

SOCIETY FOR INDUSTRIAL ARCHEOLOGY

NEWSLETTER

Volume 16

Winter 1987

Number 4

FOREST SERVICE SAVES 1886 CHARCOAL KILNS

In the expansive Birch Creek Valley of eastern Idaho stand three of the four brick charcoal kilns remaining from the original 16 built in 1886. Nearby is the fourth (*below*), showing some of the deterioration that the current stabilization project is designed to retard. *Photos courtesy U.S. Forest Service.*



Work began this year on a U.S. Forest Service project to stabilize four brick charcoal kilns [1886; NR, HAER] in the Birch Creek Valley of Targhee National Forest in eastern Idaho. They are the only remnants of a short-lived but significant 1880s mine and smelter that once had 16 kilns. Also known as the King charcoal kilns after their builder-owner, they were erected in response to a local demand for smelter fuel. They were used less than three years in a lead-silver operation of dubious long-term return.

Each of the 20-ft.-high, parabolic, wire-rope-tied domes held about 30 cords of local douglas fir and produced 2,000 bushels of charcoal in a two-day burn. Loading was done through lower front doors and upper, ramp-

accessed doors in back. Rows of vents circling the base controlled air to the fire, and were sealed with clay and pieces of brick or stone. The bulk of the new work involves reinforcing sections of the foundation with concrete footings to prevent further roof and wall deterioration.

The Birch Creek mines were less well known than similar mines at Wood River and Coeur d'Alene, but equally important. The most productive was the Viola Mine, which yielded about \$2.5 million worth of lead and silver between 1883 and 1888, although the mine was more valuable for its lead than its silver. Following its discovery about 1881, relatively small quantities of ore were shipped to Omaha, Neb., and Kansas City. The nearest rail line was the Utah & Northern Rwy. at Camas, 65 miles away, making it far more economical to ship metallic lead and silver than ore, so a two-furnace smelter with a daily capacity of 80 tons was added in 1885.

Initially the smelter's charcoal fuel was made in pits, but beginning in 1886 16 brick kilns were built by Warren King, charcoal supplier to the mining company. About 50,000 bu./mon. of charcoal was produced, and the kilns provided work for some 150 people living in the nearby town of Woodland.

The mine's projected output proved overly optimistic, and initially high dividends were deceptive. It all emerged as a pattern to bilk English investors. In Nov. 1888 the smelter was shut down and the last dividend paid. The investors, who recovered only a third of their money, were not the only ones surprised. An 1890s photo shows a lot of wood stacked behind King's kilns, some of which remains today. Over the years, local farmers dismantled 12 of the kilns to salvage the brick.

For more information on the kilns, contact the Dubois Ranger Dist., P.O. Box 46, Dubois ID 83423.

P.D. with J.McD.



FALL '87 TOUR IN SOUTH JERSEY PINE BARRENS

In Sept., the 1987 Fall Tour headed to the Pine Barrens region of southern N.J. with a delegation of 65 members. Depending on how you measure, the Pine Barrens describe an area between 650,000 and 1 million acres of bull pine and scrubwood forest, white cedar swamp, and salt-hay marsh. Located in the most densely populated state, at the center of the Boston-Washington megalopolis, the area has a population density lower than some of the western desert states.

Large parts of the Barrens remain in the same condition, and offer the same resources, that enabled the growth of important industries in the 18th and 19th Cs. These included timbering, shingle making, ship building, shipping, oystering and clamming, fishing, iron founding, glass and paper production, and agriculture—especially the growing of cranberries and cultivated blueberries. The purpose of the tour was to visit the remains of these enterprises, as well as to immerse ourselves in the “Pine Barrens milieu.”

The tour was HQd at the Methodist Conf. camp center at Mt. Misery, one of the few camping areas available in the Pines north-central region. The camp's name probably is derived from “Misericordia,” which may reflect the original Huguenot settlers of the area. The “mountains” are a series of low hills to the east, none over 200 ft. above sea level. Providing adequate shelter and several modest meals at a reasonable cost, the camp stay introduced tourgoers to the sand and trees typical of the Pine Barrens.

The program began on the evening of Sept. 10 with presentations by two South Jersey residents. Brian Kutner gave a slide introduction to some of the upcoming sites, including views which non-amphibious tour members would never be able to take themselves. Don Pettifer, director of the **Cold Spring Harbor Museum** in Cape May and former director of the **Wheaton Glass Museum**, gave an overview of the local glass industry, which began when Caspar Wistar built South Jersey's first glass house on Alloway Creek in 1739. Finally, we viewed a film of early bottle-making machinery, filmed in 1935 at the **Whithall-Tatam Co.** in Millville.

On Friday morning we boarded buses for a trip that would extend to Jersey's southern shore along the Delaware Bay. Our first stop was the **W. Skinner & Son Co.** in Hammonton, one of the early real-estate developments that grew up around glass houses. Skinner was organized in 1895 to produce a line of cut-glass products. That industry has disap-

peared, but great-grandson Thomas Skinner continues operations with the cutting and polishing of heavy, smoked-glass bases for pen sets made by the Shaeffer and Cross companies. Most of the machinery is old is belt driven. Skinner gave a virtuoso demonstration of cutting heavy slabs with a common glass-cutter that made most of the home fix-it people green with envy.

The next series of stops reached into Cumberland County for the only separation into three different tour routes. One of the sites visited was Bivalve on the Maurice (say “Morris”) River, where we toured an oyster-shucking plant and viewed part of the oyster-dredging fleet largely idled by a viral infection known as “MSX,” which kills some 90% of oysters before they reach maturity. Most of the fleet is composed of early 20th-C wooden sloops converted to diesel after World War II, when the state changed dredging rules. Even the loss of masts and rearrangement of deck housing cannot hide the original sailing-ship lines.

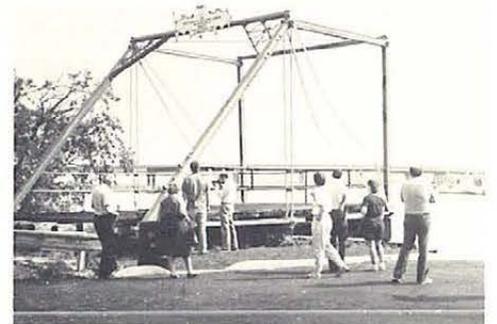
We also visited the **Rutgers Univ. shellfish laboratory** at Bivalve. The lab is working on the oyster-virus problem and studying the equally vital clamming industry. The Gorton Co. runs a new local plant, producing



Above: On the dock at Bivalve, N.J., SIA Pres. Torgersen describes the local oyster and clam industries.

Right: The preserved panels of an 1888 Dean & Westbrook bridge at Mauricetown, N.J.

Thomas Flagg photographs.



frozen clam products. A much-reduced oyster industry, which once shipped two train-loads a day from Bivalve, now uses outside oysters.

Another site visited was the **Morie Co. sand mine** at Mauricetown. While Morie no longer produces sand glass here, the mine is symbolic of this once-important industry. Current products include a variety of foundry and filtering sands. A floating dredge was observed operating on one of the ponds, which soon will be converted to a lake with expensive waterfront properties. The company will use other ponds for some 15 more years. The dredged sand is pumped through a pipe line to a filtration and grading plant.

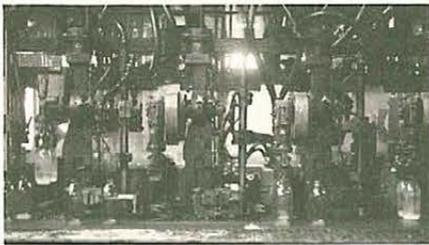
The third stop was Mauricetown, which had its origins as an the early 18th-C Swedish community. The town resembles a mid-19th-C seaport, alive and well in the Pine Barrens without the commercial clutter that afflicts so many of the more northerly ones. At one time Mauricetown was the site of the **Vannaman shipyard**, which produced sloops and schooners for the coastal and trans-Atlantic trade. Numerous houses were built by captains and shipowners. The church has a memorial window for 22 local captains lost at sea. Here we photographed the beached remains of a hand-operated, 1888 Dean & Westbrook swing bridge.

The three buses reunited at the Millville Methodist Church, whose



Cutting, shaping, and polishing glass at W. Skinner & Son Co., Hammonton, N.J. Photos by Thomas Flagg, Gerry Weinstein, & Carol Poh Miller.





Above & right: The Millville, N.J., glass-bottle plant of Foster-Forbes Co., where beer bottles are manufactured. Carol Poh Miller photographs.



Glassblowing demonstration (left) at "Wheaton Village," Millville, N.J., where the Wheaton Glass Co. has erected a replica of the firm's original glass furnace (below). Carol Poh Miller & Thomas Flagg photos.



parishioners has prepared a magnificent buffet luncheon.

The afternoon was devoted to glass. Our first visit was to the **glass-bottle plant of Foster-Forbes**, successor firm to Whithall-Tatum, making this the oldest glass operation in the U.S. The most impressive part of the tour was the automated bottle-forming machinery, producing beer bottles by the blow method. Also in operation was a new, high-speed vacuum machine, which can make bottles that are lighter and stronger. The day's final stop was "**Wheaton Village**," also in Millville. We inspected the extensive glass museum supported by the **Wheaton Glass Co.** Next door is a replica of the company's original glass furnace, where we saw early hand methods of glass making. We saw decorative objects blown as well as pressed-glass dishes being molded.

The buses returned to camp for dinner and evening presentations. David Orr [SIA] of the Nat. Park Service reported on the fast-disappearing "watermen" of the Delaware side of the Bay—seasonal fishermen and hunters whose lives parallel those of the South Jersey "pineys" who no longer can depend on 19th-C industries. Bill Bolger prepared us for our Saturday visit to the historic cranberry plantation of Whitesbog, and Andy Windisch of the Rutgers lab gave an overview of regional geology and botany.

Saturday morning began with visits to three iron-furnace sites that were part of the Richards family holdings in the early 19th C. We made a quick stop was at Atsion (say "At-sign"), just south of the first U.S. Indian reservation at Indian Mills. There are no above-ground remnants

of the **Atsion furnace** or forge, and the mansion and company store are replacements erected by Samuel Richards when he gained control of the property in 1824.

The next stop was **Weymouth Furnace**. Developed in 1801, the company became a major producer of water pipe, shipping as far as New Orleans. It became a Richards property in 1808. The visible ruins are from two paper mills that replaced the furnace in 1866. They closed in 1887 and the site became a ghost town. We inspected the 1805 Weymouth Chapel interior. The Weymouth visit ended with a tour of the cemetery, with its bottle-makers' graves and cast-iron grave markers.

The morning's major site was **Batsto**, a state restoration of the iron plantation begun in 1766. It, too, became a part of the Richards empire in 1784, belonging to clan father William. Later, when iron production declined, Richards turned to the manufacture of window glass. While the furnace and foundry cupola have disappeared, much of the village, store, grist and saw mills, farm, and mansion house remain. Budd Wilson, the archeologist who led the dig for the remains of the glass houses, was our chief interpreter.

After a picnic lunch at Batsto, we headed for Harrisville on the east branch of the Wading River. The area's first mill was built about 1750. In 1795, Isaac Potts built a rolling mill and a slitting mill to use the iron he was producing at his **March Furnace**, some four miles upstream. By 1834, iron was out, and the waterpower was applied to paper production. In 1887 the mill was purchased by the Harris Bros. who gave their name

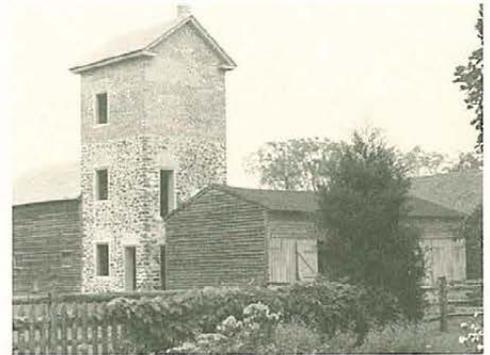


Above: The 1805 chapel at Weymouth, N.J.

Right: Outbuildings at the Batsto iron-plantation site.

Below: At the Samuel Richards mansion in Atsion, N.J. The porch columns are iron.

Carol Poh Miller photographs.





Cranberry country around Whitesbog, N.J. *Left:* Storage House used for cranberry production. *Center:* Workers' housing in Whitesbog. *Right:* Cranberry bog. *Carol Poh Miller photographs.*

to the mill site, which they greatly enlarged. The product was a heavy butchers' paper, made from the salt hay and reeds of the nearby marshlands and colored by the dark brown hues of the cedar water. The operation failed in 1896 and the town burned in the great forest fire of 1914. Budd Wilson was our guide to the ruins and the town's history.

The last visit of the day was **Whitesbog**. Late in the 19th C, J.J. White developed the former properties of the Hanover Furnace into the largest set of cranberry bogs for their time, in the emerging new industry. A machinist for Hezekiah Smith of Smithville, White also designed much of the cranberry machinery still used today. His daughter Elizabeth developed the cultivated blueberry, which proved to be an alternative crop for the cranberry grower, as well as the local workers who found employment for an extended season. Bill Bolger and Edward Rutsch [SIA], authors of a state-sponsored report on the history and future of state-owned lands, explained cranberry production and guided us through the remaining buildings.

There was a car caravan to Trenton on Sunday. Enroute, we had a brief walk through Smithville, **Hezekiah Smith's manufacturing village** near Mt. Holly. In the post-Civil War decades Smith was a highly respected inventor and manufacturer of woodworking machinery. We also drove through the 1905 mill town of Roebing, though a heavy rain prevented photography. In Trenton, Clifford Zinc [SIA], planner for the proposed Roebing museum, walked us through the remains of the Roebing wire-

rope mill [HAER] where we saw the largest of the rope machinery surviving from the original works [see SIAN Fall 86:9-11].

