, Aspen CO 81611 (303-925-3721).

HAGLEY AID FOR 1991. Hagley Museum & Library offers Advanced Research Fellowships, Dissertation Fellowships, and Grants-in-Aid for 1991. Projects in the areas of American business and economic history, the history of science and technology, and the social contexts of industrialization are especially solicited, as are proposals in French history of the Revolutionary period. Advanced Research Fellowships are residential, run from six to twelve months, and offer a maximum stipend of \$27,500. Dissertation Fellowships run from nine to twelve months and provide a \$13,500 stipend. Grants-in-Aid support two to eight week visits to Hagley at a maximum of \$1,000 per month. The deadline for the Advanced Research Fellowship and Dissertation fellowship is Nov. 15; Grants-in-Aid are awarded throughout the year. Inquiries to the Center for the History of Business, Technology, & Society, Hagley Museum & Library, POB 3630, Wilmington DE 19807 (302-658-2400).

JOB OPENING. The Tennessee Valley Authority (TVA) is accepting applications for Administrator/Curator for its Historic Collection. Applicants should have M.A. in museum studies, industrial archeology, or related field; minimum three years relevant experience; and excellent organizational and communication skills. Primary responsibilities include cataloging and curating a wide variety of items relating to TVA, producing temporary and permanent displays, and coordinating employee and retiree involvement with the collection. Salary in low to mid \$30s with excellent benefits. Send resume and request for full job description and application to Joel E. Squires, Human Resource Manager, TVA, OCH 1F 79E, 601 W. Summit Hill Dr., Knoxville TN 37902. TVA is an equal opportunity employer. Selections will be made on the basis of merit and efficiency as set out in the TVA Act and applicable laws prohibiting discrimination in Federal employment. U.S. citizenship required.

CAP-ROUGE POTTERY QUERY. La Societe historique du Cap-Rouge in Cap-Rouge, Quebec (the Cap-Rouge Viaduct was viewed during the SIA 1989 Annual Conf. tour in Quebec), has requested the assistance of SIA members in completing research for the town's history:

"We are pursuing information on one of the town's main 19th-C industries, the Cap-Rouge Pottery Co. Founded by H. Jowison, J. Pye, and Z. Chartre, the pottery operated from 1860 to c1876. The production was primarily Yellow Ware and Rockingham. An archeological dig has already uncovered interesting artifacts, but the historical research is incomplete. If your Society members possess any information on the following items, would you be kind enough to reply? It would be deeply appreciated.

"—We know that the pottery imported clay from New Jersey, but do not know the exact source. Other potteries must have used New Jersey clay. Which villages provided clay?

"—We know that Canadian-made pottery was entered in the great int'l exhibitions, such as Phila. Could we get a list of those exhibitions and their participants (was Cap Rouge among them?), and do catalogs of these exhibitions exist?

"—Is there any biographical data on Philip Pointon, an American, the potter who directed Cap-Rouge Pottery?

"—Any other information on the Cap-Rouge Pottery and its production."

—Please reply to Jean Dery, President, Societe historique du Cap-Rouge, 1435 rue Provencher, Cap-Rouge, Quebec, Canada G1Y 1R9.

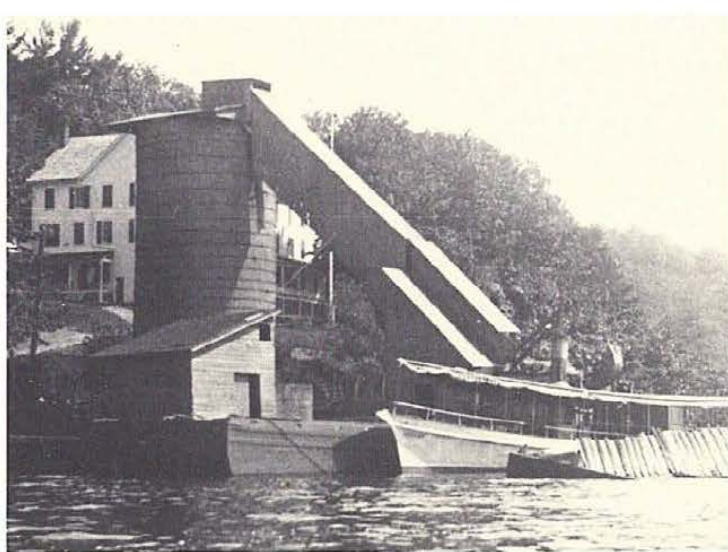
New York State Mining Industry Research

Where is the world's largest garnet mine? Talc mine? Which state ranks second in zinc production, third in salt, and first in garnet, talc and wollastonite? Where were the world's largest open-pit magnetite and ilmenite (titanium dioxide) mines? The answer to all of the above is New York.

In recent years, the Empire State's mining industry has suffered severe economic cutbacks and mine closings, raising interest in its history. Mark W. DeLawyer [SIA] has been looking into the history and heritage of New York mining and invites correspondence with others having the same research interest.

