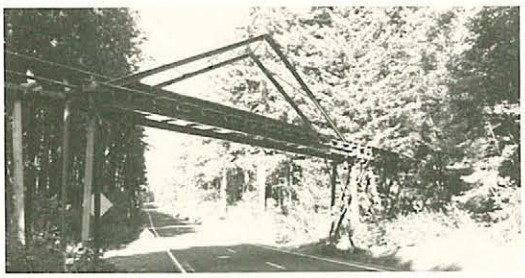
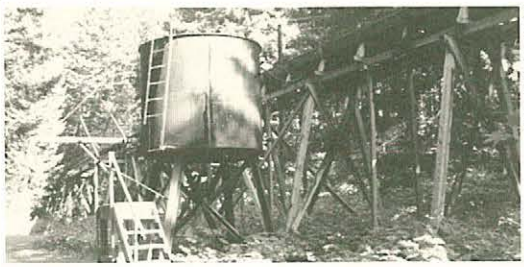
SOCIETY FOR INDUSTRIAL ARCHEOLOGY

NEWSLETTER

Volume 15 Winter 1986 Number 4

FINAL DAYS FOR FAMOUS FLUME





BROUGHTON FLUME. Over the road and through the woods, the historic lumber-carrier makes its nine-mile way through Columbia Gorge. *George Rappole photographs.*

Opened in 1913, the Broughton Lumber Co.'s nine-mile-long wooden flume in Washington's Columbia Gorge will be shutting down in Dec. 1986. Never meant for logs, the flume carries rough-sawn lumber (cants) from the sawmill at Willard to Broughton's remanufacturing plant and shipping point at Hood, a 1,000-ft. vertical drop.

The old operation requires large-diameter logs, now in short supply in the Northwest's new-grown forests. A new mill would need to process at least 200,000 bd. ft. per day to be economical, and the flume's capacity is only 125,000. Over the years the flume became well known and was featured in a Walt Disney movie, "Charlie the Lonesome Cougar," and a Lassie TV show, among other things. George Rappole [SIA] took the accompanying photos in Oct., capturing some of the operation's last days.

The trough is constructed of Douglas fir for durability, while the supporting structure is cedar to withstand rot. The flow is about two ft. deep in the trough, which is metal-lined only along the sharper curves. The whole structure is built in 16-ft. sections, so a rock-slide would damage only a limited number of sections.

A warning system, consisting of a seven-volt line, runs from a bell system at Hood to a dumping system 4½ miles up, where water can be dumped into a lake in an emergency. This is done because water crashing from a flume break may wash away more of the hillside than a small slide. A 12-in. walk board runs the full nine miles and has been patrolled weekly by workers wearing special calked boots with sharp points on the sole.

Lumber is loaded automatically in the top end by feed chains. Boards over 32 ft. have been trucked down, but trucking the whole production was considered too expensive. The closing includes the entire Broughton Co., not just the flume. There are 95 workers. The company manager reports that the flume may be preserved.

MAY 28-31

Turn on to Troy for 16th Annual Conference

Sweet sixteen and back in Troy again! The SIA makes a triumphant return to New York's Hudson-Mohawk region, coming back to the site of the Second Annual Conf. in 1973. Long-time members need not fear that they saw it all the first time. There are more than enough sites in the Albany-Troy-Schenectady triangle to occupy three conferences.

Itineraries are still pending but will feature at least four process tours, including Albany Int'l, a major manufacturer of paper-makers' felts and paper-mill supplies, the N.Y. State Barge Canal Shops and dry dock, and Waterford's flight of five locks. Conf. participants also will visit the Harmony Mill complex and power canal system in Cohoes, GE's enormous Schenectady works, one or more of the area's numerous historic hydroelectric plants, the Port of Albany, and Troy's 1873 Gasholder House (now world-famous, via HAER drawing, as the SIA logo; for the full story, see *SIAN* Spring '84:1).

Troy Holiday Inn will be the conf. HQ. Paper sessions on Sat., May 30, will be at Rensselaer Polytechnic Inst.'s spacious, well-equipped Communications Center. *Plan now* for an awesome schedule.

Paper & session proposals are due by Jan. 31 to David Starbuck, Dept. of Sci. & Tech. Studies, RPI, Troy NY 12180-3590. General info. avail. from Duncay Hay, N.Y. State Museum, 3097 Cultural Ed. Center ESP, Albany NY 12230 (518-473-1746).

Registration materials, including programs, tour itineraries, and papers, will be mailed to members during the first week in April.

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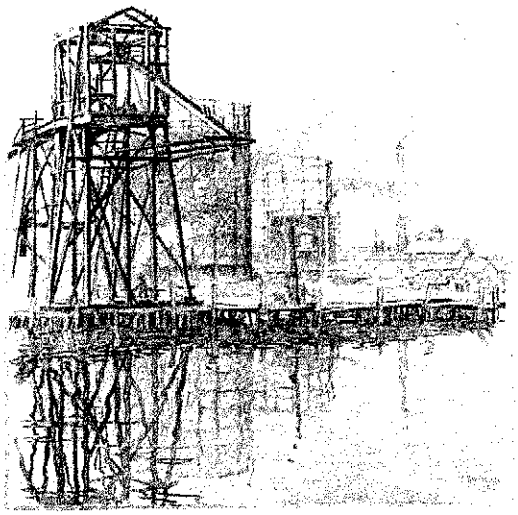
IA IN ART

DIEDRICKSEN'S 'NEW HAVEN WATERFRONT'



NEW HAVEN WATERFRONT. 1913, pencil on cardboard, private collection. *Frank A. Nicholas photograph.*

Much of Theodore Diedricksen's art work reflects his long residence in Connecticut in general and New Haven in particular. Many of his drawings and prints record historic structures around his native state, while others, careful delineations of prominent campus buildings, were the product of his long tenure at Yale. Given the artist's five years of Navy service and the proximity of New Haven to Long Island Sound, it is not surprising that some of Diedricksen's lithographs and etchings treat industrial scenes near the water.