We also investigated the remains of the **American Wire Co.**, across the bed of the Delaware & Raritan Canal. American was a later competitor of Roebing, but the site and some of the buildings were part of the Trenton Iron Co., which was built by Peter Cooper and his son-in-law Abram Hewitt. Here Hewitt introduced the Siemens-Martin open-hearth furnace to the U.S. in 1868.

The tour concluded with a private buffet dinner in the 1765 Eagle Tavern, just a short walk from the **Cooper-Hewitt site**. The get-together was adjourned in anticipation of the Annual Conf. at Wheeling, W.Va., May 19-22. Thanks go to the organizing committee of Ron and Nancy Batchelor, Terry Karschner, and Janet and Thorwald Torgersen. *T.T.*

FALL TOUR FOLLOW-UP. If the Fall Tour in the Pine Barrens sparked a deeper interest in the region, you might want to see the Winter 1988 issue of *Folklife Center News* (Library of Congress, American Folklife Center, Wash. DC. 20540), which has a three-page discussion of the Pinelands Folklife Project and associated programs, publications, and archives. Incidentally, the same issue has a feature on the plans for the Lowell [Mass.] Folklife Project, which will be collecting information on ethnic and neighborhood life in industrial Lowell. *L.L.*

BOWLER MATERIALS AT BATH INDUSTRIAL HERITAGE CENTRE

Bath, England, may have become famous as the world of Jane Austen, but some of its most significant IA is in the benevolent custody of the Bath Industrial Heritage Centre. The Centre houses a reconstruction of the shop, offices, workshops, and aerated water manufactory of Jonathan Burdett Bowler. Bowler set up in business in Bath in 1872 as "engineer, plumbers' and general brass founder, gas fitter, locksmith, and bell-hanger." His children and grandchildren managed the firm until 1969.

During 97 years of trading, virtually nothing was thrown away. The mineral-water factory was much as it had been 80 years earlier, with the barrel for generating the carbonic acid gas, the pump for aerating the water, the wonderful collection of bottles of all types—a museum in their own right—the catalogs, price lists and advertisements, and the little room where the ingredients were mixed, the recipes kept locked away in the office safe. The basis of most of the recipes was a mysterious liquid known as "Twaddle," which consisted of a hundredweight of sugar, four ounces of refined saccharine, and four pounds of tartaric acid, all stirred briskly into 50 gals. of water. Everything—lemonade, ginger ale, lime juice—contained Twaddle.

In the engineering shops in 1969, everything looked as if one happened to be visiting on Sunday, awaiting the workers' return the next day. Bowler rarely bought any new machinery and most of the machines date from the 1870s or, in one or two instances, even earlier. In a corner, waiting to be used, was a portable, hand-powered milling machine, which used to be taken out to farms to reface the slide valves of steam engines. In the stores were gauge glasses for boilers, a stock of brewery fittings not drawn



on for 50 years, bell handles, and reconditioned pumps. Also in stock were exterior ornamental gas illuminating devices made of perforated gas-piping in the form great stars, once used for coronations and jubilees.

In 1978 the contents of the Bowler property were moved into their new home at the Centre and the original buildings were demolished for a parking lot.

The Bowler Collection consists not only of machinery, hand tools, thousands of bottles and other objects, but also an extensive archive. Now being cataloged, it includes over 50,000 documents relating to every aspect of the business. A number of early-20th-C U.S. manufacturers are represented in the tool collection, mostly from Mass., Ohio, and N.Y.

There is a permanent exhibit on Bath architectural stone, including a full-size model of a mine working-face, showing how the stone was extracted before mechanization. An exhibit on Bath's still flourishing cabinet-making industry is planned.

Available from the Centre are a booklet on the collection, reproduction bottle-labels, and a list of the U.S. tools. Contact Russell Frears, Trustee, Bath Industrial Heritage Centre, Camden Works, Julian Rd., Bath BA1 2RH, England.

NOTES & QUERIES

RRs IN THE ARCHIVES & LIBRARY. Since Jan. 1963, the Public Archives of Canada has been the official repository for the historical records of the Canadian National Railways Co. and its nearly 700 corporate predecessors. While most of these records are held by the Federal Archives Div. of the PAC in their own permanently assigned record group (RG 30, Records of the CNR), many of the maps, photos, posters, etc., are in other media divisions: the Natl. Map Collection, Picture Div., and the Natl. Photography Collection. The CN collection currently occupies more than 1 3/4 kilometres of shelving, ranking it as one of the largest and most prestigious collections of historically significant corporate records in Canada. It dates from the inception of the Champlain & St. Lawrence RR in 1836. Of special interest are the particularly fine collections of documents for the Grand Trunk Rwy. dating from 1846, the Intercolonial Rwy. dating from 1868, the Canadian Northern rail companies of the early 20th C, and the CN presidential papers of D.B. Hanna (1918-22), Sir Henry W. Thornton (1922-32), S.J. Hungerford (1936-41), R.C. Vaughan (1941-50), and Donald Gordon (1950-66). Info.: Public Archives of Canada, 395 Wellington St., Ottawa K1A 0N3, Canada.

New guides to manuscripts and photos have been prepared by the DeGolyer Library, including indexes to the **Baldwin Locomotive Works drawings**. Info.: Dawn Letson, DeGolyer Library, POB 396, Dallas TX 75275 (214-692-2661).

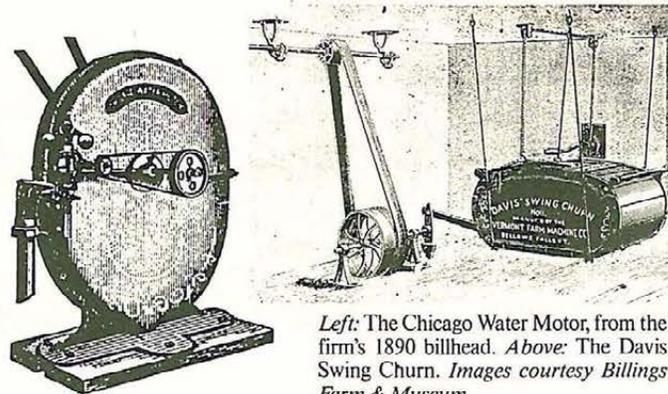
The St. Louis Mercantile Library announces that it is completing the cataloging and arrangement of the book collection, papers, and photographs of **John W. Barriger III** (1899-1976), who was president of the Monon, the P&LE, the Katy, and the Boston & Maine [*SIAN* Fall/Winter 84:15]. Reportedly one of the world's largest private collections on transportation it comprises about 10,000 vols., 400 lin. ft. of papers, and some 40,000 photos. A finding aid will be published as funding permits, although work on a computerized database for the photos is in process, with a published listing possible in 1988. Meanwhile, the database is fully searchable for those components of the collections already completed. Info.: SLML, 510 Locust, box 633, St. Louis MO 63188 (314-621-0670).

Lexington Qlty.

LOEWY COLLECTION AT LC. The Library of Congress, Wash., DC., has received a collection of some 600 drawings, designs, letters, photographs, and other materials from the archives of industrial designer Raymond Loewy, who was responsible for the GG-1 locomotive, the Greyhound Scenicruiser bus, and the Studebaker Avanti automobile, among others. The material was purchased at the auction of the Loewy archives in France following his death in 1986. The collection has numerous automobile designs and photos, some annotated (including the 1934 Hupmobile, which he designed).

FRITZ COLLECTION IN EASTON. A collection of documents, photos, artifacts, and books relating to the careers of noted Pa. ironmasters John, George, and William Fritz, and to the companies they helped to create, has been given to the Canal Museum, Easton, Pa. John Fritz was a mechanical genius whose improvements to the three-high rail mill advanced the development of U.S. RRs during the 1850s and '60s. He also played a key role in the introduction of the Bessemer process of steel production to America and, through his development of heavy forging machinery, aided the development of the first U.S. steel warships. George Fritz assisted his brother in the creation of the mill and also was important in the early steel industry. William Fritz was active in the development of the iron industry in the South. Included in the collection are materials on the history of both the Cambria Iron and Bethlehem Iron [steel] companies, and letters from Asa Packer, Robert H. Sayre, and Abram S. Hewitt. The papers complement the museum's previously acquired Sayre and Bethlehem Steel collections.

The Fritz materials are used in the exhibit "**John Fritz**," Feb.-April, at the museum. Accompanying the exhibit is a 40-page illus. catalog. Info.: Lance Metz [SIA], Canal Museum, P.O. Box 877, Easton PA 18044-0877.



Left: The Chicago Water Motor, from the firm's 1890 billhead. Above: The Davis Swing Churn. Images courtesy Billings Farm & Museum.

CHICAGO WATER MOTOR SEARCH. The Billings Farm & Museum, Woodstock, Vt., wants to locate a Chicago Water Motor, either to buy or to borrow as a prototype for reproduction. The motor is needed to complete an operating exhibit of an 1890 creamery. In 1890, George Aitken of Woodstock, Vt., purchased a No. 11 motor for \$59.50 to power his 55-gal. Davis Swing Churn. Upon receipt, the motor was installed in the new creamery located in the large cellar of the newly built farm manager's house.

By opening a Jenkins valve on 1 1/4-in. galvanized pipe, water was allowed to flow into the motor's turbine. The horsepower was determined by the size of the internal jet and the water pressure, believed to be 40 to 60 psi. This motor is estimated to have developed 1 1/2 to 2 hp. Using a belt-and-shaft system, a crank moved the Davis churn at the suggested rate of 34 strokes per minute.

In its literature, the Chicago company noted that "No. 11 and 12 are suitable for all heavy work, such as large meat choppers, printing offices with four to six presses, large coffee mills. . .," and could be fitted with governors.

After installing in its print shop what may have been the first water motor in town, the local paper declared in Dec. 1887 that "*The Standard* is this week, for the first time, printed by water power, the water being supplied by the Woodstock Aqueduct Company and our machine, the Chicago Motor."

If you have information about the survival and location of a Chicago Water Motor, contact Bob Benz, Curator, Billings Farm & Museum, POB 489, Woodstock, VT 05091 (802-457-2355).

DINER ENGINEERING PLANS, photographs, and related historical materials are needed for a one-hr. TV documentary on the roadside diner. The producer/director is Colin Strayer, who also produced *Red Rocket*, a documentary on the history of Toronto's PCCs and a 1987 Academy Award finalist, and *PCCs of North America*. His current project is a history of the diner, in which he plans to go beyond the currently popular architectural treatment and deal, in part, with industrial aspects of diner design, construction, and development. Contact Strayer, Northland Pictures, POB 142, Adelaide St. Stn., Toronto, Ont. M5C 2J1, Canada.

WANTED: HOME OR HOPE FOR 1917 FLOATING STEAM CRANE, built by Bucyrus Erie and owned and operated in the Boston area since the late 1940s by the McKie Co, Rockland, Mass. McKie is faced with scrapping, funding restoration, or selling the crane. They have used it for bridge and waterfront construction and ship lightering. Previously, the Army Corps of Engineers used it as a drag-line dredge. The crane is operated by a main engine, which powers the hoist and topping-lift winches, a swing engine, and a small secondary hoisting engine (originally used for shifting coal to the bunkers). A horizontal oil-fired boiler was installed in the 1950s; there is no condenser. Frictions on the winches are steam actuated. There are two deck engines, each running a two-drum winch. Barge length is 120 ft.; width, 60 ft.; boom length, 100 ft.; capacity, 65 short tons, with 80-ft. radius. The barge hull is riveted steel construction; the house is wood, mounted on a steel base. The crane can be inspected in Boston. Info.: Richard W. or Hugh Farrell, McKie Co., 954 Hingham St., Rockland MA 02370 (617-871-1700).

NOTES & QUERIES

PATTERNS & MOLDS AVAILABLE for individual purchase or take the entire lot of 2,000 items originally belonging to Lorain Steel Co. (sold in 1920s to Natl. Tube, then to U.S. Steel, and now USX). They range from hand size to 8-ft.-diam. gears and 24-ft.-long cylinders, and include gear housings, engine housings, and other steel products. Made of mahogany and other woods, they are brightly colored and decorative. Write: Patterns, Roman A. Wlaszyn, 2332 E. 31st St., Lorain, OH 44055 (msg. 216-277-1077).



JOB OPENING: PROGRAM ADMINISTRATOR—HISTORICAL COLLECTION FOR TVA. Position will involve research in the public history of the Tenn. Valley Authority, leading to the development and curation of the TVA's recently established Historical Collection (artifacts & documents). The first priority will be an inventory of all existing equipment relating to the TVA's history, along with some oral history. Conservation, research, and exhibit preparation will follow. Should have MA in museum studies or related fields, with at least three years of professional museum experience. Background in industrial history, technology, and material culture strongly desired. \$28-30,000. Send resume, request for detailed job description, and request for application to TVA, Cultural Resources Program, Norris TN 37828.

ESSEX INSTITUTE RR EXHIBIT. To commemorate the 150th anniversary of the opening of the Eastern RR, the Essex Institute in Salem, Mass., is mounting an exhibition, "All Aboard! The Railroad in New England," which explores the impact of RRs on the region. It draws on an extensive collection of artifacts and documentary material in the museum collection. Included is a section of rail originally laid in 1835 for the Boston & Lowell. There is a 1908 wood model of a N.Y., New Haven & Hartford passenger locomotive, and a model of Salem's stone depot, which was designed by Gridley Bryant in 1847 and demolished in 1954. The exhibit opens June 3 and runs through Nov. 6, Mon.-Sat. 9-5 & Sun. 1-5. Info.: Robert K. Weis [SIA], Curator of Exhibitions, Essex Inst., 132 Essex St., Salem MA 01970 (617-744-3390).