Little known highlights of the industry's statewide history suggested by DeLawyer include the fact that Sing Sing Prison was associated with marble deposits at Ossining, and Dannemora State Prison (now Clinton Correctional Facility) was established in part to mine local iron ore. The tiny villages of Graphite and Hague, now virtually ghost towns, were once the largest suppliers of graphite in the world. The Dixon Graphite Co. built a refinery and factory at Ticonderoga on Lake George, giving birth to the "Ticonderoga pencil." The huge Retsof ("Foster" backward) Mines southwest of Syracuse are the deepest U.S. salt mines and carry on the "Salt City's" historic reputation.

The village of Gouverneur supplies most of the world with talc and the marble-paved sidewalks testify to its past as a major marble supplier. Beneath the ski resort at Gore Mountain lies the world's largest deposit of garnet, under continuous mining operation by the Barton Mines Corp. for a



Loading graphite on Lake George at Hague, N.Y. Photo courtesy Hague Historical Society.

century.

Found in the iron from the Macyntire Iron Deposit at the little towns of Newcomb and Tahawus was titanium. That discovery, important in World War II, grew into the world's largest open-pit titanium dioxide mines under the stewardship of the Natl. Lead Co., now NL Chemicals Corp. Near Willsboro is the world's largest orebed of wollastonite, now replacing asbestos as a safe fireproofing material and as a base in ceramics.

Certainly "firsts" and "biggests" aren't necessarily the most important reasons for studying an area or industry, but they often point to topics worth exploring. In this case, if interested, contact DeLawyer at 550 So. Clinton St., Syracuse NY 13202.

NOTES & QUERIES

"GRANITOID" PAVEMENT INFORMATION is needed for a National Register pavement nomination in preparation by the Near Southside Neighborhood Assn., Grand Forks, N.D., according to the Public Works Historical Society. The section of pavement in question was laid between 1905 and 1911 as part of a street modernization program. The pavement is described as a "composition" type of mixture of concrete and granite chips, produced by the R.S. Blome Co., Chicago. A contemporary local newspaper account described the Granitoid pavement as "one of unusual beauty, being almost pure white, and it is easily kept clean." General background on Granitoid is desired, especially other pavement locations. Contact Sally Morris, NSNA, 417 4th Ave. S., Grand Forks ND 58201.

"THE ENVIRONMENT & THE MECHANIZED WORLD" is a conference devoted to issues related to the modification of the natural world by agriculture, commerce, industrialization, and urbanization. Sponsored by the American Society for Environmental History; Feb. 28-Mar. 3, 1991, at the Univ. of Houston. Info.: Martin V. Melosi, Program Chair, ASEH Conf., Dept. of History, UofH, Houston TX 77204-3785 (713-749-2967).

UNUSUAL RESEARCH OPPORTUNITY FOR THOSE SO INCLINED. June 1991 will mark the centennial of the Johnstown Inclined Plane, an operating incline with an extremely steep grade. The site was visited during the 1989

SIA Annual Conf. in Wheeling, W.Va. The Cambria County Transit Authority, owner of the Incline, would like to complete a small, documented history during the 100th anniversary year, and can offer an interested scholar total access to available records, drawings, plans, and machinery; travel expenses; and a modest stipend. Those interested, as well as others simply desiring to participate in or contribute to the study in any way should contact James R. Alexander [SIA], Univ. of Pittsburgh at Johnstown, Johnstown PA 15904.

BROCKVILLE [Ont.] TUNNEL CELEBRATES 130th. 1990 marks the 130th anniversary of the opening of Brockville's railway tunnel, the oldest railway tunnel in Canada and among the oldest in North America. Although the main line could have been connected to the St. Lawrence waterfront by a less expensive method, the owners of the fledgling Brockville & Ottawa Rwy. and the Brockville town leaders decided a tunnel would crown their achievement. After six years of labor and financial troubles, the one-third-mile tunnel was opened in 1860 to great fanfare. After it was closed in the 1950s, the city, for safety reasons, slowly began filling it in. However, a few years ago the Armagh Sifton Price Park was created on the banks of the St. Lawrence. As part of this development, the first eighty feet of the river end of the tunnel were restored and developed as a historic site. Inside, one can see the old rails and an exhibit created by the Brockville Museum on the history of the tunnel. The anniversary this summer was marked by celebratory events. The future of the remaining length of the tunnel is under discussion.