New Haven Waterfront of 1913, which must have been executed soon after his return from Europe, is one of a series of drawings he began at least as early as 1909, probably as studies for prints. The careful delineation of the industrial structures with their wobbly reflections in the water reveals a fascination with the rough and often unexpected beauties of such scenes, paralleling Joseph Pennell's fascination with similar "wonders of work." Other drawings and prints on this theme include *Pocket Dock, New Haven* and *Old Coal Hoists, Railroad Yard, New Haven.*

Born in Hamden, Conn., Diedricksen (1884-1967) spent most of his life in nearby New Haven, studying art at the Yale School of the Fine Arts between 1905 and 1910. He received a Bachelor of Fine Arts from there in 1918, and while at Yale, he was awarded several prizes, including the William Wirt Winchester Prize in 1910, which enabled him to spend two years in Europe. After studying in Paris and traveling on the Continent, he returned to America and was hired by Yale in 1917 to teach drawing and printmaking, remaining there until his retirement in 1952. *B.F.*

SIAN *is happy to welcome Betsy Fahlman as editor of the occasional "IA in Art" feature. Don't hesitate to send ideas, info., and photographs to her at the Dept. of Art, Old Dominion Univ., Norfolk VA 23508 (804-440-4047). Ed.*

SITES & STRUCTURES

MORE UNION STATIONS SAVED. Designed by St. Paul architects Reed & Stem, Burlington Northern RR's spectacularly domed **Tacoma [Wash.] Union Station** [NR], built in 1911 by the Northern Pacific for the NP, Great Northern, and Union Pacific, will be restored to house federal offices now scattered throughout the city, according to *The Seattle Times*. The building seemed doomed a few years ago when shopping-mall plans fell through and Amtrak went elsewhere. With congressional help, a Save Our Station citizens' group got the city to make one last try at finding a tenant, resulting in the present agreement. Tacoma plans to spend about $100,000 for preliminary planning and issue bonds for the over $20 million needed for the whole project.

A similar and now familiar story came to a bright end in Sept. when the restored 1900 **Albany [N.Y.] Union Station** [NR] was dedicated as Norstar Plaza, HQ for Norstar Bancorp, its data processing operations, and other Norstar companies. The granite Beaux-Arts station was designed for the N.Y. Central & Hudson River RR by Shepley, Rutan & Coolidge of Boston, successor firm to H.H. Richardson, and built by Norcross Bros. of Worcester, Mass. It was purchased by N.Y. state in 1966 and closed two years later. By the time Norstar purchased the building in 1984, the interior had been damaged extensively by water, vandalism, and neglect. The $18.5-million restoration and renovation, directed by Einhorn Yaffee Prescott, P.C., Architecture & Engineering, Albany, included doubling the station's usable space from 50,000 to 100,000 sq.ft. by putting four stories in the three-story interior. A central three-story atrium serves as a lobby. Info.: Corp. Communications, Norstar Bancorp, 1 Norstar Plaza, Albany NY 12207-2796 (518-447-5129).

SULFITE PULP MILLS CLOSING. With some 40 pulp mills, including about 11 sulfite-process mills, Wisconsin has more pulp mills than any other state (next is Maine, with 23). Most are small, however. This year the state had its fourth closing of a sulfite pulp mill since 1980, with another threatened. [Sulfite pulping involves separating out the celluose fibers by a chemical process, instead of using mechanical grinders.] The mills, many built in the late 19th C, emit sulfur dioxide which forms acid rain when mixed with other substances in the atmosphere. Expensive scrubbers are needed to keep emissions within legal limits and the cost is dooming some old mills. Closed so far are plants at Green Bay, Rhinelander, and Oconto Falls. Adding to the dilemma is the recent availability of cheap pulp in a glutted world market, causing some papermakers to consider closing their old pulp mills and buying pulp instead. Perhaps HAER might be interested in documenting one of these sulfite pulp mills.

Corporate Report Wisconsin

BOOK PLANNED ON GAS-ENGINE PIONEER

In 1952, the London Science Museum appealed without success for any information about Joseph Day, an English pioneer of the internal-combustion engine. He designed a valveless two-stroke gas engine of considerable significance, which was patented in 1891-92. Examples survive in the Science Museum and the Deutsches Museum in Munich.

Day was born in Sept. 1855 in Bayswater, London, and after school at Beaumont, Windsor, he became one of the first engineers to train at the Crystal Palace School of practical engineering.

An attempt to raise capital in 1892 to develop his gas-engine patents failed to attract shareholders and the costs of the whole enterprise soon proved too much for Day and his last partner. They went bankrupt in 1893. By 1904, he was in London and, with the help of his father, a noted London lawyer, he recommenced the manufacture of Day "valveless" two-stroke stationary and marine engines by 1906. These later were produced by the Day Motor Co. Ltd. in Putney. The engines had only three moving parts and would run equally well forwards or backwards.

Day also was an inspiration behind the two-stroke engined Trojan car of 1912. World War I interrupted this work as the firm became busy on gov't contracts. In 1923 his firm was reformed as the Day Foundry & Engine Co. Ltd. in Richmond, Surrey, but Day engines had ceased manufacture by 1927. Day died at 91 on Christmas Day in 1946, apparently quite forgotten.

His role in showing that the two-stroke engine could compete — especially in the field of marine engines — with those working on the Otto four-stroke cycle, deserves proper recognition. Information of any aspect of Day's life and work is sought for a planned biography. Particularly important is data on the evolution of the marine engine. News of the survival of any Day engines or other artifacts would be especially welcomed. Contact H.S. Torrens, Lower Mill Cottage, Furnace Ln., Madeley, Crewe, England CW3 9EU.