A CANAL MUSEUM EXHIBIT on the anthracite coal-mining industry of Pa.'s Panther Valley, entitled "A Continuing Legacy," opens Mar. 26 at the Canal Museum in Easton, Pa., and runs through July. It focuses on the effects of the mining operations of the Lehigh Coal & Navigation Co. on the development of the communities of Summit Hill, Lansford, Coaldale, and Tamaqua. Highlight of the exhibit will be a working scale-model of a coal mine, built in the 1930s for fairs and expositions by the LC&N. This large, animated cross-section illustrates the shafts, tunnels, elevators, railcars, and other structures of a typical contemporary mine operation. Free public lectures on related topics will be at 8:00 p.m. on Mar. 31, April 28, and May 26. The museum is open M-Sat. 10 a.m. to 4 p.m., and Sun. 1-5 p.m. Info.: Canal Museum, Hugh Moore Park, 200 S. Delaware Dr., Easton PA 18044-0877 (215-250-6700).

EXHIBIT AWARDS ANNOUNCED. The first annual Dibner Award for Excellence in Museum Exhibits, sponsored by the Society for the History of Technology, went to the Nat. Museum of American History, Smithsonian Institution, for the exhibit "Engines of Change." Honorable Mentions went to "Made in Maine," a new permanent exhibit at the Maine State Museum, and "Streamlining America" at the Henry Ford Museum. The honors were announced in Oct. Nominations for 1988 should be sent to Bernard Finn, NMAH Rm. 5025, Smithsonian, Wash. DC 20560. Deadline is July 1.

IEEE PRIZE. Nominations are being accepted for the Inst. of Electrical & Electronics Engineers Life Members' Prize in Electrical History. A certificate and \$500 are awarded annually to the best paper in electrical history published in the previous year. Any historical paper in a learned journal or magazine is eligible if it deals with the art or engineering aspects of electrotechnology and its practitioners. Electrotechnology encompasses power, electronics, telecommunications, and computer science. The cash prize will be shared among joint authors. Anyone, including authors, may nominate papers. Administered by the IEEE and the Society for the History of Technology, the prize was established by the IEEE's History Committee and is supported by the IEEE Life Member Fund. Submit three copies of papers published in 1987 by May 15, 1988, to James Brittain, IEEE Prize, School of Social Sciences, Ga. Inst. of Tech., Atlanta GA 30332.

PHENOMENAL BRIDGE CALENDAR. Sure, you've seen dozens of special 1988 calendars by now, but nothing like the ASCE/HAER calendar featuring a full-color, 9 x 13-in. photo of a historic U.S. bridge for each month, plus a cover—all from the HAER Collection. Included are N. Platte River bowstring, Wyoming (1875); an unusual view of the Golden Gate (1937); Tunkhannock Viaduct (1915); Riverside Ave. Whipple-Murphy RR truss, Greenwich, Conn. (1871); Bridgeport Covered Brg., Calif. (1862); Smithfield St. lenticular truss, Pittsburgh (1883, 89); Mid-Hudson suspension, Poughkeepsie (1930); Gervais St. concrete arch, S.C. (1928); Wire Brg., New Portland, Me. (c1866); Ft. Keogh, Mont. Pennsylvania trusses (1902); Geo. Wash. suspension brg., N.Y.-N.J. (1931); Big Black River RR concrete-arch, Miss. (1917); Brooklyn Brg. (1883).

The knock-out photography is by Jet Lowe and Jack E. Boucher [both SIA]. It is published by the American Society of Civil Engineers' Committee on the History & Heritage of American Civil Engineering (chaired by Neal FitzSimons [SIA]), and the Historic American Engineering Record. Herbert R. Hands produced the calendar, with assistance from Robert M. Vogel and William Lebovich [all SIA]. Info.: ASCE, 345 East 47th St., NY NY 10017-2398 (212-705-7496).

CALLS FOR PAPERS. A wide range of proposals are sought for the **9th Annual Lowell Conf. on Industrial History**, scheduled for Fall 1988 (date to be announced) at the Tsongas Industrial History Center. The conf. is co-sponsored by Lowell Nat. Historical Park, Lowell Historic Preservation Commn., Univ. of Lowell, and the Museum of American Textile History. Under a theme of "People at Work," papers might address such matters as changing work processes, people's changing perceptions of their work, social relations impacted by work, work environments (factories, farms, offices, etc.), relationships of gender and ethnicity to work, labor organization, and the impact of technology on work. Papers may concern American, European, or non-Western history, and may address contemporary public-policy issues. The conf. is especially interested in combining the latest scholarly work with a discussion of education programs and programs designed to serve public audiences.

Proposals may be submitted for individual papers or for full sessions (preferred), which should include no more than five presentations. All should include a vita for each participant, a one-to-two page synopsis of each presentation, and a description of the session itself (if applicable). Accepted proposals will be published in the annual conf. proceedings.

The Lowell Conf. can provide limited assistance to cover travel and lodging for some individuals without institutional affiliations or whose institutions cannot fund travel costs. Applications should accompany proposals and include cost estimates.

The deadline is Mar. 31. Submit to Edward Jay Pershey [SIA], Tsongas Industrial History Center, Boott Mill #8, Foot of John St., Lowell MA 01852 (617-459-2237).

The program committee for the **10th Annual North American Labor History Conf.** solicits paper proposals for sessions on American, Canadian and European labor history. In addition to papers, suggestions are needed for sessions, special events, and special speakers. The conf. is sponsored by the Dept. of History and Walter P. Reuther Library, Wayne State Univ. Proposal deadline is June 1, 1988. Info.: Christopher H. Johnson, Dept. of Hist., WSU, Detroit MI 48202 (313-577-2525).



SOCIETY FOR INDUSTRIAL ARCHEOLOGY NEWSLETTER

PUBLICATIONS OF INTEREST

A SUPPLEMENT TO VOL. 16 NO. 4

1987

Compiled by Robert M. Vogel & Helena E. Wright,
National Museum of American History

GENERAL SUBJECTS

- Andrew Carnegie, *THE AUTOBIOGRAPHY OF ANDREW CARNEGIE*. Northeastern U. Pr. (Boston), 1986. 375 pp., bibl. \$30/10.95. Originally publ. 1920. Forward by Cecilia Tichi. Poor bobbin boy to multi-millionaire; it still makes the blood to tingle.
- Jane Colihan, *LANDSCAPES OF POWER*. In *American Heritage*, Nov. 1987, pp. 86-90. Review of "Industrial Landscapes and Photographs" by Charles Sheeler, done in the 1930s and '40s. On exhibit at the Whitney Museum, NYC and the Dallas Museum of Art.
- Neil Cossons (SIA), *THE BP BOOK OF INDUSTRIAL ARCHAEOLOGY*. David & Charles (N. Pomfret, VT), 1987. 384 pp., illus. Ca. \$30. Now the standard book on the subject in GB, a necessity for the tourist as well as the student. Second edition of the 1975 work, with much common text but much additional matter and many additional photos. The principal additions are chapters on the changing approaches to the field and the often unbalanced results of field work and preservation, determined largely by aesthetics and appeal to the investigators. Thus; lots of RR and canal preservation and study; little of lead-chamber sulphuric-acid plants.
- Richard Dennis, *ENGLISH INDUSTRIAL CITIES OF THE 19TH CENTURY: A SOCIAL GEOGRAPHY*. Cambridge U. Pr. (32 E. 57th St., NY, NY 10022), 1984. 368 pp. Who lived where and why, in cities of Lancashire, Yorkshire, the West Midlands and South Wales. Lots of data including maps and tables showing nativity, income, occupation, education, and age in relation to housing, public transportation, and geographic and social mobility.
- John Greenwood, *THE INDUSTRIAL ARCHAEOLOGY & INDUSTRIAL HISTORY OF THE ENGLISH MIDLANDS: A BIBLIOGRAPHY*. The author (2 Partridge Piece, Cranfield, Bedfordshire, MK 43 0BP, UK), 1987. 410 pp. £ 17.50 Ppd (UK). Covers Cheshire, Derbyshire, Hereford and Worcester, Leicestershire, Lincolnshire (incl. S. Humberside), Northamptonshire, Nottinghamshire, Shropshire, Staffordshire, Warwickshire, and W. Midlands. All major industries incl. agriculture; subject, personal-name, and author indexes. Comprehensive and useful.
- HABS/HAER PUBLICATIONS LIST. (Historic American Buildings Survey/Historic American Engineering Record, National Park Service [429], Dept. of Interior, Box 37127, Washington, DC 20013-7127). July 1987, 17 pp. Annotated listing of all HABS/HAER stock available AND unavailable (out-of-print), with prices, ordering addresses; arranged by state. Best single reference for HAER inventories and surveys, 1969-87. Gratis.
- LES INVENTAIRES DU PATRIMOINE INDUSTRIEL/INDUSTRIAL HERITAGE INVENTORIES. Ministry of Culture (Inventaire general, Hotel de Vigny, 10, rue du Parc Royal, F-75003 PARIS), 1987. 213 pp. illus. Fr 160. Proceedings of a conference on inventory aims and methods with

participants from Europe and N. America. Matthew Roth and Patrick Malone (both represented SIA) represented the USA. The publication is essentially bilingual, with summaries in English or French for articles in the other. Well-illustrated with examples of inventory forms for various industrial structure types, as well as photos of the sites.

LANDESDENKMALTAC BADEN-WÜRTTEMBERG in *Denkmalpflege in Baden-Württemberg*, vol. 16, No. 1, 1987. 64 pp., illus. In German. Discusses problems with conservation of industrial architecture and urban archeological sites, including potter's workshop, aqueduct, Stuttgart rwy. station, and silverware factory. Available from Nachrichtenblatt des Landesdenkmalamtes Baden-Württemberg, Mörikestrasse 12, D-7000 Stuttgart 1, W. Germany.

Peter Oleson, *BRONZE AGE, GREEK, AND ROMAN TECHNOLOGY: A SELECT ANNOTATED BIBLIOGRAPHY*. Garland Publ. (NY), 1987. 536 pp. (!), \$71. Another of Garland's superb bibliographies (Robert P. Multhauf & Ellen Wells, genl. eds.). Over 2,000 entries arranged by topic and period; each section preceded by an introduction; author index.

PRESERVING AMERICA'S PAST. National Geographic Society, (1-800-368-2728). 1983. 200pp.\$9.50. Rev.; *American History Illustrated*, Dec. 1987, p. 6. The preservation of "Pastimes, Buildings, Ships, Crafts, Locomotives and Other Tangible and Intangible Relics of America's Heritage."

PROCEEDINGS OF THE SYMPOSIUM ON OHIO VALLEY URBAN AND HISTORIC ARCHAEOLOGY--VOL IV-1986. (Avail.: Philip J. DiBlasi, ARCHAEOLOGY, U. of Louisville, Louisville, KY 40292.) 198 pp., 20 articles. \$14.00. Five sections; No. IV on IA: Survey and Analysis of Pre-1850 Blast Furnace Sites in W. Pa.; Central Ky. Gunpowder Factories; A Survey of Historic Industrial Sites in W. Ind.; Muskingham Bluebirds: a Preliminary Checklist of 19th-C. Potteries in M. Co.; A Short Bibliog. of Old World Milling. Flyer avail. with full listing of papers and order forms.

A RECORD IN DETAIL: THE ARCHITECTURAL PHOTOGRAPHS OF JACK E. BOUCHER. (SIA). With an introduction by Wm. Pierson. U. Missouri Pr. (200 Lewis Hall, Columbia, MO 65211), 1988. 120 pp., 74 b/w illus. \$34.95. (Out in April.) A selection of the celebrated Boucher's masterworks, he who has been the HABS/HAER star photographer for a quarter century. Personal reminiscences of his experiences, travels, techniques, and the structures photographed; Pierson's introduction covering the technical problems of architectural photography.

Norman Smith (ed), *HISTORY OF TECHNOLOGY*, 11th ANNUAL VOL., 1986. Mansell Publ., Ltd. (London & NY), 1987. 253 pp. £ 33. The usual gathering of (7) very-high-quality papers: Warren-truss bridge design (pt.1); Continuous braking on ry. cars; the development of the steel freight car; the rotary airplane engine; the

transfer of German aero technology to Japan in WW-II (thank you so much); the use of replicas to examine the early history of the lathe slide rest; and the history of the Thames Embankment project.

Andre Thepot (ed.), L'INGENIEUR DANS LA SOCIETE FRANCOISE. (The engineer in French society). Editions Ouvrieres (Paris), 1985. 329 pp. Fr 240. Proceedings of a conference held at Le Creuset in 1981, including reports of discussions considered valuable by the reviewer (*Tech. & Cult.*, Oct. '87). Covers decline of monopolies in education and professional life by the several Ecoles and their grads; also much on 20th-C engineers in their various societal roles and careers. In French.

Geoffrey Thornton, INDUSTRIAL ARCHAEOLOGY IN NEW ZEALAND. In *Industrial Archaeology Rev.* X:1, Autumn 1987, pp. 23-40. From the first real settlements in the 1840s there has been a modest but interesting industrial base, of which a good bit survives: lumber and sawing; meat packing; flax milling; coal mining; plus a great deal of public works, utilities, and transportation IA. A good, comprehensive illus. account.