Heritage Canada Impact

IA IN ART

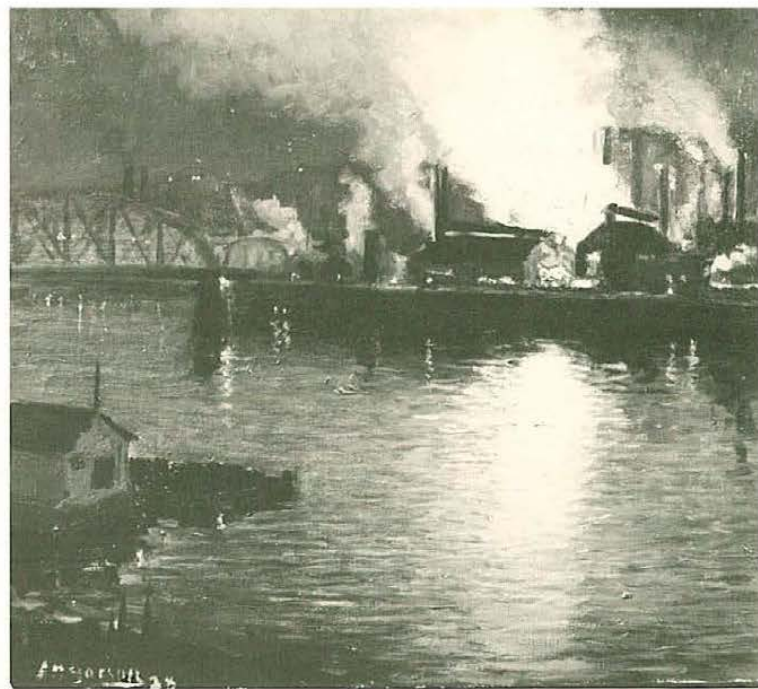
Gorson's *Industrial Scene, Pittsburgh*

Most major American urban industrial centers have inspired at least one artist to record some characteristic aspect, though many of these figures await rediscovery and research. Fortunately, scholarly interest in such themes is steadily increasing, but the regional study of American industrial art still remains an emerging field.

Throughout the first quarter of the 20th C. Aaron Harry Gorson (1872-1933) produced a series of paintings that constitute an important visual document of Pittsburgh's once dominant iron and steel industry. Gorson was one of several local artists who specialized in paintings of the mills and foundries that gave the city its distinctive character. Although he concerned himself neither with the specifics of technological processes nor with the larger social and economic issues relating to labor and workers, Gorson was, nevertheless, a pioneer in recognizing the aesthetic possibilities of his industrial subject.

Favoring twilight and night views of the mills taken from a river vantage, Gorson's paintings achieved a striking aesthetic blend of painterly Whistlerian tonalism and the romanticized urban subject matter favored by his Philadelphia and New York contemporaries, The Eight. Typical is his *Industrial Scene, Pittsburgh* of 1928, where the evening glow of the furnace fires illuminates the rich blues, greens, and browns of the surrounding structures.

Born in Lithuania in 1888, Gorson immigrated at age 16 to Philadelphia, where his brother lived. By the mid 1890s, he had begun his formal art studies, which he continued during a year in Paris, before returning to Philadelphia. When his patron, Rabbi Leonard Levy, moved to Pittsburgh in 1903, Gorson followed him there. For the next 18 years, he



Aaron Harry Gorson, *Industrial Scene, Pittsburgh*. 1928, oil on canvas, 20¼" x 24⅞". Courtesy Spanierman Gallery, N.Y.

received support from Pittsburgh's civic and industrial leaders, who were impressed by his paintings of the mills responsible for the city's prosperity. Gorson continued to paint such themes even after he had moved to New York City in 1921.

An informative 22-page catalog by Rina Younger, *The Power and the Glory: Pittsburgh's Industrial Landscapes by Aaron Harry Gorson (1872-1933)*, documents the 36 works presented in this 1989 show, reproducing nine in color and seven in black and white. It is available for \$5 from the Spanierman Gallery, 50 E. 78th St., NY NY 10021.

B.F.

NOTES & QUERIES

RR MODELER URGES IA SENSITIVITY AMONG COLLEAGUES. Frank A. Pearsall [SIA], publisher through his Green Lantern Press of two magazines for modelers, *Prototype Modeler* and *The Scale Coupler*, declared in the Mar.-Apr. 1990 issue of *PM* that he was "appalled at the lack of attention to detail that we [RR modelers] generally give to the scene that surrounds our motive power and rolling stock," while being "amazed" at the detail lavished on that same rolling stock. Modelers, he said, would run a super-detailed locomotive over "an unpainted and unenhanced plate girder bridge from Atlas."

Deciding to remedy by example, he published in the same issue a set of 14 historic photos of the Hancock Street Bridge. Taken in 1948, the photos constitute a detailed documentary record of a skewed, riveted Pratt truss in Atlantic (south Boston), Mass., that carried Hancock St. over several tracks. In his detailed captions, Pearsall walked the reader/modeler through the photos, carefully revealing item after item in a virtual anthropological reading of the images. Only the documentary research and historical analysis would be needed to satisfy the historian. Urging his readers to acquire that larger understanding, as well as more information about

historic structures, Pearsall concluded by recommending that they become members of the SIA, and supplied the necessary information.

The issue of *Prototype Modeler* is avail. for \$3 from Green Lantern Press Ltd., POB 7032, Fairfax Station VA 22039-7032 (703-250-1515). The same issue includes excellent photo studies of several trackside grain elevators along the East Belt Branch in Idaho, along with a carefully illustrated discussion of Wayne Poultry, a feed-processing operation in Troy, Ala.

HERMAN HOLLERITH, an 1879 graduate of the Columbia U. School of Mines, was inducted posthumously into the Natl. Inventors Hall of Fame for his creation of an electro-mechanical machine that tabulated large amounts of data by reading holes punched in a card. This forerunner of the modern computer followed the punched-card system first used in the Jacquard loom (1805). Hollerith, whose machine reduced the time needed to complete the 1890 U.S. Census from eight years to 19 months, formed the Tabulating Machine Co., a predecessor of IBM.