'86 FALL TOUR, OCT. 2-5, SPORTED SALTY THEME

The Fall Tour was nautical but nice. It steered a meandering course along the coastline of southwestern Rhode Island and southeastern Connecticut, among maritime and textile towns of the 19th C, with side excursions into the Paleozoic era and the 20th C. Like W.S. Gilbert's Ruler of the Queen's Navee, we "never, never went to sea" but nevertheless did see a lot on shore. The tour was co-sponsored by the SIA, the State Historic Preservation Office of the Conn. Historical Commission, the R.I. State Dept. of Environmental Management, the Slater Mill Historic Site, and the SIA Southern New England Chapter. Mary Donohue and David A. Poirier served as tour co-chairs.

Over 65 registrants comprised two busloads of IA enthusiasts from as far west as Minnesota, north as Ontario, and south as Maryland. After assembling and registering at Day's Inn in Mystic, Conn., on Thursday evening, we donned visored caps (emblazoned with emblems of the USCGC *Eagle* and the USS *Nautilus*), boarded the buses, and headed to the new **Nautilus Memorial**.

Opened last April and already host to 200,000 visitors, the $7.9-million Memorial houses a museum of the submarine with exhibits on submarine history and warfare, including a re-created control room and conning tower with functioning periscopes (cross-hair sights but no torpedoes). Several small submarines and a missile hatch are exhibited on the museum's lawn.

The USS *Nautilus*, the first nuclear-powered ship, is berthed at an adjacent pier. The onboard public tour (with audiophones) took us through the crew quarters and control rooms but gave no hint of the vessel's nuclear power technology.

After supper, Dale Plummer of New London Landmarks took us on a slide-show tour of the city's maritime and industrial heritage. His presentation sparked animated informal discussions.

Friday's Conn. tour leaders were Matt Roth and Mary Donohue. First stop was the 20th C: a photographic film process-tour at the **Mystic Color Lab**, which is housed in a former razor-blade factory — a large brick building whose occasionally visible massive, slow-burning, timber floor-beams contrasted with the large, futuristic, orange ribbed-plastic tubes carrying chemicals throughout the production system. About 400 employees work three shifts, starting at 4:30 am, to fulfill the company's promise of 24-hr. processing of the 12 to 14 thousand rolls of film that arrive and depart daily.

Although the actual processing is highly automated, much handwork remains in mailing, labeling, and inspecting. Meanwhile, 200 individual rolls are spliced together on large reels and fed through the literally "black box" technology of automatic developing and printing. Besides printing their own mailers and stationery, this Conn. Yankee company thriftily recycles its chemicals, recovering some 400 lbs. of silver weekly.

Reeling backwards in time, we next stopped at **Clyde's Cider Mill** (c1898) in rural Mystic. Clyde's grandson, Jack Bucklyn, fired up, which the 1890s Ames Iron Works horizontal steam engine and set the wooden pulleys turning on the line shafting and the leather transmission-belts running, to elevate a stream of apples from outside to a chopper overhead. The resulting pomace fell onto a special nylon blanket, to be wrapped and sandwiched between wooden slatted frames. Once the frames and pomace-packed blankets were stacked five high, they were swung around to position beneath a great screw press that squeezed them juiceless while another stack of chopped fruit was prepared. Troughs carried the juice to a refrigerated tank and the remaining pulp was discarded.

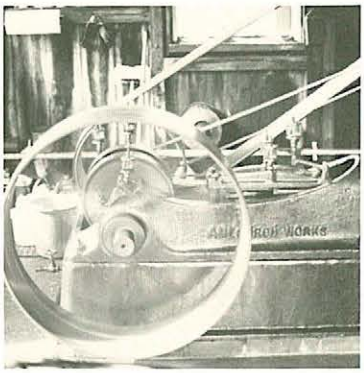
From this organic juiciness we were driven to the stony wastes of Lantern Hill in aptly named North Stonington and equipped with

QUARTZ QUARRY. Assembled in front of a large pile of quartz, tourers learn about local geology. Note the exposed quartz vein in the distant hill. *Aron Eisenpress photograph.*

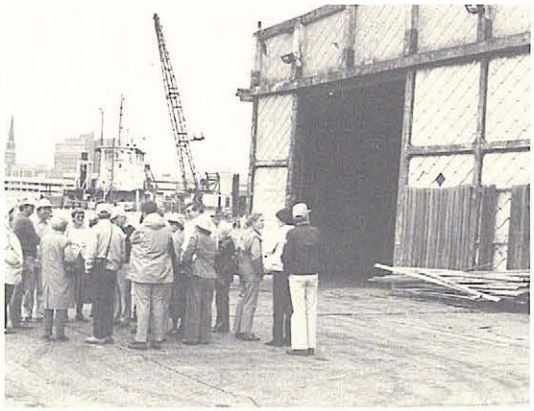
hard hats, glasses, and masks for visiting the **Ottawa Silica Company's quartz quarry**. This resource was created 200 million years ago when, according to plate tectonics, Africa moved away from the American east coast, leaving a massive hard-rock white quartz vein, 98% pure silicon dioxide.

Thirty employees mine and dry-grind the quartz in a rod mill to several degrees of fineness and bag it for such uses as foundry sand, aquarium sand, swimming pool filters, sandbox sand, and architectural concrete — but very little for making glass. We climbed high in the mill for a site overview and peeked in on the bagging operation. [Some of us found that by drawing nostrils and wrinkles on a nose mask we could make a suitable "Planet of the Apes" costume and, thus disguised, toured onward.]