TWENTY YEARS OF THE NATIONAL HISTORIC PRESERVATION ACT. Advisory Council on Historic Preservation (Washington, DC 20004), 1986. 128 pp., illus. A report to the President and the Congress of the U.S. A useful description of the Council and its many valued functions in the overall preservation process, much of which is industrial/engineering.

Helen D. Vollmar and Joseph E. Vollmar, Jr., CAVES, TUNNELS, AND OTHER HOLES...UNDER ST. LOUIS. In *Gateway Heritage*, Fall 1987, pp. 1-7. Caves and tunnels under St. Louis served a variety of industrial purposes, including refrigerated storage for 19th-C breweries.

Bernard Weisberger, THE FORGOTTEN FOUR-HUNDRED: CHICAGO'S FIRST MILLIONAIRES. In *American Heritage*, Nov. 1987, pp. 34-44. The history of Chicago's industrialists from the Civil War to World War I.

TRANSPORT

James T. Angus, A RESPECTABLE DITCH: A HISTORY OF THE TRENT-SEVERN WATERWAY, 1833-1920. McGill-Queen's U. Pr. (avail. [Canada] U. Toronto Pr., 5201 Dufferin St., Downsview, Ont. M3H 5T8/[US] UTP, 340 Nagel Dr., Cheektowaga, NY 14225), 1988. 460 pp., \$37.50. A long-abandoned, politically embroiled project that never saw real commercial traffic but which lives on as a vital water link for pleasure boating.

Peter Baida, MY VANDERBILT MOVIE. In *American Heritage*, Nov. 1987, pp. 20-21. Cornelius Vanderbilt's revolutionary steamship voyage up the San Juan River in Nicaragua, shortening travel time between the Atlantic and Pacific coasts.

Jean Enger, ORSAY: THE METAMORPHOSIS OF A MONUMENT, FROM PARIS TERMINUS TO NATIONAL MUSEUM. (Tr. by Charlotte Ellis.) *Electa Moniteur* (Paris), 1987. 207 pp., illus. History of the site, its use as a RR station, the debate on its use following its closure, the decision to convert it to an art gallery, the competition for the conversion design, and the construction and occupancy. A masterpiece of adaptive re-use of an industrial structure with remarkable sensitivity to the original flamboyant structure (1900).

FROM THE COLLECTION. In *Canadian Rail*, Nov./Dec. 1987, pp. 201-203. The history of a late 19th-C steam locomotive. After years of serving the coal industry on the Pittsburgh & Lake Erie RR, advancing technology made this engine obsolete. Destined for the scrap heap, the engine was saved by the Canadian Railroad Historic Assn. in 1961.

Rick Harmon, ALICE TOMPKINS FEE: GROWING UP ON THE CASCADE LOCKS "RESERVATION", an Interview. Hugh A. Scott, REMINISCENCE. William F. Willingham, ENGINEERING THE CASCADES CANAL AND LOCKS, 1876-1896.

In *Oregon Historical Quarterly*, Fall 1987. In 1874, preliminary surveys began on the feasibility of blocking the Columbia River, Oregon, at the Cascade Rapids, 45 miles east of Portland. It was decided that a canal and locks were needed to make the river navigable for the transport of grain and people. Willingham deals with the complicated acquisition of the land surrounding the cascades, the construction of the locks and canal, and the development of the Cascade Locks "reservation", a community for canal workers. Fee, the daughter of a canal superintendent, provides insight into the way of life at Cascade Locks in the early 20th C. Scott tells of his experience with the Columbia River, and Cascade Locks as editor of the "Bonneville Dam Chronicle" published in Cascade Locks. An interesting account of the town, its inhabitants and businesses.

Ralph W. Hidy, Muriel E. Hidy, & Roy V. Scott, THE GREAT NORTHERN RAILWAY: A HISTORY. Harvard Business School Pr. (Avail: HBSP, Box 1542, Hagerstown, MD 21741), 1988. 384 pp., period photos, maps, drawings, &c. \$52.70 Ppd. Business, railroad, and regional history; the standard account of one of N. America's premier RRs from its chartering in 1856 to 1970 when it amalgamated with others to become part of the vast Burlington Northern.

Jeff Holt, GRAND TRUNK IN NEW ENGLAND. *Railfare*, 1986. Rev.: *Canadian Rail*, Nov./Dec. 1987, p.210. Said to be the first major work on the first International trunk line in N. America. Details more than 140 years of rail operations between Portland, Maine and Vermont.

Louis K. Lowenstein, PARIS, THE CITY OF THE WORLD'S MOST BEAUTIFUL RAILROAD STATIONS. Railroad Station Historical Soc. (430 Ivy Ave., Crete, NE 68333), 1987. RR Station Monograph No. 14. 21 pp., illus., map. \$6.00 Ppd. The city's 8 major stations: their early history (brief); physical descriptions and present status. Good general guide/survey.

Glenn L. McMullen, MANUSCRIPT SOURCES FOR RAILROAD HISTORY AT CAROL M. NEWMAN LIBRARY, VA. TECH. Univ. Libraries, Virginia Polytechnic Inst. (Blacksburg, VA 24061), 1986. 26 pp. Their Special Collections comprising the archives of the Norfolk & Western pre-1930 and the Southern's predecessors and early subsidiaries, together embracing the records of nearly 300 RRs, 1830s-1930s, heaviest in the late 19th C. Listing by RR name with description of holdings thereunder.

MORRIS CANAL RECORDS ON MICROFILM. The NJ State Archives has filmed the canal's records in limited edn., avail. for use at three repositories: Morris Co. Library, E. Hanover Ave., Whippany; Center for Canal History, 200 S. Delaware Dr., Easton, Pa.; Divn. of Archives & Records Mgmt., 185 W. State St., Trenton, NJ (CN 307). Over 120 reels, incl., apparently, photos.

Daniel Poirier, THE HOCHELAGA GARAGE--IN BRIEF. In *Canadian Rail*, Nov./Dec. 1987, pp. 204-207. The history of the Garage; from its original commission by the Montreal City Passenger Ry. as a stable and car barn in 1861, to its demolition in 1985.

Robert C. Post, AMERICA'S ELECTRIC RAILWAY BEGINNINGS: TROLLERS AND DAFT DUMMIES IN LOS ANGELES. In *Southern California Quart.*, Fall 1987, pp. 203-21, illus. Early history of the electric street car, with special reference to LA, in the year of the centennial of same.

Wanda Pratt, ALL ABOARD FOR NOSTALGIA. In *Canadian Rail*, Nov./Dec. 1987, p. 214. The history of the Oil Springs depot which was built in 1885 to answer the

needs of miners in the area. Originally part of the New York Central, it has now become the focal point of the Lambton County Railroad Museum.

Donald B. Robertson, *ENCYCLOPEDIA OF WESTERN RAILROAD HISTORY: THE DESERT STATES*. (Caldwell, Idaho), 1986. 336 pp. \$34.95. Rev.: *Journal of the Southwest*, Summer 1987. A detailed study of any and all railroads that owned or operated ten miles or more of track in Arizona, Nevada, New Mexico, or Utah.

Michael Skalley, *FOSS: 90 YEARS OF TOWBOATING*. Superior Publ. Co. (850 N. Hollywood Way, Burbank, CA 91505), 1986. Approx. 330 pp., illus, 2nd edn., enlarged. History of the Foss Co., Puget Sound, with emphasis on their many tugs, 1910-1985.

David Weitzman (SIA), *SUPERPOWER: THE MAKING OF A STEAM LOCOMOTIVE*. David R. Godine (Boston), 1987. 108 pp., illus. with drawings by author. \$20. Full description of this remarkable work in *SIAN* 16-3:10, q.v.

MISC. INDUSTRIES

J.A. Antrell, *JAMES NASMYTH & THE BRIDGEWATER FOUNDRY: A STUDY OF ENTREPRENEURSHIP IN THE EARLY ENGINEERING INDUSTRY*. Manchester U. Pr. (Dover, NH), 1985. 279 pp. \$33. The rapid rise of his foundry--actually machine works--near Manchester starting in 1835, emphasizing that much of his success came from the notions of others, including his most famous invention: the steam hammer. A good, solid account. Rev.: *Bus. History Rev.*, Winter 1986.

Karl J.R. Arndt, *BRECHLOCH, OR RAPP'S HARMONY SOCIETY AND THE PRODUCTION OF FLAX, HEMP, AND LINEN IN PENNSYLVANIA AND INDIANA*. In *Pennsylvania Folklife*, Winter 1987-1988, pp. 64-74. A detailed history of George Rapp's colonies.

David L. Carlton, *THE PIEDMONT AND WACCAMAW REGIONS: AN ECONOMIC COMPILATION*. In *South Carolina Historical Magazine*, April, 1987. SC ranked second among states in textile manufacturing by 1907, and other statistics.

Robert F. Dalzell, *ENTERPRISING ELITE: THE BOSTON ASSOCIATES AND THE WORLD THEY MADE*. Harvard U. Pr. (Cambridge, MA 02138), 1987. 298 pp. illus. \$27.50. Argues that this generation of investors who fueled the early textile mills and RRs in New England really represent a precapitalist rather than a capitalist mentality. "Challenges a number of widely held beliefs about entrepreneurial behavior in the early stages of industrialization." Useful appendix identifies investment linkages.

Laurence F. Gross (SIA), *WOOL CARDING: A STUDY OF SKILLS TECHNOLOGY* in *Technology & Culture* vol. 28, no. 4 (Oct. 1987), pp. 804-827. First-rate history of the carding process--deemed most critical to successful wool manufacture--with emphasis on the skills of the boss carder and progressive de-skilling of card-room help due to technical advances in feed and doffing mechanisms between 1825 and 1880.

Jacquelin Dowd Hall et al, *LIKE A FAMILY: THE MAKING OF A SOUTHERN COTTON MILL WORLD*. U. North Carolina Pr. (Box 2288, Chapel Hill 27515), 1987. 502 pp., 4 maps, 46 photos. \$34.95/12.95. Family, work, and community life in the early mills, and the technological and cultural changes that transformed the industry after WWI. Based on extensive oral history interviews, previously unexamined letters by workers to FDR during the Depression, and the trade press.

Heinrich Herzberg & Hans Joachim Riesberg, *MÜHLEN & MÜLLER IN BERLIN: EIN BEITRAG ZUR GESCHICHTE DER PRODUKTIVKRÄFTE*. VEB Verlag für Bauwesen (Französische Str. 13/14, Berlin, E. Germany 1086), 1986. 308 pp.; 20 dwgs.; 175 photos. DM 52. (Mills & Millers in Berlin a Contribution to the History of a Productive Force.) A great variety of mills and mill types up to the end of the 19th C: water, wind, and steam.

John S. Lyons, *POWERLOOM PROFITABILITY AND STEAM POWER COSTS: BRITAIN IN THE 1830'S*. In *Explorations in Economic History*, Oct. 1987, pp. 392-408. A study of the powerloom and its slow acceptance.

Michael McQuillen, *THE BEST KNOWN NAME IN PAPER: HAMMERMILL, A HISTORY OF THE COMPANY*. Hammermill Paper Co. (Erie, PA 16533), 1985. 206 pp. illus. Free to institutions. One of the better examples of the type, but still uncritical narrative account with emphasis on personalities and profits. Good pix of plant at various stages.

Joseph Wickham Roe, *ENGLISH & AMERICAN TOOL BUILDERS: THE MEN WHO CREATED MACHINE TOOLS*. (Orig. publ.: Yale U. Pr., 1916). Reprinted: Lindsay Publs. (Box 12, Bradley, IL. 60915-0012), 1987. 315 pp., illus. \$24.95/16.95. Facsimile reprint of the great classic; the first serious account of the history and development of machine tools and still unparalleled despite a certain amount of new-history. (Incidentally, recall that Lindsay (SIA) has reprinted a great number of other classics and obscure but interesting works in both hard technology and its history, mainly in power, production engineering, manufacturing, and applied physics. Don't fail to order his Astounding! catalog. You'll be glad you did and might consider maiming yourself if you don't!)

Clare M. Sheridan (ed.), *TEXTILE MANUFACTURING IN AMERICAN HISTORY: A BIBLIOGRAPHY*. In *Textile History*, vol. 18, no. 1 (1987), pp. 59-86. A good list of basic sources recommended by the staff of the Museum of Am. Textile History. Includes books, periodicals, and a stellar resource list of other institutions holding collections of books, mss. and artifacts related to the textile industry.

Donald R. Stabile, *THE DU PONT EXPERIMENTS IN SCIENTIFIC MANAGEMENT: EFFICIENCY & SAFETY*. In *Business Hist. Rev.*, Autumn, 1987, pp. 365-86. Discovery that emphasis on Taylor-type efficiency (ca. 1913) was inversely proportional to safety in operations, leading to...*explosions!*, leading to re-emphasis on safety and a more controlled approach to efficiency.

STRUCTURE

G.M. Binnie, *MASONRY & CONCRETE DAMS 1880-1941*. In *Industrial Archaeology Review*, X:1, Autumn, 1987, pp. 41-58. Constructing principles and design evolution of dams in GB for water supply and hydroelectric power; also three major failures that led to safety legislation in 1930.

William P. Chamberlain (SIA) & Steven Engelhart, *THE HISTORIC BRIDGES OF KEESVILLE*. Friends of Keeseville (Civic Center, Keeseville, NY 12944), 1987. 18pp., illus. \$2.50. Published on the occasion of the designation of the town's three distinguished spans as a (collective) National Historic Civil Engineering Landmark by the ASCE: a stone arch of 1843; a wrought-iron Pratt truss of 1878; and a rare Berlin Iron Bridge Co. suspension bridge of 1888.