Columbia Univ. Mag.

ASME designates 1862 gunboat

The American Society of Mechanical Engineers has designated the engine and boilers of the USS *Cairo* a Natl. Historic Mechanical Engineering Landmark, in a ceremony June 15 in Vicksburg, Miss. Now salvaged and restored, the *Cairo* is permanently displayed at the Vicksburg Natl. Military Park (VNMP). The designation states that "The *Cairo* is the sole survivor of the fleet of river gunboats built by the Union during the Civil War with the object of controlling the lower Mississippi River. Designed by Samuel Pook and built by James B. Eads, the 170-ft. ironclad vessel had 13 guns. The propulsion system is the only known early example of the widely used 'Western Rivers' steamboat engine, characterized by multiple fire-tube boilers with shared steam and mud drums and a two-cylinder noncondensing engine having a small bore, long stroke, and poppet valves. This engine was designed by A.T. Merritt. With a 22-in. bore and 6-ft. stroke, it developed about 600 hp. and drove a sheltered paddle wheel of 22-ft. diameter and 15-ft. width."

The *Cairo* was a "city class" gunboat, which contributed significantly to reopening the Mississippi to Union control. The boat carried 17 officers, 27 petty officers, 111 seamen, 3 landsmen, 1 apprentice, 12 firemen, and 4 coal heavers.

Shipbuilder James Eads, a wealthy salvager of river wrecks from St. Louis, was among the proponents who, in early 1861, recommended starving the South by cutting off the food supplies coming up the Mississippi. He received a contract for seven gunboats, at \$89,000 each. The specifications were for vessels 175 ft. long, 50 ft. wide, and flat bottoms with oblong casemates for protection. Each had a paddlewheel, engine, five boilers with fireboxes below, and two 28-ft.-high smokestacks.

Eads immediately began work at two shipyards, the Carondelet Marine Ways near St. Louis and Marine Rwy. & Ship Yard at Mound City, Ill. He delivered the first gunboat on Oct. 12, 1861. Built for the North's inland navy under command of Andrew H. Foote, these gunboats were named for cities along the Ohio and upper Mississippi rivers. The *Cairo* (say kay-row), built in the Mound City shipyard, spent the first month of duty anchored near Cairo, Ill., for repairs and provisions.

Commissioned Jan. 16, 1862, and sunk the following Dec. 12, the boat saw limited action until assigned to take part in a Union attempt to capture Vicksburg. It was part of a flotilla making its way up the Yazoo River toward Greenwood, checking reports of underwater "torpedoes" in the river channel.

The *Cairo* made history by becoming the first boat to be sunk by these new torpedoes, which actually were electrically detonated mines. The explosions left holes along the port bow, sinking the boat in about 12 mins.

Not until the late 1950s did interest in the *Cairo* surface, when VNMP historian Edwin Bearss located it. Raised in Dec. 1964, the *Cairo* provides first-hand information on crew life and river-gunboat operations during the Civil War. The structure, soft from water and heavy with river silt, was badly damaged during the salvage process, but has been partially restored. Remaining on board, the guns were fully loaded, sights in place, and percussion locks mounted for firing. Surviving intact, the engine and boilers constitute the 96th Natl. Historic Mechanical Engineering Landmark designated by ASME. Info.: ASME, 345 East 47th St., NY NY 10017 (212-705-7740).



Upstream face of spillway gate structure at Fort Peck Dam. Photo courtesy Jane Morley, ASCE.

Fort Peck Dam landmarked by ASCE

Fort Peck [Mont.] Dam, world's largest hydraulic-filled dam, was designated a Natl. Historic Civil Engineering Landmark by the American Society of Civil Engineers in June.

Designed and constructed by the U.S. Army Corps of Engineers over a seven-year period, the dam was a key project of the Works Progress Administration. It was completed in 1940 and was the largest dam of any type in the world for 30 years. The crest extends over four miles. Even during construction, the dam set records: foundations included steel sheetpile extending to a record depth of 163 ft., and over 14 million yards of earth were excavated for the spillway. The project required the largest construction plant and workforce assembled since the construction of the Panama Canal.

Fort Peck Dam was built using hydraulic-fill, a method pioneered by J.M. Howells, who built the first hydraulic-filled dam in 1895. The method consists of pumping a mixture of water and solids to discharge locations along the upstream and downstream edges of the dam. As this mixture flows toward the center, the heavier solids fall out leaving only the finer solids deposited at the core. Water will continue to flow out of the core and the fine materials will solidify into an impervious wall. [The dam and townsites are discussed in *SIAN Spring 87:5*. Ed.]

ASCE 1991 BRIDGE CALENDER NOW AVAILABLE. Twelve award-winning bridges and bridge rehabilitations are featured in large, full-color photographs in the Am. Society of Civil Engineer's 1991 calendar, now available for \$8 ppd. w/mailer, from Sales & Marketing Dept. (SW-16), ASCE, 345 East 47th St., NY NY 10017-2398. The photos were selected from the files compiled by the Fed. Hwy. Admin. for their annual "Excellence in Hwy. Design" awards program. As a result, the calendar selections include striking recent examples, such as the steel-arch Smith Ave. High Bridge over the Mississippi in St. Paul, Minn., as well as historic bridges, like the rehabilitated Wheeling Suspension Bridge (1849), viewed during the 1988 SIA Annual Conf. [*SIAN Summer 1988:3*]. Calendars also can be ordered in quantity and with commercial imprints; contact Shirley Wolfe (212-705-7276).