Returning to civilization, we stopped for lunch at **Branford House**, a mansion of palatial size, Tudor wood panelling, and elaborate



CLYDE'S CIDER MILL. *Far left:* The mill in rural Mystic. *Below left:* Putting apple pomace into special blankets before pressing. *Below right:* The Ames Iron Works steam engine that powers the mill. *Aron Eisenpress photographs.*



Gathering at the Connecticut State Pier in New London. *Aron Eisenpress photograph.*

plaster ceilings. It was built 1902-04 for Morton Plant, son of railroad and hotel magnate Henry B. Plant. This superb vestige of America's Gilded Age and its extensive grounds were sold at auction to the state in 1938, leased to the U.S. Coast Guard in 1942, and became a U. of Conn. branch campus in 1967. Underused and neglected, Branford House has been leased to a private company for restoration and use as a conference center. As we munched sandwiches in the great front hall or on the terrace overlooking the New London harbor entrance, architectural preservationist Max Ferro regaled the group with accounts of the Plant family's opulent lifestyle and reviewed the house's preservation problems caused by faulty past repairs.

Coastal dampness (elsewhere called rain) began that afternoon as we took brief notice of the juxtaposition of old and new at the much-rebuilt **New London Old Town [grist] Mill** (c1650), located beneath the ten-lane bridge approach (c1976) of Interstate 95 over the Thames [pronounced locally as spelled, with long "a"] River. Despite the drizzle we tramped about the embankments of **Fort Griswold** on Groton Hts., struggling with the difference between a ravelin and a javelin, and shuddering at the grisly massacre of patriots there by the redcoats in 1781.

At the **Conn. State Pier** we toured the cavernous (and mostly vacant) 180x920-ft. interior of **New London Terminal** whose 1913-16 construction made it into *Engineering News* in 1915 (v.74, n.22). While containerization has eliminated "break bulk" cargo handling at most other facilities, we were told by our determinedly optimistic hosts, this pier's business has remained steady in recent years at c50 ships a year, unloading non-containerized plywood, copper, hemp and abaca fiber, paper, and cardboard for transshipment by rail or truck. Some heretical admirerers of the large wooden posts were heard muttering calculations as to how many "really great condos" would fit into the terminal's interior of 36 bays long by 6 bays wide.

Our last stop of the afternoon was the U.S. Coast Guard training barque *Eagle*, "America's only active-duty square rigger." Our brochure also informed us that about 175 cadets from the USCG Academy "develop a respect for the elements that will be with them throughout their lifetime...working aloft [with the over 20,000 sq. ft. of sails and 20 miles of rigging] they meet fear and learn to overcome it." The youthful crew with whom we chatted seemed genuinely enthusiastic about their cruises. We contented ourselves with imagining the 22 sails were unfurled and that the rain pattering in our faces as we gazed wistfully aloft was salt sea spray [sigh...]. This *Eagle*, the seventh since 1792, entered US service as a World War II prize. Built in 1936 as the *Horst Wessel* for training German naval cadets, she was rechristened in 1946 and sailed from Bremerhaven to New London. Her hull is .4-in. steel, her weather decks are 3-in. teak over steel, and her deadeyes and "made" pulley blocks are wood.

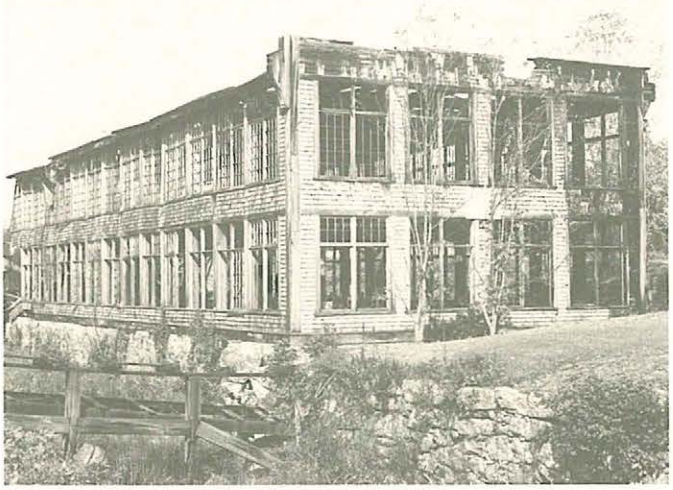
After supper, we were greeted by Ben Fuller of the **Mystic Seaport Museum** who talked briefly about the small-boat collection. We viewed a melodramatic 1950s movie about tension aboard a submarine during World War II, and a prizewinning film about the New London RR Station (c1886-87), its architect, H.H. Richardson, and restoration in the 1970s.

The sun shone beautifully on Saturday throughout our tour of southern R.I., guided by Pat Malone and Sandy Norman. After a brief stop in Stonington, Conn., to admire the **Harbor Lighthouse** (1840-89), we wove around the countryside from one 19th-C textile mill to another, while Malone spun us a yarn about the economic and political ambivalence of the antebellum R.I. textile mill owners who made coarse, longwearing cloth for slaves on Southern plantations. Many such mills burned "mysteriously" in the early 1870s after it was clear that demand for the cloth had disappeared. Other mills adapted and survived until the 1920s when the industry, with historic irony, itself moved to the South.