James I. Cooper (SIA), *IRON MONUMENTS TO DISTANT POSTERITY: INDIANA'S METAL BRIDGES, 1870-1930*. Indiana Dept. of Natural Resources et al (avail.: Historic Bridge Books, Asbury Hall, DePauw Univ., Greencastle, IN 46135), 1987. 220 pp., illus. \$8.75 + \$.50 for each addl. copy in US. Superb review of all metal types: trusses, arches, cantilevers, suspension, viaducts: their structural rationale, the firms that built them, and an inventory of the most important surviving examples. Also a brief discussion of the state's bridge-preservation plan.

Domenica Fontana (Dietrich Conrad, ed.), *DIE ART, WIE DER VATIKANISCHE OBELISK TRANSPORTIERT WURDE ROMA 1590*. (The method by which the Vatican Obelisk will be transported, Rome, 1590) VEB Verlag für Bauwesen (Französische Str. 13/14, 1086 Berlin, E. Germany), 1987. 176 pp. 72 pp. facimile of original Italian; 104 pp. of translation (to German) + commentary; 32 engraved illus. In 2 vols. in slipcase. DM 120. The classical account of F's remarkable feat of moving the V.O. nearly 1000 ft. to a new location,

involving 900 men and 75 horses. The monolith weighs 350 tons! Erstaunlich!

Brown Jones, *THE TUNNEL--THE CHANNEL & BEYOND*. Wiley (One Wiley Dr., Somerset, NJ 08873), 1987. 334 pp. \$39.95. Eight authors on all aspects of the long-lived Channel Tunnel project; the many prior attempts, the international politics, the finances and economics--all leading up to the present undertaking that it appears finally will go; is in hand, in fact.

James Paffett, *SHIPS' HULLS SINCE CHEOPS: AN ENGINEER'S VIEW*. In *Industrial Archaeology Review*, X:1, Autumn 1987, pp. 84-99. Fascinating examination of the structural mechanics of ships' hulls; the stresses to which they're subject and the means that have been used to resist them.

Peter Palmquist (ed.), *ONCE UPON A DAM SITE: HOWARD COLBY'S SHASTA DAM PHOTOGRAPHS, 1938-1950*. Redding Museum & Art Center (Box 427, Redding, CA 96099), 1987. 72 pp., illus. \$14.00 Ppd. A stunning series of construction-progress photos of one of the greatest of the great Western hydroelectric dams, of mass concrete, built 1939-1944. Colby covered the work from start to finish and afterwards, as the contractor's official photographer, working solely with a massive 8 x 10 view camera. Basic information on the dam; a brief blog. of C., and 50 wonderful photos.

Stephen Rae, Joseph E. King, & Donald R. Abbe., *NEW MEXICO HISTORIC BRIDGE SURVEY*. N.M. State Highway & Transp. Dept. (Box 1149, Santa Fe 87504-1149), 1987. 92 pp., illus. This is at least the 7th of these now (Penna., Ore., Mont., Colo., Ind., & Ohio), and as with the others is a solid attempt to identify and recommend for preservation the state's more important historic spans. N.M. may not be the richest in these, but there are interesting examples of suspension, timber and steel truss, and concrete bridges.

Alan Viewig (SIA), *VIEWIG'S LIST OF OREGON'S COVERED BRIDGES*, 1987. Author (812 SW Washington, No. 910, Portland, OR 97205), 1987. 16 pp., \$2.00 Ppd. Lists all 50 surviving, by county, with date, type, location, and misc. data.

Rosmarie Wagner & Ralph Egermann, *DIE ERSTEN DRAHTKABELBRÜCKEN: BEISPIELE KONSTRUKTIVER INGENIEURTÄTIGKEIT IN DER ENTWICKLUNG DES BAUINGENIEURS ZUM EIGENSTÄNDIGEN BERUFSSTAND. (THE FIRST WIRE-CABLE BRIDGES.)* Werner Verlag (Düsseldorf), 1987. 251 pp., bibl. Excellent account of the increasingly professional design of wire suspension bridges during the first half of the 19th C. as mathematical analysis was applied to the task, based on several European examples by Navier, Dufour, et al. Most important is a thorough explanation of the development of the analytical methods.

MATERIALS

Richard Sanders Allen (SIA), *LOST IN THE FOREST OF DEAN: THE FOREST OF DEAN/ORANGE/QUEENSBORO IRON FURNACES RE-EXAMINED*. In *OCHS Journal*, Vol. 16 (Nov. 1, 1987), pp. 37-45. (Orange County Hist. Soc., Clove Furnace Historic Site, Arden, NY 10910.) Interesting account of the third largest blast furnace in NY (1856) and its contemporaries.

Ethel Armes, *THE STORY OF COAL & IRON IN ALABAMA*. Sloss Furnace Assn. (Box 11781, Birmingham, AL 35202), 1987. 591 pp., 92 photos. \$29.95. Facsimile of 1910 edn. A broad history of the state with a complete record of coal and iron-ore mining, furnace construction, iron and steel making, and RR development, with interesting interviews with a number of the then-still-living pioneers.

James R. Bennett (SIA), *OLD TANNEHILL: A HISTORY OF THE PIONEER IRONWORKS IN ROUPES VALLEY, 1829-1865*. Jefferson County Historical Comm., 1986. (Avail.: Tannehill Historical State Park, Rt. 1 Box 124, McCalla, AL 35111.) 167 pp., illus. \$15.50/7.95 + \$2. post. Tannehill was a vital Civil-War period Southern ironworks and the progenitor of the Birmingham-area industry. No. 1 furnace (1855) has been restored and, you'll recall, was briefly put back into blast in 1976 as a Bicentennial project. Among the best-preserved furnaces in the nation. Good, solid account of its history.

Estelle Cremers, *READING FURNACE, 1736*. Redding Furnace Press (RD 2, Box 385, Elverson, PA 19520), 1986. 194 pp. \$10.95. Account of the furnace (1736-1778) and forge (1780-c1816) in Chester Co., PA. Much on family and local lore, but useful map of 18th-cent. forges & furnaces in the region, and good use of documentary evidence.

Robert H. Gordon (SIA), *SIXTEENTH-CENTURY METAL WORKING TECHNOLOGY USED IN THE MANUFACTURE OF TWO GERMAN ASTRONOMICAL LABES*. In *Annals of Science*, May 1987, pp. 91-84.

Mark London, *MASONRY: HOW TO CARE FOR OLD & HISTORIC BRICK & STONE*. The Preservation Press (1600 H. St. NW, Washington, DC 20006), 1988. 200 pp.; 125 illus. \$15.95 Ppd. The complete primer on the detection, analysis, and cure of the many ills to which historic masonry is heir.

Robert McIntosh, *CANADA'S BOY MINERS*. In *The Beaver*, Vol. 67 No. 6 (Dec. 87/Jan. 88), pp. 34-38, illus. Popular account of the pit boys active in the coalfields of Nova Scotia and British Columbia, 1870s-1920s. Wages, average ages, parents' and mine owners' perspectives reviewed. Vivid photos by an un-named Canadian Lewis Hine.

Dianne Newell (SIA), *THE IMPORTANCE OF INFORMATION & MISINFORMATION IN THE MAKING OF THE KLONDIKE GOLD RUSH*. In *Journal of Canadian Studies* 21, Winter 1986-87.

Johns S. Spratt (ed. by Harwood P. Hinton), *THURBER, TEXAS: THE LIFE AND DEATH OF A COMPANY COAL TOWN* (Austin, TX). U. of Texas Pr., 1986, 138 pp. Noted in *Journal of the West*, Oct. 1987.

John Strohmeyer, *CRISIS IN BETHLEHEM: BIG STEEL'S BATTLE TO SURVIVE*. Adler & Adler (4500 Montgomery Ave., Bethesda, MD 20814), 1986. 242 pp. \$17.95. A plea for capital and labor to stop feuding and save the steel industry, by a Pulitzer-Prize winning journalist who grew up in Bethlehem and lives there still. Rev.: *PA. Mag. of History & Biography*, July 1987.

Richard C. Walbauer, *GRUBSTAKING THE PALOUSE: GOLD MINING IN THE HOODOO MOUNTAINS OF NORTH IDAHO--1860-1950*. Washington State U. Pr., 1986, 75 pp. \$13.95. Rev.: *Oregon Historical Quarterly*, Fall 1987, pp. 316-317. An account of the relationship between the development of a mining district, albeit small, and the support systems that grew up around it. The author sees the Hoodoo district as a microcosm of the larger, more developed mining areas and as a way of understanding them. A chapter on technology and a glossary help the non-miner.

BIBLIOGRAPHIC NOTES

CORRECTIONS: 1.) In P.O.I. No. 2. (One before the last) we noted, under Railroad Transportation, that MALLET'S ON THE MENDOCINO COAST sold for \$82.95. This, the beleaguered publisher has brought to our abashed attention, would have made it the most expensive book they ever had published. The transposition was all ours; it should have read \$28.50. That is, \$28.50. Please so note.

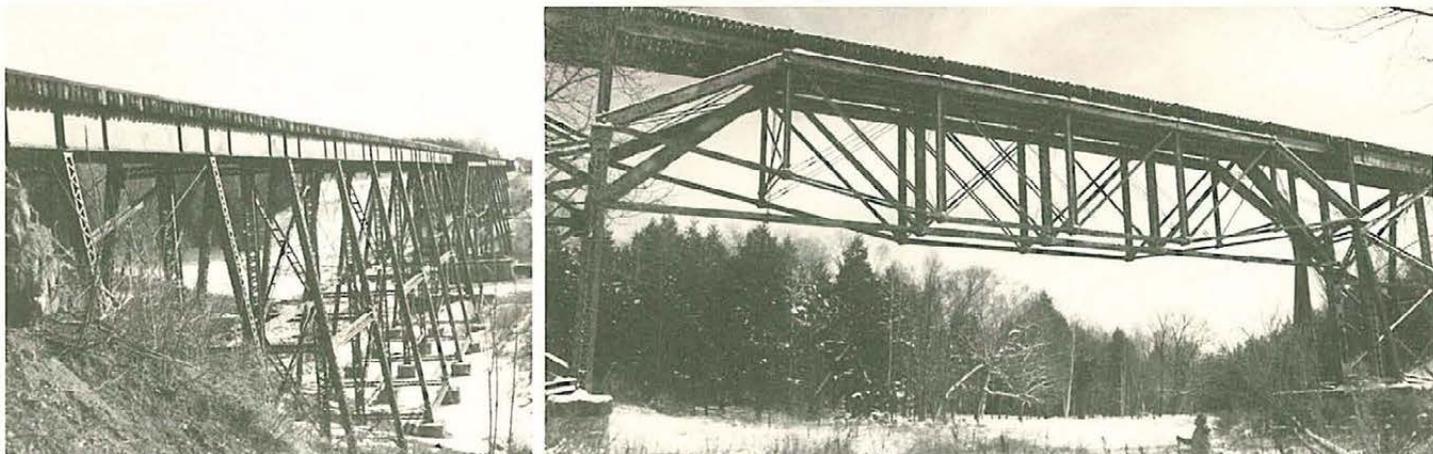
2.) The notice last issue of Kevin Wright's work on the MORRIS CANAL was in error. It has not been published and seems unlikely to be. Sorry.

RR, POSTAL & MISC. HISTORY; IA. Listing of publications. J-B Publishing Co., 430 Ivy Ave., Crete, NE 68333.

THE MISSISSIPPI VALLEY LUMBERMAN, a weekly trade journal from Minneapolis, covered industry news from 1876 through 1973, incl. wonderful articles on new technologies and a vast acreage of vintage machinery ads. Now all on microfilm, avail. from Minnesota Hist. Soc.: Newspaper Micro-filming Project, MHS, 690 Cedar St., St Paul, MN 55101.

F.Y.I. You are holding the last Publications of Interest that will emanate from Washington. Henceforth it will issue--as the Mother Publication itself--from The Cities, under the more-than-able editorship/compilership of John M. Wickre, to whom all notices of pertinent publications should be addressed from this time forward: Minnesota Historical Society, Divn. of Archives & Manuscripts, 1500 Mississippi St., St Paul, MN 55101. (612) 286-6980.

AVOCA TRUSS IS MICHIGAN'S BEST KEPT SECRET



Left: The Chesapeake & Ohio RR bridge (1880, 1889-92) at Avoca, Mich. Right: The modified polygonal-truss main span over Mill Creek. Ralph J. Rasmussen photographs.

Remaining in daily use by Chesapeake & Ohio trains is a unique metal bridge at Avoca, Mich., that is virtually unknown beyond RR fans, workers, and canoeists, thanks to its obscure location out of sight of local roads. It is among the most significant bridges in the state and perhaps the U.S. and deserves serious attention by bridge historians.

In 1880, the Port Huron & Northwestern RR, using local money, laid narrow-gauge rails (third rail added after 1881) from Port Huron to Marlette, Mich., arriving in Dec. 1880 and soon extending on to the Bay City-Saginaw area. The major river crossing was Mill Creek, which flows into the Black River and then to Port Huron and the St. Clair River. Bridge construction began in Sept. 1880 on what was then called the largest bridge in the state.

As described when built, the main span was a 150-ft. metal Howe truss, and the remaining spans were wood trestle-work. The bridge width was 38 ft. at the base, tapering to 13-ft. ties at the deck. There were 350,000 ft. of timber, 92 angle iron blocks (each weighing 350 lbs.), and an immense amount of iron rods. Overall, it was 800 ft. long and 70 ft. high.