ANOTHER RECENT ASME LANDMARK is the **B&O 4500**, the first locomotive built under the U.S. RR Admin., in 1918. B&O 4500 was built by Baldwin as a "light Mikado" (2-8-2), the most frequently produced USRA freight design, and was designated Class Q-3 by B&O. In service for almost 40 years, 4500 was retired in 1957 and has been on display since 1964 at the B&O Railroad Museum in Baltimore.

SIA AFFAIRS

ROYALTY TO SIA. The Society is pleased to announce receipt of the twelfth royalty check (\$81.86) from sales of *Historical Archaeology: A Guide to Substantive and Theoretical Contributions*, ed. Robert L. Schuyler [SIA] (\$24.95 + 2.50 post., Baywood Publishing Co., Inc., Amityville NY 11701).

NEWS OF MEMBERS

Jane Morley is the new coordinator of the historical activities for the American Society of Civil Engineers in the Wash., D.C., office. Her responsibilities include oversight of the Historic Civil Engineering Landmark Program. For further info. about this program or about history at ASCE—including a copy of the ASCE's *Guide to History and Heritage Programs*—contact her at ASCE, 1015 15th St. NW, Suite 600, Wash. DC 20005 (202-789-2200).

On leave from Renewable Technologies Inc., Butte, Mont., **Fredric Quivik** is a William Penn Fellow at the Univ. of Pennsylvania, where he is studying for his doctorate in the history of technology.

Chris Andreae leaves Canada to pursue a Master of Industrial Archaeology degree at the Univ. of Birmingham, England, during 1990-91. In particular, he will study issues associated with techniques for determining the location and characteristics of historic industrial waste sites. During his absence, his consulting firm Historica Research Ltd. will be managed by Archaeological Services Inc., 637 Wellington St., London, Ont. N6A 3R8.

T. Lindsay Baker, editor/publisher of the *Windmillers' Gazette*, has been named curator of the Gov. Bill & Vara Daniel Historic Village, part of Strecker Museum complex at Baylor Univ., Waco, Tex.

LOCAL CHAPTERS

At its May 31 meeting, the Board of Directors welcomed two newly formed chapters, both based in Pennsylvania, which must be going for the record.

The **Josiah White Chapter** covers the Allentown-Bethlehem-Easton area, and the first president is Charles L. Best, Dept. of Engineering Science, Lafayette College, Easton PA 18042.

The **Susquehanna Chapter** is based in the Harrisburg area, but reaches as far north as Wilkes-Barre and Scranton, and includes members in Lancaster and York. At the chapter's organizational meeting, Jon D. Inners was elected president; Deborah Suci, treasurer; and Dan Perry, secretary. The initial goal of the chapter is to document the IA of the Susquehanna watershed region, which includes the abandoned iron furnaces in York and Lancaster counties and the deteriorating coal breakers in the anthracite region. For membership info., contact membership chair Bill Jordan at the chapter mailing address, c/o Cornwall Iron Furnace, POB 251, Cornwall PA 17016.

Organizing is under way for possible chapters in Oklahoma, South Dakota, and (!) western Pennsylvania. Anyone wishing to organize an SIA chapter can get info. from Herbert Harwood, Chapter Coordinator, 620 Stevenson Ln., Baltimore MD 21204.

LETTERS

Editor:

The spring number of the *Newsletter* has just arrived. Congratulations on "IA in Art," which is something of a widening of SIA's tunnel vision. You have, however, neglected to say of what material the figure is, whether carved or cast, its sculptor, the company (here or abroad) of craftsmen who produced it.

May I suggest that the sculptural group over the main entrance to the Smithsonian's Natl. Museum Building (1877) at 9th St. & Jefferson Dr., could be the emblem for SIA since it presents *Columbia Protecting Science and Industry*, which of course identifies the function for which the building was designed.

The architect, Adolph Cluss, no doubt suggested the theme to the sculptor, Caspar Buberl (1834-1899), who designed the group and modeled the allegorical figures. The M.J. Seelig Co., in Brooklyn, N.Y., cast the group in zinc and, after finishing, painted it with a wash of concrete mixed with some sand, to imitate the traditional stone. The group was in place about 1881.

Cast zinc (white bronze) was coming into popular use for non-bearing architectural elements such as cornices, and for church, park, funerary, and store-front statuary. It was one more step toward the industrialization of the art of architecture.

*Esther Mipaas
1798 Walnut St.
Berkeley, Calif. 94709*

Winter Study Tour to Puerto Rico

From Jan. 10 through 17, up to 46 IA enthusiasts will visit this sunny isle of palms, beaches, warm water *and* industrial archeology, as part of the SIA's Puerto Rican Winter Study Tour. The restored Buena Vista coffee plantation, a sugar plantation and mill of the type that once dotted the landscape, and the Ron Barrilito rum distillery, will be among the historic industrial sites visited. Process tours will sample current operations: coffee mills, food processing, metal works, and others. Also included are the El Yunque Rain Forest and the Taino Indian site. Enthusiastic cooperation from the government and the P.R. Conservation Trust insures access to specific sites.