We walked around the remnants of mills and mill towns ranging in condition from sturdy, stone, adaptively used **Peacedale Mill** (from 1847), to the collapsed **Carolina Mill** (from 1841), and the **Hallville Mill** (c1814), of which nothing remains except a section of the elevated stone headrace and traces in the woods of its former water-power system. Among the better preserved were the three-story, symmetrical Italianate brick mill at **White Rock** (from 1848) and its typical village of duplex houses, boarding house, school, company store, and post office. It its early days the mill employed 150 men

USCGC *EAGLE. Left:* Berthed, in "coastal dampness." *Right:* Commodore (AKA SIA prexy) Torgersen eyes the horizon. *Aron Eisenpress photographs.*

Above left: Photographing the remains of the Carolina Mill's boiler house. *Above right:* The Hallville Mill headrace. *Below:* The sad state of the Carolina Mill. *Aron Eisenpress photographs.*



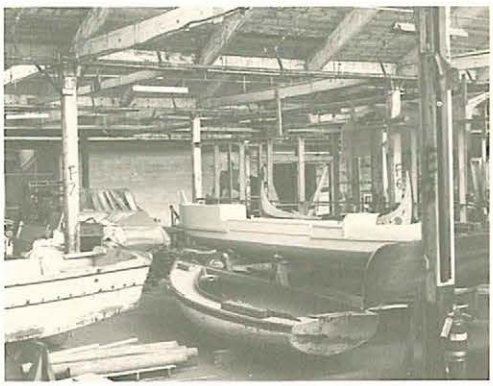
and women 12 hrs./day, 6 days/wk., to produce 2,700 yds. of fabric from 224 looms.

We looked out on the Atlantic at **Narragansett Pier**,a popular resort of the affluent in the late 19th C, crossed the more-than-mile-long **Jamestown Bridge** (1940) onto Conanicut Island, and picnicked — wondering, why rice pudding? — at the reinforced-concrete remains of **Fort Wetherill** (1905-40). There, through World War II, long-range guns guarded Narragansett Bay's east and west passages. We stopped at **Beavertail Lighthouse**,whose granite tower has stood, 10 ft. sq. and 54 ft. high, since 1856, following less long-lived structures on the site since 1749. It has housed a succession of lamps lighted by whale oil, gas, vegetable and mineral oils, kerosene, and electricity. It is one of ten lighthouses still operated by the Coast Guard on R.I. waters. A maritime museum is planned for the now-vacant assistant keeper's house.

After climbing onto the **Jamestown Windmill**,which ground corn from 1787 to 1896 and was restored after 1904, we returned to the mainland to visit Lafayette and its three-story brick mill, which produced woolen goods from 1877 to 1947, and to ponder the obliteration of Hallville, mentioned above. In Mystic Village that evening we feasted sumptuously on clams, lobster, corn, and wine, served by the Knights of Columbus at St. Patrick's Church. Festive gaiety reached ever higher peaks after Peter Stott won the drawing for a

Peacefully lunching amid the ruins of Fort Wetherill's long-range-gun batteries. *Aron Eisenpress photograph.*

Above: The Jamestown Windmill. *Right:* A small part of Mystic Seaport's small-boat collection. *Aron Eisenpress photographs.*



gallon of Clyde's cider, aged into potent applejack, and shared it around to all who dared take a sip.

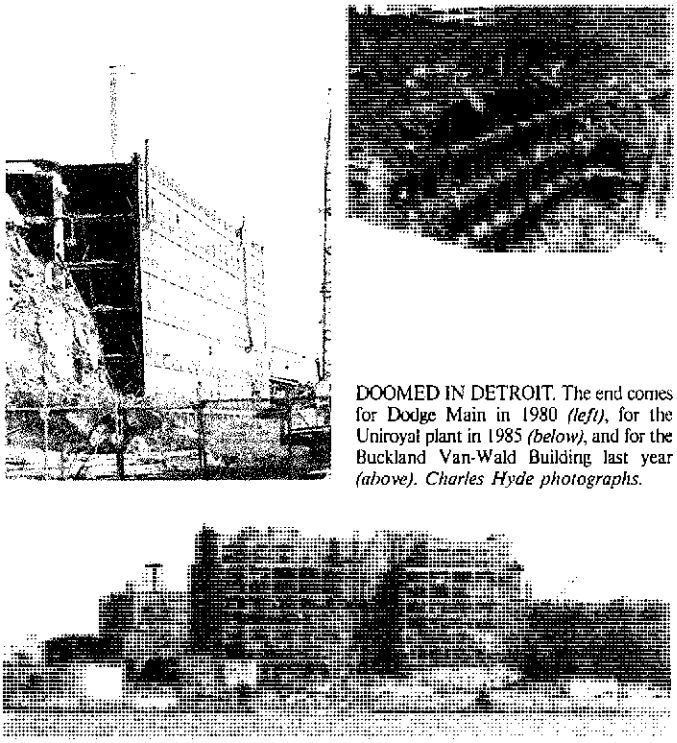
Sufficiently sobered by Sunday morning, we spent the final Fall Tour hours examining Mystic Seaport's small-boat collection. Curators Ben Fuller and Clark Posten guided us on an extensive tour of this usually closed collection. Over 300 working and pleasure craft chronicle marine design from the early 19th C to the advent of fiberglass construction. The predominantly wooden vessels are conserved and studied for period designs and construction techniques. Museum craftsmen have reproduced a number of them for sale and for the Seaport's own interpretive needs.

Emphasis has been on work boats rather than yachts, but canoes, guideboats, and racing skiffs complement the larger assembly of whitehalls, peapods, lobster boats, and other New England working craft. The collection also includes several marine engines ranging from small, early 20th-C "one-lungers" to a 350-hp., triple-expansion steam engine built in 1899 by the legendary Herreshoff Mfg. Co. of Bristol, R.I.

At the conclusion of the tour, which lasted most of the morning, many SIA visitors took the opportunity to prolong their vicarious maritime experience by checking out the museum's display collections, now among the most popular of Conn.'s tourist attractions. The rest of us landlubbers headed homeward on terra firma.

C.C. with P.S. & S.V.