It was built by the Smith Bridge Co., Toledo, Oh.

Between 1889 and 1892, the approaches were rebuilt as they remain today, with steel bents topped with steel girders, resting on ashlar masonry abutments and piers similar to the original two piers which supported the river span. Following reconstruction, it was 640 ft. long. Some years later, a pin-connected Pratt centerline truss was added to the main span and a centerline row of columns added under the approaches.

Although the main span was said to be a Howe truss when built, to modern eyes it might be called a deck-over, modified, polygonal Pratt-truss. The verticals are in compression and the diagonals are in tension (some are redundant), and are built of lighter rods with turnbuckles. The lower-chord members are forged eyebars, with pinned ends typical of all the other connections. At the time, only the RR bridge over the St. Joseph River at Niles, Mich., was longer; it had similar eybar members, although it used a more conventional deck-truss. For further info., contact Ralph J. Rasmussen, P.E. [SIA], 3775 Wellman Line Rd., Brown City MI 48416.

NOTES & QUERIES

STEEL & ANTHRACITE FILMS. The Canal Museum in Easton, Pa., has acquired over 30 significant films documenting the history of steel production and coal mining. They were donated by the Bethlehem Steel Corp. and include motion pictures dating from 1938 through the 1970s. Among the most important are "The Making & Shaping of Alloy Steel" (1935) and "Wonders of Anthracite" (1928). Also included are films documenting the erection of the Golden Gate and Chesapeake Bay bridges by Bethlehem. Info.: Lance Metz [SIA], Canal Museum, P.O. Box 877, Easton PA 18044-0877.

RESEARCH QUERIES. Richard O'Connor [SIA] would appreciate correspondence with others having an interest in window-glass workers, their communities, and the industry's restructuring between 1880 and 1940. Researching a dissertation at the Univ. of Pittsburgh, he is assessing the impact of changes in industrial structure (plant size, technology, corporate organization) on the social and political life of window-glass communities during the hand-production era (1880-1905), hand-to-machine transition (1905-27), and machine production (1927-40). Contact O'Connor at 2403 S. Braddock Ave., Pittsburgh PA 15218.

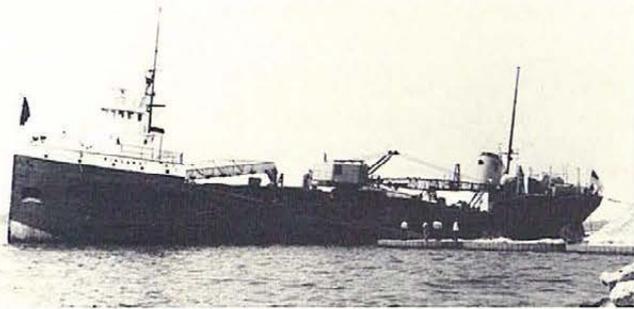
Stanley M. Diefenthal [SIA] is seeking blueprints or similar drawings of horse-drawn carriages, detailed enough to use for construction of new carriages. Are carriage plan-books available? Contact him at POB 26087, 4801 Florida Ave., New Orleans LA 70186.

[Other members with particular research interests to share should send a note to the editor. Ed.]

ABBOTT LOWELL CUMMINGS AWARD. Nominations are sought for this national award in vernacular architecture study. Nominated works may include books, articles, museum exhibits, or films, and should represent original research and fieldwork in any area of American vernacular architecture. Send titles of suggested works to Richard M. Candee [past SIA pres.], Chair, A-L-C Prize Committee, Pres. Studies Prog., Boston Univ., 226 Bay State Rd., Boston MA 02215.

COMPUTERIZE YOUR SLIDES! Friends, are you fed up with digging around in your shoebox of unlabeled slides? Well here's your chance to use your microcomputer to catch up (and stay caught up) with that embarrassing backlog clutter. "SlideScribe" professional labels come on pin-feed, 2 3/4 in. backing, 500/roll. To insure no-nonsense fixing to both cardboard and plastic mounts, the matte-finish, archival-paper labels use pharmaceutical adhesive. They have radius corners to prevent the edges from catching, and come in ten fade-proof colors and two sizes: Standard (1 7/8 x 7/16) and XL (1 7/8 x 1/2). They cost \$7/roll, plus \$2 P&H per order of less than ten. Numerous institutions use the labels, including the Kansas City Art Museum and the Natl. Football League. Also avail. is a labeling software system, and a magnetic-strip system (similar to credit-card strips) that attaches to the slide mount and allows the slide to be "read" by your computer via an encoder/reader that interfaces through a standard RS-232 connector. For further info. & sample strip, contact Elizabeth D. Hedberg, DRT Corp., 690 Mendelssohn Ave., Minneapolis MN 55427 (800-345-4118).

GT. LAKES DREDGE 'NIAGARA' ON REGISTER

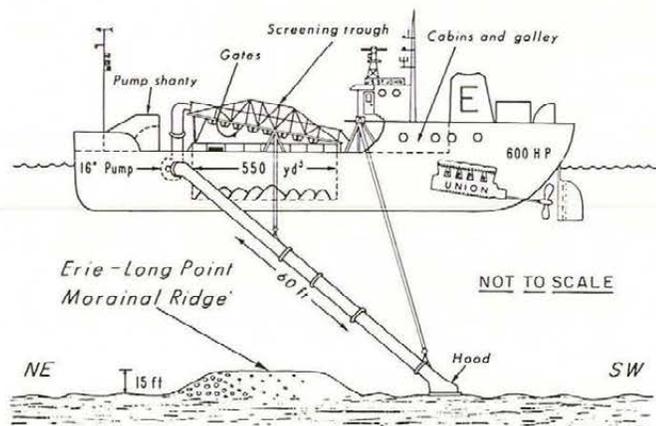


The M.V. *Niagara* in 1986, moored at Erie Sand & Gravel Co. Robert J. MacDonald photograph.

The S.S. *Niagara*, aka M[otor] V[essel] *Niagara*, built in 1897 by F.W. Wheeler & Co., West Bay City, Mich., has been listed on the National Register of Historic Places, according to Brent Glass [SIA], ex. dir. of the Pa. Hist. & Mus. Commn. She is berthed at Erie, Pa., as a museum ship. The *Niagara*, and other larger, converted and original sand suction-dredges, were used to recover glacially derived sand from the open lakes where smaller, coastal dredges might not be able to operate safely and efficiently. Dredged sand is used for concrete, building blocks, and mortar. She is the only known remaining example of the shipbuilding work of Wheeler on the U.S. Register of ships. Before refitting in 1959, she was equipped with two Scotch boilers and an 800-hp. triple-expansion engine, driving a single, three-blade propeller. She was converted to a sand suction-dredge in 1927.

When sold in 1985 to a Canadian shipbreaker, the *Niagara* was the oldest commercial vessel on the U.S. ship register on the Great Lakes. Now, she is one of only two sand suction-dredges converted from Great Lakes freighters afloat. The other, also homeported in Erie, the MV *Lakewood*, is laid up and awaiting disposal. These two vessels, with their sand dredging- and offloading-equipment, are perhaps the last remaining examples of a type and period of American Great Lakes industrial technology.

That the *Niagara* survived as a cost-effective merchant ship and dredge for almost 90 years is unusual in an industry where ships now may last for 20 years or less as economically viable assets. The *Niagara*, of course, spent her entire career in fresh water where steel corrosion is significantly less than in salt water, and like other lake vessels, she normally operated



HOW THE DREDGE WORKS. This sketch of the hydraulic sand-dredge *J.S. St. John*, a converted 1949 U.S. Navy tanker working in Lake Erie, illustrates the simple process. A 16-in.-diam. pump sucks material from the lake bottom through a hood with a 3-in.-max. intake. The pump operator maintains a smooth flow over the screening trough by adjusting the vacuum and hood elevation. Sand passes through the screens and into the hold, regulated by a deckhand adjusting the four gates on each screen. Oversize material is returned to the lake. The captain watches the material size coming out of the gates, and adjusts speed and course for optimum dredging. Off-loading is by crane and clamshell bucket, into graded stockpiles. Courtesy Pa. Topographic & Geologic Survey.

only eight or nine months a year. Because of decreased hull corrosion, the Erie Sand & Gravel Co. determined in 1949 that it was economically feasible to modernize and dieselize her engineering plant when she was 62 years old, with the expectation that her remaining hull life was sufficient to recover the costs.

Presently, she is moored at her old ES&G berth. Wesley C. Herbol, executive director for the Steamship Niagara Museum is planning the restoration of the *Niagara* as a museum ship that will interpret 19th-C ship construction and 20th-C sand-dredging technology. Although visible from the Erie Public Dock, she is not yet open to the public, but may have limited hours in summer 1988 depending on restoration progress. Before travelling to Erie for a visit, SIA members are advised to contact the Steamship Niagara Museum, 17 W. Public Dock, Erie PA 16507 (814-456-8964).
R.H.E.

PATERSON IA ARTIFACTS AVAILABLE. The N.J. Dept. of Trans. (NJDOT) has a large collection of archeological artifacts excavated from the Rogers Locomotive Works and similar sites in Paterson, under the direction of Edward S. Rutsch [SIA]. NJDOT no longer has storage available and will donate the collection to any museum or educational facility providing appropriate storage and public access for research.

Between 1973 and 1975, NJDOT sponsored archeological data-recovery work to mitigate a highway project, which bisected the Great Falls of the Passaic/Society for Establishing Useful Manufactures (SUM) Historic Dist. [See *SIA* Nov. 74:3, May/July 76:2] Excavated along with the Grant Locomotive Co. erecting shop and the Rogers blacksmith and boiler shops (1873), were the backyard deposits of ten houses in the Dublin Historic Dist.

The salvage work produced 10-15 cubic yards of domestic and industrial artifacts, with most from the locomotive works. Included are tools, raw stock, machine parts, and more. The largest item is a portable forge from the Rogers boiler shop. Smaller artifacts are stored in wood or cardboard boxes, while larger items are on shelving, which can be donated with the collection. Iron items are badly oxidized and need stabilization.

Also salvaged during the work were the contents of a drug store. This separate collection of early 20th-C bottles (some with labels and contents), boxes, jars, tins, and advertising material also is available.

If interested, write ASAP to Lauralee Rappleye-Marsett, NJDOT, Bureau of Environmental Analysis, 1035 Parkway Ave., Trenton, NJ 08625. To arrange a visit or review inventories, call Rappleye-Marsett or David Zmoda at 609-530-2984.

STATE BOUGHT DULUTH'S LINE. A battle ensued earlier this year when Minn. DOT officials wanted Duluth to paint traffic lines on their quaint brick streets. The city wanted to use small reflectors instead of having stripes mar the beauty of the expanse of brick. The state insisted, citing federal safety codes, and won the battle. Lines were painted in mid-Oct. Less than a month later, however, the lines started disappearing. It turned out that Duluth had painted lines all right, but used almost no paint. "I don't know if they're playing games with us or not," said the Mn/DOT state-aid engineer.

CONTRIBUTORS TO THIS ISSUE

Robert H. Eaton, Bureau of Historical Museum Services, Harrisburg, Pa.; Betsy Fahlman, Old Dominion Univ.; Thomas Flagg, Bogota, N.J.; Leedom Lefferts, Drew Univ.; Carter Litchfield, Olearius Editions, Kemblesville, Pa.; James McDonald, U.S. Forest Service, Seattle; Lance E. Metz, Canal Museum, Easton, Pa.; Daniel Mordell, Binghamton, N.Y.; Bruce Padian, Dubois Ranger Dist., Dubois, Id.; David H. Shayt, NMAH, Smithsonian; Stephen Victor, American Silver Museum, Meriden, Conn.; Robert M. Vogel, NMAH, Smithsonian; Gerry Weinstein, New York City. With thanks.

SITES & STRUCTURES

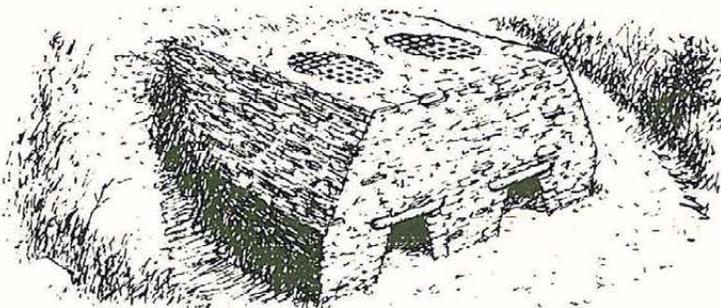
\$\$\$ TO FIX NYC TOWER. Hopes are high that New York City's High Bridge Water Tower, severely damaged in a 1984 fire [SIA Summer 84:16], will be restored with a \$200,000 grant from the N.Y. Office of Parks, Recreation & Hist. Pres. Gov. Mario Cuomo announced the grant, one of 17, in Dec. Pictured on the cover of the SIA membership brochure, the elegant tower was built in 1872 as part of the Croton Aqueduct enlargement. An arsonist's fire destroyed the 25-ft. wood-frame signal station atop the stone octagon. The station was built as a fire lookout and became obsolete with the installation of street alarm boxes. Rescued from the brink of demolition in 1951, the tower was designated a city landmark in 1967. *G.W.*

D&H RR TUNNEL IS ASCE LANDMARK. The refurbished Belden Tunnel on the Delaware & Hudson Rwy. was designated a Historic Civil Engineering Landmark in Sept. by the American Society of Civil Engineers. Located near Harpursville, N.Y., and built between 1863 and 1869, the 2,240-ft. tunnel is among the oldest in the U.S., according to the ASCE. The rehab project was funded by the N.Y. Dept. of Trans., and allows the use of the tallest and largest freight cars on the route. It was reopened in 1986. *D.M.*

OHIO MILL STUDY. Although water-powered grist mills were once a common sight in Ohio, they have, like covered bridges and steam locomotives, become relics of a bygone era. From a total of over 1,200 water-powered grist mills operating in Ohio in 1860, the number of mills grinding grain had dropped to less than 100 by 1922. Today there are believed to be only seven historic water-powered mills in Ohio still processing grain. They include Bear's Mill in Darke Co. (1849); Gaston's Mill in Beaver Creek State Park; Columbiana Co. (1837); Hopkins Mill in Garrettsville, Cuyahoga Co. (c1804); Kister's Mill in Millbrook, Wayne Co. (1881); Lanterman Mill in Millcreek Park, Youngstown (1846); Isaac Ludwig Mill in Grand Rapids, Wood Co. (c1847); and Clifton Mill in Clifton, Greene Co. (1869). Of these, the Lanterman, Kister, Gaston, and Hopkins mills are the only ones employing a waterwheel. The Ohio Hist. Pres. Office is interested in learning about the location, condition, and history of any other water-powered grist mills operating in the state. Contact OHPO, 1985 Velma Ave., Columbus OH 43211 (614-297-2470).