After one night in San Juan at the El Convento Hotel, a former convent built in the 17th C, the group will tour the island, spending two nights at each of three *paradores* (country inns). These guest houses are small, owner-managed, and government-supervised. One lies in the country and offers a natural mineral hot spring; one is in the beach town of Lajas; and the third is in the mountains overlooking the ocean.

Access to significant historic sites and process tours of active industries will make the offerings diverse and fascinating. The location, itinerary, and planning will afford many opportunities for general sightseeing and vacationing in addition to the tour's substantive agenda. IA touring will conclude by 2 to 3 p.m. daily. Dinner will be available at *paradores* or local restaurants, with lunches at local stops or just picnic style enroute.

For registration and all info., contact Dorothy Mahoney, The Designer Group & Associates, Box 332, North Andover MA 01845 (508-686-5119).

Fall Tour in 'Bill-Town,' Oct. 25-28

If you missed the "first" Fall Tour in the Yukon, don't fret, because a "second" Fall Tour has been scheduled for Oct. 25-28 in the vicinity of Williamsport, Pa. Co-sponsored by the newly formed Susquehanna Chapter SIA and the Williamsport-Lycoming Chamber of Commerce, the tour will explore the area's diverse industries, from the mid-19th-C lumber industry to the present.

Williamsport, a city of 33,000, is some 125 miles northwest of Phila., situated in the broad valley of the West Branch Susquehanna River. Known in the late 19th-C as the state's "lumber capital," its glory days were ended by indiscriminate destruction of the native pine and hemlock forests and by the catastrophic flood of 1889, which destroyed the great log boom across the river. The area's modern economy is based on a diversity of agriculture and light industries, including foundries, metal-fabricating plants, furniture makers, and wire-rope and boiler manufacturers. Nationally, "Bill-Town" is best known as the birthplace of Little League Baseball (& site of its World Series) and the home of the *Grit*, "America's family newspaper."

Thurs. evening will include a reception at the Lycoming County Historic Museum, followed by a screening of "The Last Raft," a dramatic film of the last lumbering raft of 1938. Friday tours will include Hermance Machinery (industrial valves), Williamsport Wire-rope Works, Keystone Veneers, Williamsport Foundry, Grumman-Allied Industries (commercial-vehicle bodies), and *Grit*. A Susquehanna River cruise on the riverboat *Hiawatha* will include a visit to the ruins of the river boom.

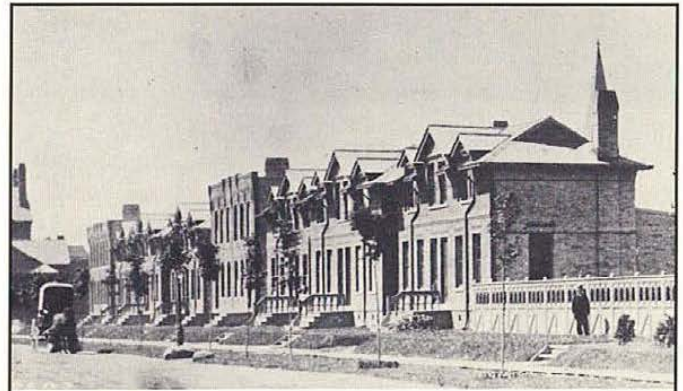
Saturday provides a choice of two tours. The Muncy-Montoursville area tour includes Koppers, Inc. (RR ties), Sprout-Bauer, Inc. (a div. of Combustion Engineering), dairy and fruit farms, and the renowned cast-iron Reading-Halls



The Reading-Halls Station Bridge (c1850). T. Richey photo, courtesy Pa. Hist. & Mus. Comm., Bureau for Hist. Pres.

Station Bridge [c1850, NR]. The Clinton County Tour includes the Hammermill Paper Co. plant at Lock Haven, two operating grist mills, and the West Branch Div. locks of the Susquehanna Canal. The day concludes with a family-style harvest dinner provided by the Lycova Grange.

Sunday provides an optional trip to the Pine Creek area and ghost lumber towns, or an informal tour of iron industry sites: Ralston Furnace, underground mines, and a surface stripping site. Regis. & info.: SIA Fall Tour 1990, c/o Susquehanna Chap. SIA, Cornwall Iron Furnace, POB 251, Cornwall PA 17016 (or call: Mary Ann Landis, 717-636-2070, or Jon Inners, 717-787-6029).



SIA goes to Chicago in 1991

Plan ahead for the SIA 20th Annual Conf., June 13-15, 1991, in Chicago, co-sponsored by the Public Works Historical Society, which is headquartered there. Among the many sites to be viewed is George Pullman's model company town, established in the 1880s for the workers of his Palace Car Co., and pictured above. Info.: Howard Rosen, PWHs, 1313 E. 60th St., Chicago IL 60637 (312-667-2200).