"WE ARE THE SIA." We are? Say it ain't so, Charles. *Aron Eisenpress photographs [Why'd you do it, Aron? Ed].*



DOOMED IN DETROIT. The end comes for Dodge Main in 1980 *(left)*, for the Uniroyal plant in 1985 *(below)*, and for the Buckland Van-Wald Building last year *(above)*. *Charles Hyde photographs.*

DETROIT DEMOLITION

Updating his "Motown Review" story of a year ago [*SIAN* 14(4):1], Detroit watcher Charles Hyde [SIA] reports that IA landmarks continue to fall to the wrecker's ball. The **Stroh Brewery complex** (c1912), which hosted a reception during the 1980 SIA Annual Conf., was finished off in Sept. The $3-million demolition of the huge **Uniroyal plant** (1905-c1920) is complete. **Olympia Stadium**,which housed the largest indoor ice rink in the U.S. when it opened in 1927 (although the structure itself is not particularly noteworthy), was razed last summer. Also demolished during the summer was the **Buckland Van-Wald Building** (c1886). The **Buhl Sons Co. Warehouse** (Adair St. Warehouse), a reinforced-concrete, mushroom-column structure by architect Albert Kahn, went in 1984. Hyde prepared mitigation documentation on the Buhl, Buckland, and Olympia buildings, as well as the famous Dodge Main complex which was destroyed in 1980. The Uniroyal plant was never documented, even though it was in the HAER Michigan Inventory.

All of this demolition was enough to provoke a *Detroit Free Press* article on "The Art of Destruction" (July 15, 1986), a discussion of the many ways used to blast, smash, crush, and jackhammer the buildings to the ground. Kahn's concrete columns have given the wreckers the most trouble so far, but they expect serious difficulties when 1950s and 60s buildings go in the near future, with their potentially explosive pre-stressed and post-tensioned concrete beams.

EXHIBITS

IN "FIELD & FOUNDRY: A WORKING CONTRAST," two contemporary photographers compare two American scenes. Debbie Fleming Caffery of Franklin, La., documents the work and workers of the sugarcane industry in the rural South. Charles Reich of Hartford, Conn., photographs the architecture and ambience of the factories and foundries of the urban Waterbury, Conn., area. Some 100 original photographs are included. The exhibit runs through Jan. 15 at the Museum of Our Nat'l Heritage in Lexington, Mass., traveling in Sept. to the Eli Whitney Museum in New Haven and possibly to Louisiana. It is also available for bookings. A related monograph will be published in Jan. Info.: Barbara Franco, MONH, POB 519, 33 Marrett Rd., Lexington MA 02173 (617-861-6559).

H.E.W.

"THE WIZARD OF MENLO PARK: THOMAS ALVA EDISON INVENTS A NEW CENTURY," an exhibit honoring the centennial of Edison's West Orange, N.J., 1887 laboratory, runs through April, 1987, at the Middlesex County Museum, 1225 River Rd., Piscataway, N.J. (201-745-5589). It focuses on Edison's inventions in the arts and entertainment, and includes the nickelodeon, kinetoscope, posters, photos, and technical drawings.

"JOHN FRITZ & THE GROWTH OF THE AMERICAN IRON & STEEL INDUSTRY," opens Feb. 17 at the Canal Museum, Easton, Pa. It focuses on Fritz's three major achievements during his long career: (1) The creation of the first "three-high" rail mill at the Cambria Iron Works at Johnstown, Pa. [The "three-high" made it possible to roll iron rails of uniformly high quality and low price for the first time in the U.S., thus accelerating the growth of RRs.] (2) While serving as the Supt. of Bethlehem [Pa.] Iron Co., Fritz played a large role in modifying the Bessemer process for making steel so that it could be employed in the U.S., sharing honors for this with Alexander Holley. (3) During his last years at Bethlehem Iron, he introduced heavy forging technology into the U.S., transforming his company into a major producer of guns and armor for the first steel warships of the U.S. Navy, which served in the Spanish-American War. Some credit Fritz with founding the modern military-industrial complex.

Interpretive lectures accompany the Fritz exhibit, which closes Apr. 20. A companion exhibit, **"John Fritz, Ironmaster: His Bethlehem Legacy,"** will be at the Kemerer Museum in Bethlehem. The Canal Museum is on Rt. 611, south of Easton, Pa. It is open 10-4 Mon.-Sat., and 1-5 Sun. (215-250-6700).

L.E.M.

NEW MARKER AT W.VA. TUNNEL. The present historical marker at Hawk's Nest Tunnel near Gauley Bridge, W.Va., celebrates the technological accomplishment of drilling the five-mile tunnel in the 1930s. It says nothing about drilling through near-pure silica and the resulting deaths from silicosis of more than 1,500 workers, branding the community the "Town of the Living Dead." It has been termed one of the worst industrial disasters of the 20th C. Now, an appeal by the son of an engineer who died in 1934 after working in the tunnel has persuaded the state Culture & History Dept. to erect a second marker recognizing the social side of the project.

The tunnel was commissioned by Union Carbide (now infamous for the recent Bhopal industrial disaster) to divert the New River from Hawk's Nest to a power station in Gauley Bridge, with the power going to a Carbide subsidiary's smelting plant. Working conditions and the subsequent deaths provoked an investigation by the House Labor Committee in 1936. In 1939, Gov. Homer "Rocky" Holt refused to sanction a Federal Writer's Project guide to W.Va. until a lengthy and graphic discussion of the Hawk's Nest project was toned down.

T.K.

CONTRIBUTORS TO THIS ISSUE

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SOCIETY FOR INDUSTRIAL ARCHEOLOGY
NEWSLETTER

PUBLICATIONS OF INTEREST

A SUPPLEMENT TO VOL. 15 NO. 4 1986

Compiled by Sandra L. Norman, Slater Mill Historic Site and Marguerite A. Darroch & Robert M. Vogel, National Museum of American History

GENERAL SUBJECTS

R.A. Buchanan (SIA), THE DIASPORA OF BRITISH ENGINEERING. In *Technology & Culture*, July 1986, pp. 501-24. The remarkable spread of British engineers and engineering throughout the the world--not just the Empire--in the 19th C was the result less of a conscious effort on the part of the government than individual decisions. The effect was nevertheless of staggering proportions in terms of spreading technology and civilization worldwide.