Ohio Preservation News

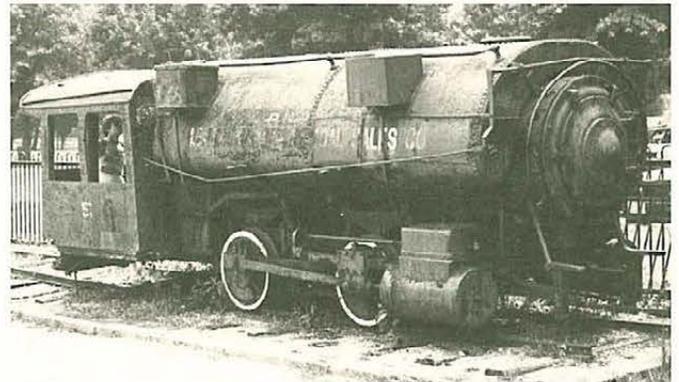
RESTORED 19TH-C LIME KILNS. The ruins of early lime kilns are seen frequently in rural areas of the Atlantic states, but restorations of these important IA sites are rare. In York County, Pa., where hwy. PA-372 crosses the Susquehanna River, the Pa. Power & Light Co. has restored (and partially reconstructed) a double lime-kiln as part of its Lock 12 Historic Area. It consists of two circular stone vaults in which limestone (calcium carbonate) was burned to quicklime (mainly calcium oxide) using alternate layers of limestone rocks and coal. The product was used widely in mortars and as an alkaline dressing for farmland.



The coal used to fire the kiln was brought in by the Susquehanna & Tidewater Canal (c1840-94), whose 170 x 17-ft. Lock No. 12 stone chamber is preserved at the site. Nearby are other IA sites, including remains of a sawmill and Lock No. 13. For a 10-p. booklet describing the Lock 12 Historic Area, contact George R. Aukamp, Lake Aldred Supt., PP&L, RD 3, Box 345, Holtwood PA 17532 (717-284-2278). *C.L.*

CIDER MILL NEEDS NEW HOME. A formidable but deliciously rewarding task awaits the group, institution, or historic site that can summon the muscle and backing to save the Hancock Cider Mill in Florham Park, N.J. Not your average hand press, this industrial-grade mill operated from 1881 to 1948, producing up to 4,000 gals. of apple cider daily for national sales and the production of vinegar. It originally was steam-powered, but was converted to electricity in 1920. Apples were supplied by 140 local orchards, now reduced to scattered apple trees here and there. Nearby is the 1802 Hancock House. During World War I, Hancock-produced vinegar was sold to Dupont for ammunition blending. The Hancock family ran the mill and retains ownership, but now other forces threaten its existence despite listings on both the state and federal registers of historic places. Serious efforts should be made to keep this important production facility intact. Its distinctive exterior architecture alone should attract great interest, but—alas—the mill is big. Capable potential owners should contact Mr. or Mrs. William Hancock, 45 Ridgedale Ave., Florham Park NJ 07932 (201-377-0469). *D.H.S.*

MINE LOCO GOES TO CANAL MUSEUM



1923 locomotive in Allaire State Park, N.J., pending move to Hugh Moore Historical Park & Museum, Easton, Pa.

A unique, mine-service narrow-gauge steam locomotive from the Pine Creek RR Div. of the N.J. Museum of Transportation, Inc., at Allaire State Park, has been acquired by the Hugh Moore Historical Park & Museums, Inc., which operates the Canal Museum and Center for Canal History & Technology in Easton, Pa.

Locomotive No. 51 is one of the few remaining examples of a very specialized engine, which was optimized for colliery service. It was designed to operate under low clearances so that it could pass beneath low tipples and bridges or, in very rare circumstances, actually enter a mine to bring out coal cars. It is built to a minimum clearance of 7½ ft. and to the mine gauge of 42 ins., not commonly used elsewhere. These engines were common in the anthracite coalfields of Pa. where they would haul four-wheel mine cars ("jimmies") to holding tracks or to breakers. They also would transport mine materials, such as support timbers, to distant areas of the collieries.

No. 51 was built in 1923 by the Vulcan Iron Works of Wilkes-Barre, Pa., for the Lehigh Navigation Coal Co., which operated anthracite mines in the Panther Valley of Pa.'s Carbon & Schuylkill counties. Vulcan was the largest builder of these locomotives and No. 51 is typical of their standard design.

It weighs 20 tons and is equipped with Stephenson valve gear. It also has a wide fire-box to burn run-of-the-mine odd-sized anthracite coal, small drivers for good traction, offset sand boxes for clearance, hook & chain single-end couplers, deadwood buffers, and a small four-wheel tender. The smokestack and steam dome are recessed into the saddle water-tank, creating the squat appearance.

Since 1956, No. 51 has been exhibited at Allaire. It will be moved to Easton in the spring and undergo a cleaning and cosmetic restoration. Eventually it will become the centerpiece of a new technology museum to be built in Hugh Moore Park. No. 51 will be exhibited with a programmed video monitor showing mine-service locomotives in action. The program will be based on films shot at Wanamie Colliery near Wilkes-Barre in the early 20th C by Louis Buehler [SIA]. *L.M.*

LOCAL CHAPTERS

SOUTHERN NEW ENGLAND. Upcoming events for SNEC include a Mar. 26 program on the five movable bridges which span Fort Point Channel, Boston. A rare retractile is flanked by trunnion and rolling-lift bascule bridges, in turn flanked by rim-bearing and center-pivot swing bridges. All will be impacted by the construction of the new Third Harbor Tunnel and Central Artery projects. The morning will conclude with a guided tour of the nearby Computer Museum.

On April 23 SNEC members will tour the French Cable Station Museum and the windmills at Orleans and Eastham on Cape Cod. Between 1891 and 1959, Orleans was the American terminus of the first direct Atlantic cable. The cable station was constructed in 1890 and restored in 1972, with much of the original equipment, including a Wheatstone Bridge and an "Artificial Line" (submarine-telegraph test instruments). In the afternoon, there will be a visit to the Jonathan Young

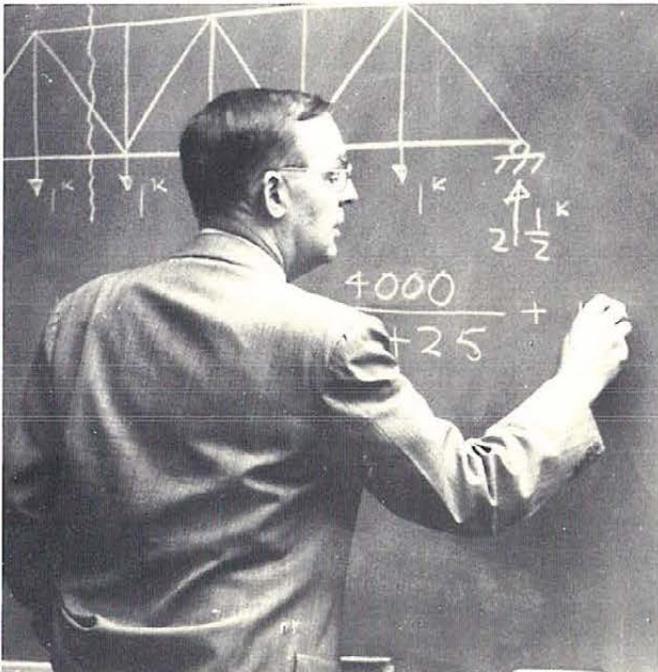
Windmill, moved to Hyannisport in 1897 and five years ago disassembled and returned to Orleans where it is being restored. Also to be toured is the restored (in 1936) and operating Eastham Windmill [HABS], built in 1793 and believed to be the oldest windmill on the Cape.

KLEPETKO (Montana). The Dec. chapter newsletter includes an excellent study of local IA, including the Hardin [Mont.] Water Works (1919-20), whose building and improved system were built by the Security Bridge Co., with the filtration system equipment mfd. and installed by the Pittsburgh [Pa.] Filter & Engng. Co. Secy.Treas. Dale Martin has included a discussion and brief bibliography on rail brands.

IA JOURNAL NOTE. The SIA Board of Directors has voted against publishing issue No. 2 for Vol. 13 (1987); however, there will be issues No. 1 and No. 2, Vol. 14 (1988).

David Starbuck, Editor

CHARLES T.G. LOONEY, 1906-1987



Prof. Charles Looney at the University of Maryland, Dept. of Civil Engineering, about 1965. Photograph courtesy Robert M. Vogel.

Charles Thomas George Looney, 81, member and friend of the Society from its earliest days, died peacefully on Dec. 17 in Silver Spring, Md. Upon retirement in 1972 as Head of the Dept. of Civil Engineering, Univ. of Md., Professor Looney joined the volunteer staff of the Natl. Museum of American History (then the Museum of History & Technology), Smithsonian Institution, and, simultaneously, the SIA. He was proud of his record of missing not one Annual Conf. except the first (1972) or Fall Tour until recent years when failing health prevented further participation.

During his tenure in the NMAH's Div. of Engineering & Industry, Prof. Looney divided his time among a variety of tasks in connection with SIA-HQ business—publications, membership affairs, etc.—and the herculean job of rationalizing the Div.'s massive collections of engineering archival material, acquired over the years from many manufacturing firms, consulting offices, and RR companies [see *SIAN*, Summer 82].

Prof. Looney arrived at the doorstep of civil engineering in a thoroughly appropriate fashion. Born July 27, 1906, he was the son of a Liverpool brick mason who we should like to believe learned his craft

erecting the colossal brick warehouses that were so vivid a feature of the port's extensive system of wet docks, stretching for nearly seven miles along the Mersey. Although Liverpool flourished until mid-20th C, Looney peré, in the tradition of the time, determined that opportunities were better in the New World and emigrated to America. Still in the footsteps of his forebears, he continued westward, to build Army posts in the Southwest, soon taking contracts on his own. As he made his mark and prospered he was able to send for his family. In 1919, immediately after the war, 13-year-old Charles, accompanied by his mother and older brother, left Liverpool, settling in Lawton, Ok.

Upon graduation from high school in 1924, he went to work with his father full time in construction, joining the Bricklayers, Masons, & Plasterers' Intl. Union of America as an apprentice. (He later was convinced that he was the only professor of civil engineering with a bricklayers' union card.) He completed his apprenticeship in 1928 and entered Carnegie Inst. of Tech. in Pittsburgh, graduating with a BS in engineering in 1932.

The Carnegie curriculum of the time further strengthened the man's profound belief that the only acceptable basis for a career in engineering is a solid familiarity with the real world of materials and the many means by which they are formed into the machines and structures that are to serve man. At "Tech" he found, on an equal footing with the courses in math and structural theory and the testing laboratories, shop courses in pattern making, foundry work, and machining—those mildly grubby pursuits that today would be disdainfully referred to by the white collars as "vo-tech."

On graduation in 1932 Prof. Looney spent a time in the design department of the American Bridge Co. at Ambridge, Pa., and then did graduate work at the Univ. of Illinois, receiving an M.S. in 1934. There he met the legendary Hardy Cross, inventor of the moment-distribution method of structural analysis and doyen of engineering education. We easily may imagine that it was Cross who sensed Charles Looney's special talents not only in engineering but in human understanding, and steered him toward what was to become his life work. He embarked on this in 1936 by accepting an assistant professorship in the civil engineering department at the Univ. of North Carolina. The following year he joined the same department at the Univ. of Iowa, where he remained until 1943. In the meantime he was awarded a Ph.D. in engineering by Illinois.

During the war years Prof. Looney worked at the Johns Hopkins Univ. Applied Physics Lab in Washington, D.C. In 1946 he accepted a professorship at Yale and in 1958 he was offered the post at Maryland, where he spent the remainder of his teaching career.

Charles Looney is survived by his wife of 50 years, Kathryn A. Looney, and his hundreds of friends within and without the SIA. He is sorely missed by us all.

Robt. M. Vogel

NEWS OF MEMBERS

Virginia Westbrook is preparing an interpretive tour guide for the Lowertown Historic District [NR] of St. Paul, Minn., an urban area of over 40 large warehouses and industrial structures, c1890-1930. The project is for the city's Heritage Preservation Commission, whose newly elected chairman is *SIA*N editor **Bob Frame**.