SITES & STRUCTURES

KENNECOTT MINE ON TRUST'S ENDANGERED LIST. The Kennecott National Historic Landmark, an uninhabited mining camp located adjacent to the Kennecott Glacier and located within Alaska's Wrangell-St. Elias Natl. Park & Preserve, is one of three new additions this year to the Natl. Trust's annual list of the 11 most endangered nationally significant sites. Operating between 1911 and 1938, Kennecott was among the largest copper mines in the U.S. and was the last of the high-grade copper ore deposits discovered in the American West. In 1905, the Guggenheim family and J.P. Morgan organized the "Alaska Syndicate" to invest in the Kennecott Mines Co. and fund the mine's development. Kennecott soon became the largest, most costly and complex mining operation in Alaska.

The site, dominated by a wood-frame mill building rising up the slope above the railway, includes 45 major buildings and 25 outbuildings, an aerial tramway system, and four mine camps. Original equipment remains in the mill building and powerhouse. Towers and tension stations of the tramways that connected the four mines to the mill building still remain, along with the bunkhouses, the tramway terminals, and the tent platforms of the mining camps.

Exposed to the harsh winters in the Wrangell Mountains, the abandoned buildings are rapidly deteriorating. Although isolation has provided some protection to the buildings, records, and objects, increased visitation has resulted in vandalism and unauthorized "collecting" of artifacts. Emergency roof repair and building stabilization are the most critical immediate needs. This year the Alaska legislature provided \$50,000 for emergency repairs to the buildings. The Natl. Park Service is studying a donation/sale proposal by the owners, the Kennecott Corp. Creation of a Natl. Park may be the answer for long-term preservation.

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[Kennecott is the only industrial site on the list. Walden Woods in Mass. and Penn School in S.C. are the other new additions. Ed.]

**19th Annual Business Meeting
June 1, 1990
Philadelphia, Pennsylvania**

The meeting was called to order at 1:05 p.m. by President Emory Kemp at the Sheraton University Hotel.

APPRECIATION. President Kemp recognized the outstanding efforts of the members of the Oliver Evans Chapter, conference organizers: Jane Mork Gibson and the steering committee; John Bowie and the guidebook committee; and Carter Litchfield and the paper-session committee. Kemp noted that a number of students were attending the conference using stipends provided through the generosity of a longtime SIA member, and encouraged other members to contribute as well.

CONFERENCES & WORKSHOPS COMMITTEE. President Kemp noted, to his and others' surprise and delight, that the August 16-26 Yukon Fall Tour had sold out. Those with less exotic tastes can attend the alternative and nearby 1990 Fall Tour in Williamsport, Pa. The 1991 Annual Conference will be in Chicago, co-sponsored by the Public Works Historical Society, while the 1991 Fall Tour will be in South Dakota. Work is under way to hold the 1992 Annual Conference in Buffalo, N.Y. Additional tour plans include a proposed 1991 Winter Tour in Puerto Rico, announced by Laurence Gross for Jan. 10-17, and the possibility of a summer study tour in Britain. President Kemp also expressed the hope that the Society could develop field schools to encourage the participation of more members in the techniques of IA.

PUBLICATIONS COMMITTEE. Journal editor David Starbuck reported that the forthcoming issue of *IA* would be mailed at the end of July. It would be a theme issue, drawing on papers presented at past bridge symposiums. The Society now is publishing two issues of *IA* annually. Starbuck noted the continuing need for quality papers and emphasized the need for members to consider publishing in *IA* first. President Kemp asked that photos taken on the various tours during the Phila. conference be sent to newsletter editor Bob Frame. Kemp also noted that the Society is exploring additional publishing ventures, including books, bibliographies, and reprints. John Bowie reported that the Oliver Evans Press has reprinted, for the first time anywhere, the first edition of Oliver Evans' *The Young Mill-Wright and Miller's Guide* and *The Abortion of the Young Steam Engineer's Guide*.

MEMBERSHIP COMMITTEE. Membership has increased to approximately 1,500, allowing the Society to expand activities. Links with engineering societies and other groups with common interests are being explored, along with the possibility of an IA session at a meeting of the Society for the History of Technology (SHOT). President Kemp reported that he had visited each chapter during his tenure, and also noted the formation of new chapters.

TREASURER'S REPORT. Treasurer Nanci Batchelor reported that the SIA began 1989 with a fund balance of \$36,452. Revenues for the year were \$42,920, while expenses were \$37,781, leaving a final 1989 fund balance of \$42,590. 1990 revenues to date were \$34,280, with current expenses at \$24,753. The SIA currently is producing two issues of the journal annually, at approximately \$12,000 each.

OBERLIN GASHOLDER-HOUSE PRESERVATION. President Kemp reported that the Society was approached by a group wishing to preserve a gasholder house in Oberlin, O. The Board has approved a statement in support of preservation, to be sent to the Oberlin City Council, the Ohio State Historic Preservation Office, and other appropriate parties. Kemp urged individual members to write letters of support as well.

NORTON PRIZE AWARDED. Each year the SIA awards the Norton Prize for the best article appearing in *IA* during the preceding three years. The prize is a cash award endowed by the Norton Company, Worcester, Mass. The 1990 Norton Prize recipient is Laurence F. Gross for "Building on Success: Lowell Mill Construction and Its Results" (*IA*2014:2 [1988]: 23-34).