Sadi Carnot, REFLEXIONS ON THE MOTIVE POWER OF FIRE. (Tr. & ed. by Robert Fox). Lilian Barber Pr. (Box 232, NY 10163), 1986. 224 pp. $40.50. "First full critical edn. to be published in English," based on a new translation of the work first published in French in 1824. Introduction by Fox places Carnot in economic, technological, and social context of his time and includes commentary on early history of thermodynamics.

DIDEROT'S ENCYCLOPEDIA. Reprint of complete body of illustrations @ 1/4 full-size, printed 4 / page--1146 pp. Avail.: Roy Arnold, 77 High St., Needham Manor, Suffolk IP6 8AN, England. £ 80. Ppd.

INDUSTRIAL IMAGE: BRITISH INDUSTRIAL PHOTOGRAPHY 1843 TO 1986. The Photographers' Gallery (Halina House, 5 Great Newport St., London WC2H 7HY), 1986. 80 pp., illus. Catalog to accompany traveling exhibition on view throughout Britain until 1988. Two illustrated essays divide the period roughly in half. Francis Pugh's "Industry & the Photographer" details the development for industry, 1843-1918, while Peter Stebbing's "The Uses & Users of Industrial Photography, 1918-1986" reveals the wider purposes of marketing, public relations, and media that have grown with the photographic image.

Edwin Layton, Jr., THE REVOLT OF THE ENGINEERS. Johns Hopkins U. Pr. (Baltimore), 1986. $29.50/9.95. The history of American engineering with emphasis on professionalism, social responsibility, and ethics. (Awarded the Dexter Prize by the Society for the History of Technology.)

Jet Lowe; intro. by David Weitzman (both SIA), INDUSTRIAL EYE: PHOTOGRAPHS BY JET LOWE FROM THE HISTORIC AMERICAN ENGINEERING RECORD. Preservation Pr. (1785 Massachusetts Ave., Washington, DC 20036), 1986. 128 pp., 120 color & duotone photos. $37.95 Ppd. A collection of the best of of HAER photographic documentarist Lowe's work during his eight-year career there. Superb renditions of mills, factories, bridges, and other industrial structures. The genre at its best by the best.

Donald Mackenzie & Judy Wajcman (eds.), THE SOCIAL SHAPING OF TECHNOLOGY: HOW THE REFRIGERATOR GOT ITS HUM. Open U. Pr., (Philadelphia), 1985. 327 pp., $17. Anthology of essays covering broad spectrum of technology--medieval to modern; domestic to military.

Otto Mayr, AUTHORITY, LIBERTY, & AUTOMATIC MACHINERY IN EARLY MODERN EUROPE. Johns Hopkins U. Pr. (Baltimore), 1986. $30. The relationship among machinery, technological thought, and culture. Germany's fascination with clocks and automata, and England's with self-regulating feedback devices created powerful cultural symbols widely influencing literature, science, philosophy, and politics. National stereotypes aren't necessarily imaginary or specious.

Robert C. Nesbit, MAKING A LIVING IN WISCONSIN, 1873-1893. In *Wisconsin Mag. of History*, Summer 1986, pp. 251-83. Excerpted from Nesbit's *The History of Wisconsin, Vol III: Urbanization & Industrialization, 1873-1893*. Covers a wide variety of industrial work, illus. with stunning period photos by H.H. Bennett.

David F. Noble, FORCES OF PRODUCTION: A SOCIAL HISTORY OF INDUSTRIAL AUTOMATION. Oxford U. Pr. (NY), 1986. 432 pp., illus. $8.95 paper.

ONE HUNDRED YEARS OF PUBLIC WORKS EQUIPMENT: AN ILLUSTRATED HISTORY. Public Works Historical Soc. (1313 E. 60th St., Chicago, IL 60637), 1986. 70 illus. $6.95. Ppd. Development of the technology used to create and maintain the public works infrastructure: sweepers, graders, pavers, compactors, snowplows, &c, &c. With introductory text. (Many other publs. of the PWHS are available; request list.)

James M. Reilly, CARE & IDENTIFICATION OF 19th-CENTURY PHOTOGRAPHIC PRINTS. Rochester Inst. of Technology (Image Permanence Inst., RIT City Center, 50 W. Main St., Rochester, NY 14614), 1986. 128 pp., 198 illus + wall chart identifying photographic and photomechanical prints. Covers history of photographic printing and identification of photographic and photomechanical processes; preservation and collection management; storage, handling, display, and care. $24.95; extra charts @ $5. Add $1.50 handling per *order* and $.50 postage per *book*. (This is a scheme to test your alertness.)

Richard Guy Wilson, Dianne H. Pilgrim, & Dickran Tashjian, THE MACHINE AGE IN AMERICA, 1918-1941. Urban Center Books (457 Madison Ave., NY 10022), 1986. 376 pp., 410 illus, 55 in color. $37.50. Catalog of Brooklyn Museum exhibition.

TRANSPORT

Derek H. Aldcroft & Michael J. Freeman (eds.), TRANSPORT IN THE INDUSTRIAL REVOLUTION. Manchester U. Pr. (Manchester, U.K.; avail. in US: MUP, 51 Washington St., Dover, NH 03820), 1983. 227 pp., illus. $23.50. A good, broad series of essays collectively observing that the general improvement of transportation during the IR was the result not of major breakthroughs but of a steadily improving efficiency and a series of incremental innovations. Rev.: *Technology & Culture*, July 1986, pp. 623-24.