1987 TICCIH CONF. REPORT

Seven North American SIA members joined 115 delegates from 20 nations in Austria for the 6th Intl. Conf. on the Conservation of the Industrial Heritage. The conference, under the auspices of TICCIH, began in Vienna on Sun., Sept. 6. After a tour of some of the city's sites, the delegates enjoyed a Viennese get-together in a typical suburban "Heurige" (a pub), with unlimited wine and food.

The formal opening ceremonies took place in the New Hofburg, the former Imperial Palace, on Mon. The session included welcoming remarks and overviews of industrial heritage preservation in the world and in Austria by our hosts, Manfred Wehdorn and Peter Swittalek. TICCIH Pres. Marie Nisser recounted the organization's work to date, and outlined its goals for the future. Music by Mozart (it was Vienna, after all) performed by students at the Technische Universität made for a gala opening.

Mon. afternoon gave delegates a choice of four tours. The public-utilities tour visited a quartet of brick gasholder houses, each over 150 ft. high and 150 ft. in diam., with a volume many times that of the SIA's beloved Troy gasholder house. Another group rode the subways and suburban trains to visit the system (1892-1901) and stations, many designed by the city's master 19th-C planner, Otto Wagner. Other tours visited historical factories, including the concert hall and voicing studios of the famous Bösendorfer piano works. A fourth visit included the iron-framed glasshouse (1879-81) at the Schönbrunn Palace.

That evening we were treated to a viewing of adaptive reuse proposals for the gasholder houses from a student competition. That exhibit was in the HQ of the Austrian Post Office Savings Bank, a 1906 metal-sided building by Wagner.

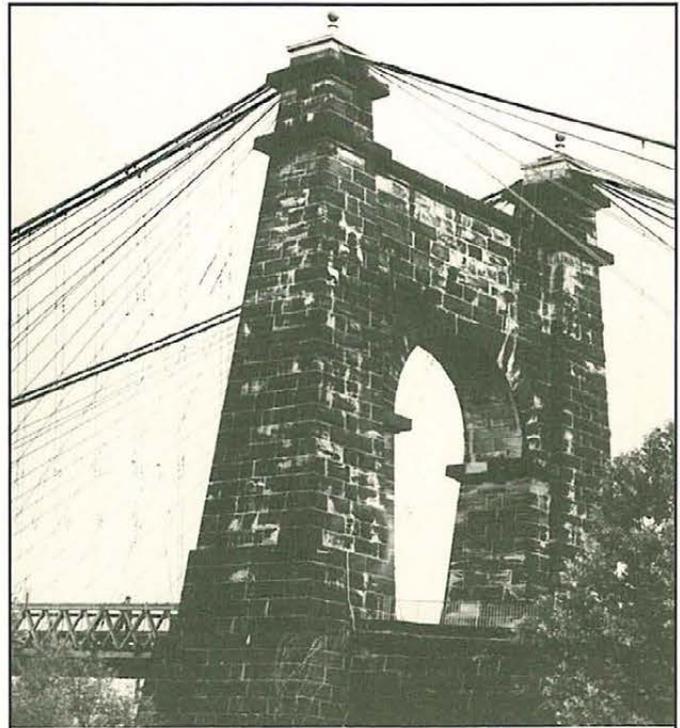
Tues. gave participants a choice of three excursions enroute to the "Iron Road." A high point of all three tours was "Nadelburg," planned and built as the factory town of a mid-18th-C needle works. It was difficult to believe the number of workers who once were stuffed into the still-standing cottages. Work there couldn't have been too much different from that outlined in Adam Smith's famous pin factory. One of the groups had the pleasure of a trip on a chartered train on the Semmering Rwy., Europe's first mountain line (1848-54). Another group visited a historical scythe works (1849) that operated until 1984, while a third visited sites associated with the Vienna water-supply system and the regional forest industry.

The "Eisenstrasse" (Iron Road) in the Province of Styria was to be our setting for working sessions and tours from Weds. to Sat. This mountain-valley region has been famous for iron production since the Middle Ages. Dominating the valley is the Eisenberg, a mountain of solid iron ore. Its sides have been carved into huge terraces by mammoth earth-moving machinery. The mountain was virtually an open pit mine *above* grade.

In the valley's center is Vordernberg, the home of several iron works dating back to medieval times. Here was maintained an almost feudal labor organization under an iron master well into modern times. The last of the Vordernberg blast furnaces ceased working in this century. Evidence of the iron industry from several centuries still stands in the town and neighboring Eisenerz (Iron Ore). We toured a remarkably intact blast furnace of 1846—"Radwerk IV"—now a museum, and rode from Vordernberg to Eisenerz on a former cog railway that now employs diesel railcars working grades of up to 7% on adhesion alone!

Two of the conference's five working sessions focused on industrial monuments and tourism; two took on the subjects of industrial heritage policies; and the fifth one treated adaptive reuse of industrial monuments.

The TICCIH board will include those officers, plus Louis Bergeron, Jorge Custodio, and Diane Newell [SIA]. Ironbridge has offered to serve



Tours and paper sessions are being finalized for the SIA 17th Annual Conference in Wheeling, W. Va., May 19-22. Visits have been planned for the celebrated Wheeling Suspension Bridge, *above* [1849, 1854-56, 1871-72; HAER]; the iron-frame U.S. Custom House [1859]; the LaBelle Nail Works, featuring antebellum cut-nail machinery; a foundry producing cast-iron molds for 20-ton steel ingots; and a visit to the factory where Stogie Cigars are manufactured. Special exhibits in the Custom House will include a comprehensive presentation by the Hommer Laughlin Co., makers of the popular Fiesta Wear. There will be a film series for those interested in cinematography for recording historic sites and industrial processes. Info: Emory L. Kemp, Hist. of Sci. & Tech., Woodburn Hall Rm. G-14, W. Va. Univ., Morgantown, WV 25606 (O: 304-293-3867, H: 304-599-4838).

as the organization's secretariat. The Belgian delegation presented a detailed proposal to host the 7th TICCIH Conf. in 1990. That offer was received warmly.

Fri. afternoon the delegates had a choice of tours in Leoben, including a visit to the Gösser brewery of local fame. The TICCIH general assembly convened at the "Montan Universtät" of Leoben. At that meeting the delegates elected Marie Nisser of Sweden as TICCIH president for a three-year term. Stuart Smith [SIA], director of the Ironbridge Gorge Museum, England, was chosen secretary. Werner Kroker of the Bergbau Museum in the German Federal Republic and Eberhard Wächtler of the Bergakademie Freiberg in the German Democratic Republic jointly will fill the treasurer's post.

Steyr, an important center for the arms and automobile industries, was the destination for Sat. morning. It is home to a new museum devoted to the world of work called "Work, Man, Machine." Housed in a former arms factory, the exhibit covered a huge number of themes in labor and industrial history, from the apprenticeship system to work and leisure in the electronic age.

As is the custom, a volume of National Reports is published at each TICCIH conf. The 1987 edition contains descriptions of work in 19 countries since the 5th conf., which the SIA and SNEC hosted in Lowell and Boston in 1984. A volume of proceedings, including papers presented at the working sessions of this conf., is planned. For ordering info., write to Industrial Heritage, Austria 1987, TU-Wien, Institut Nr 271, Karlsplatz 13, A-1040 Vienna, Austria. Copies of both the National Reports and Proceedings from 1984 are avail. at \$15 each from SIA Washington HQ.

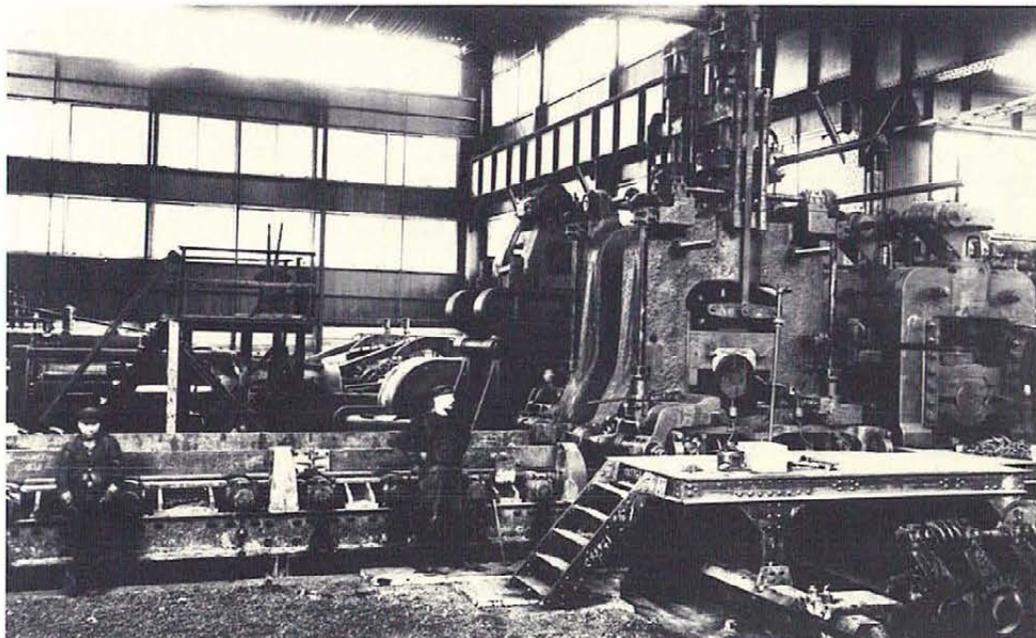
S.V.

CANAL CENTER RECORDS 1908 GREY MILL

In cooperation with the SIA and the Smithsonian Institution, the Center for Canal History & Technology in Easton, Pa., is using video to document the operation of the famed "Grey Mill" at the Bethlehem Plant of the Bethlehem Steel Corp. This 1908 machine allowed Bethlehem Steel to begin production of the rolled "wide flange" steel beam. The wide flange beam helped to cause an urban revolution by making it possible to build skyscrapers of great size at lower cost.

The Grey Mill is unique because it still is powered by a large steam engine and gear train. It is scheduled to be replaced by more modern and efficient production equipment.

The recording project is funded by an \$1,800 Local History Grant from the Pa. Historical & Museum Commn. The actual filming will be done by the television production department of Bethlehem Steel on a 3/4-in video format. The final product will be a documentary available for public distribution.



The Grey Mill at Bethlehem Steel Corp.'s Bethlehem, Pa., plant, about 1912. Photo courtesy Center for Canal History & Technology.

CALENDAR

Mar. 26: 7th Annual Canal History & Technology Symposium, Lafayette College, Easton, Pa. Info.: Lance Metz [SIA], Canal Museum, POB 877, Easton PA 18044-0877 (215-250-6700).

Mar. 31: Deadline for paper proposals for 9th Annual Lowell Conf. on Industrial History, Lowell, Mass., scheduled for Fall, 1988 (date to be announced). Info.: E.J. Pershey [SIA], Tsongas Industrial Hist. Ctr., Boott Mill 8, Foot of John St., Lowell MA 01852 (617-454-9569)*

April 13-17: Annual meeting, Soc. of Architectural Historians, Chicago. Info.: SAH, 1232 Pine St., Phila. PA 19104 (215-735-0224).

MAY 19-22: SIA 17TH ANNUAL CONFERENCE, WHEELING, W.VA. Info.: Emory L. Kemp, Hist. of Sci. & Tech., Woodburn Hall Rm. G-14, W.Va. Univ., Morgantown WV 25606 (O: 304-293-3867, H: 304-599-4838).

Sept. 19-21: Annual meeting, Lexington Group in Transportation History, San Diego, Calif. Info.: Don L. Hoffsommer, Augustana Coll., Sioux Falls SD 59297.

Sept. 19-23: Intl. Symposium on Engineering Geology as Related to the Study, Preservation, & Protection of Ancient Works, Monuments, &

Historical Sites, Athens, Greece. Info.: Greek Committee of Engineering Geology, 1988 Symposium Secretariat, P.O. Box 19140, GR-117 10 Athens, Greece (TELEX: 45 4312 POLX (cb Paul G. Marinos)).

Dec. 7-9: The Interiors Conf. for Historic Buildings, Wash., D.C. Includes history of interiors (mills, firehouses, tenements, etc.), reusing historic elevators and systems, and other topics. Deadline for paper proposals is Jan. 31. Info.: Program Director, ICHB, POB 27080, Central Station, Wash. DC 20038 (202-343-9578).

**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; student, \$20. Send check payable to SIA to Treasurer, Room 5020, National Museum of American History, Smithsonian Institution, Washington, D.C. 20560; all business correspondence should be sent to that office. Editorial correspondence should be sent to ROBERT M. FRAME III, Editor *SIA Newsletter*, P.O. Box 65158, St. Paul, Minn. 55165-0158. ISSN 0160-1067

Submission deadlines: Feb. 1 (Spring), May 1 (Summer), Aug. 1 (Fall), and Nov. 1 (Winter).

The *SIA Newsletter* is included in the *Avery Index to Architectural Periodicals*, *Avery Architectural & Fine Arts Library*, Columbia University.

USE ELECTRONIC MAIL! If you are a computer user and subscribe to MCI Mail, you can send messages directly to the *SIA* Editor. Address your MCI Mail to Robert M. Frame III, MCI ID 258-5345.

Room 5020 National Museum of American History
Smithsonian Institution Washington, DC 20560

**SOCIETY FOR
INDUSTRIAL
ARCHEOLOGY**

Nonprofit Organization
U.S. POSTAGE
PAID
Permit No. 3087
Minneapolis, MN

Return and Forwarding Postage Guaranteed
Address Correction Requested