NOMINATING COMMITTEE REPORT ON ELECTIONS. Chair David Shayt announced the results of the election:

President: **David Salay**
Vice President: **Amy Schlagel Federman**
Directors: **Edward Rutsch**
Fredric Quivik
Jane Mork Gibson
Nominations Committee: **Duncan Hay**

Richard Anderson becomes chair of the Nomination Committee. Shayt also noted that the committee had neglected to present a candidate for representative to The Intl. Committee on the Conservation of the History of Industry (TICCIH), and therefore had requested **Stephen Victor** to serve an additional annual term.

REMARKS OF OUTGOING PRESIDENT KEMP. Kemp recalled that as vice president he chaired the committee that produced a long-range planning document for the Society, and as president he was responsible for implementing that document's recommendations. One of the chief recommendations was the creation of standing committees of the Board of Directors. These committees reduced the need to bring all decisions before the entire Board.

NEW BUSINESS. Incoming President David Salay remarked on his pleasure in serving as an SIA officer under presidents Helena Wright, Thorwald Torgerson, and Emory Kemp. He noted that Past President Kemp will remain very busy as director of the newly formed Institute for the History of Technology and Industrial Archeology at the Univ. of W.Va., and as president of the Public Works Historical Society.

SPECIAL EVENT. A high point of the business meeting was a surprise visit from time-traveler "George Kephart," historic furnace-filler from Hopewell Iron Furnace near Phila. The opinionated Mr. Kephart harangued the audience on current politics and the changing 19th-C world of the iron industry, closing with a rousing rendition of an anthem of the Iron Moulders Union of North America. [*Kephart was played with superb tobacco-spitting skill by Natl. Park Service interpreter Richard Pawling. Ed.*]

The meeting was adjourned at 2:00 p.m.

*Robert Casey
Acting Secretary*

IA in Philately: Oberlin Smith



Philatelist Luther Dietrich [SIA] sends this special IA cancellation honoring Oberlin Smith, founder of Ferracute Machine Co. According to Robert M. Vogel [see *SIAN* 85 3/4: suppl.], "Ferracute (a minor god of metal working) was largely the child of the innovative, dynamic, mildly eccentric Oberlin Smith (1840-1926). It was an important Bridgeton, N.J., builder of metal-forming presses in a wide range of applications, operating from 1864 to 1968 (and still going, under new owners, elsewhere). Ferracute supplied thousands of presses to auto builders, Victor talking machine cos., and mints around the world. The story of shipping and setting a mint in China, ca. 1898, is tragicomic madness. The whole lot went off a junk into the drink at one point, the resulting rust pits in the dies leaving pimples in the emperor's cheeks. He loved it – harder to counterfeit!"

CALENDAR

Have a meeting, conference, or event of interest to SIA members? Submit announcements to the Editor, SIAN.

Oct. 17-21: 44th Natl. Pres. Conf., Natl. Trust for Historic Preservation, Charleston, S.C.

Oct. 18-20: 12th Annual N. American Labor History Conf., Wayne State Univ., Detroit. Info.: Stanley D. Solvick, Program Chair, Dept. of Hist., WSU, Detroit MI 48202 (313-577-6145 or -2525).

Oct. 18-21: Annual Meeting, Society for the History of Technology, Cleveland, Ohio. Info.: Lindy Biggs, Dept. of Hist., Auburn Univ., Auburn AL 36849 (205-844-6645 or Bitnet electronic mail HIST@AUDUCVAX).

OCT. 25-28: SIA FALL TOUR, WILLIAMSPORT, PA. Info.: Mary Ann Landis, 717-636-2070, or Jon Inners, 717-787-6029.*

Nov. 8-10: 22nd Annual Meeting, Pioneer America Society, Williamsburg, Va. Info.: Marshall Bowen, Program Chair, Dept. of Geography, Mary Washington College, Fredericksburg VA 22401 (703-899-4329).

1991

JAN. 10-17: SIA WINTER STUDY TOUR, PUERTO RICO. Reservations due by Nov. 1. Info.: Dorothy Mahony, 508-686-5119.*

May 10-11: Subway History Conf., N.Y.C. Info.: Terrie S. Rousie, Director, N.Y. Transit Museum, 81 Willoughby St., Brooklyn NY 11201.

May 15-18: Annual Meeting, Vernacular Architecture Forum, Santa Fe, N.M. Info.: Chris Wilson, School of Architecture & Planning, U. of N.M., Albuquerque NM 87131 (505-277-2903).

JUNE 13-15: SIA 20th ANNUAL CONF., CHICAGO, in cooperation with Public Works Historical Society. Info.: Howard Rosen, PWHS, 1313 E. 60th St., Chicago IL 60637 (312-667-2200).

**Find details on this event elsewhere in this issue.*

The *SIA Newsletter* is published quarterly 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 \$25; couple, \$30; institutions \$30; contributing, \$50; sustaining, \$100; corporate, \$250; student, \$20. Send check payable to SIA to Treasurer, Room 5020, National Museum of American History, Smithsonian Institution, Washington, DC. 20560; all business correspondence should be sent to that office.

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