Christopher Andreae (SIA), RAILWAYS OF LAMBTON COUNTY. Sarnia Public Library & Art Gallery (Sarnia, Ontario), 1986. Produced in conjunction with the exhibition: *Railroading: 150 Years*. (July-Aug. 1986.) The history of Canada's railways in and around Lambton Co.: The Great Western; Grand Trunk; Pere Marquette; and Chesapeake & Ohio.

Published by the Society for Industrial Archeology Editor: Robert M. Frame III
Room 5020 National Museum of American History Washington, DC 20560

Le Roy Bennett, RAILROADS IN MICHIGAN: A CATALOG OF PRIMARY PUBLICATIONS, 1836-1980. Northern Michigan U. Pr. (The Bookstore, NMU, Marquette, MI 49855), 1986. 180 pp., map of the RRs. Over 2100 entries, each with a bibliographic description. Covers all RRs in the state from industrial switchers to interurbans to trunk lines. First of its kind for Michigan.

R.E.G. Davies, AIRLINES OF LATIN AMERICA SINCE 1919. Smithsonian Inst. Pr. (Washington, DC 20560), 1984. 698 pp. $47.50. Narrative history with tables, maps, & photos; chronological survey of major countries and regions. Rev.: *Business History Review,* Summer 1985.

DEATH OF A GREAT COMPANY. Center for Canal History & Technology (Box 877, Easton, PA 17044). $11. Ppd. History of the Lehigh Coal & Navigation Co., formed in 1820 and one of the oldest in the US., up to 1969. Canals, coal, and railroads.

Charles Hadfield, WORLD CANALS: INLAND NAVIGATION PAST AND PRESENT. David & Charles (N. Pomfret, Vt.), 1986. 432 pp. About $35. Apparently the ultimate record of all canals, all places, all times.

B.P. Hindle, ROADS AND TRACK WAYS OF THE LAKE DISTRICT. Moorland Publ. (Ashbourne, Derbys, UK), 1984. 187 pp. £7.95 (paper). Popular history of British road system from Roman times to the turnpikes. Maps & photos. Rev.: *The Journal of Transport History,* March, 1986.

Russell S. Kirby, NINETEENTH-CENTURY PATTERNS OF RAILROAD DEVELOPMENT ON THE GREAT PLAINS. In *The Great Plains Quarterly,* Summer, 1983. Corporate RR decision making and the growth of four major RR systems, from their origins to 1915.

Arthur J. Kuhn, GM PASSES FORD, 1918-1939: DESIGNING THE GENERAL MOTORS PERFORMANCE-CONTROL SYSTEM. Penna. State U. Pr. (215 Wagner Bldg., University Park, PA 16802), 1986. 464 pp. $29.75. How GM moved ahead of Ford; the team idea of GM vs the individuality of Ford.

Robert Leggett, RIDEAU WATERWAY, 2nd EDN. U. of Toronto Pr. (63-A St. George St., Toronto M5S 1A6), 1986. 312 pp., illus. $30/13.95. The original 1955 edn. completely revised and updated with many new photos. Still the definitive work on the construction and subsequent history of Canada's principal towpath canal, and one of the best works in canal literature in general.

Thomas G. Marx, THE DEVELOPMENT OF THE FRANCHISE DISTRIBUTION SYSTEM IN THE U.S. AUTOMOBILE INDUSTRY. In *Business History Rev.,* Autumn 1985, pp. 465-74. The development of franchised dealerships and relations between manufacturer and sales force that led to predominance of independent dealer franchise.

Brian S. Osborne & Donald Swainson, THE SAULT STE. MARIE CANAL. Canadian Govt. Publ. Centre (Supply & Services Canada, Hull, PQ K1A OS9), 1986. 148 pp. $7.50 Canadian; $9. other. Thorough account of the Canadian Soo, from its opening in 1895 to its acquisition by Parks Canada in 1979.

William E. Trout III (SIA), A GUIDE TO THE WORKS OF THE JAMES RIVER & KANAWHA COMPANY FROM THE CITY OF RICHMOND TO THE OHIO RIVER. Virginia Canals & Navigations Soc. (c/o Richard A. David, Rt. 2, Box 254, Lexington, VA 24450), 1986. 36 pp. $2.50. Maps, historical data, and a complete tour guide to the canal, river improvements, and connecting turnpikes.

James A. Ward, RAILROADS & THE CHARACTER OF AMERICA, 1820-1887. U. of Tennessee Pr. (Box 6525, Ithaca, NY 14850)(Sic), 1986. 216 pp., 32 illus. $15.95. The RR in context, a matephor for the expanding nation, connected by Ward to literary and illustrative references to the iron horse.

MISC. INDUSTRIES

John F. Bauman, ORWELL'S WIGAN PIER AND DAISYTOWN: THE MINE TOWN AS A STRANDED LANDSCAPE. In *The Western Pennsylvania Historical Magazine,* April 1984. Coal towns depicted as grim landscape portraying misery and oppression.

John Bowditch (SIA), ARMINGTON & SIMS: IN PROVIDENCE, R.I., AND GREENFIELD VILLAGE, DEARBORN, MICH. In *The Herald,* Vol. 12, No. 3 (1984), quarterly of the Henry Ford Museum & Greenfield Village (Dearborn 48121). The checkered history of A&S, builders of steam engines, especially for driving generators, cal880-1900. A non-replica of their machine shop & foundry now runs, under steam, at the Village.

David L. Carlton, MILL & TOWN IN SOUTH CAROLINA, 1880-1920. Louisiana State U. Pr. (Baton Rouge), 1982. The Southern textile industry began in the 1880s, expanded greatly 1895-1905, and grew more slowly thereafter. A well-written study including the social implications. Rev.: *The American Historical Review,* February 1984.

David P. Demarest & Eugene D. Levy, A RELICT INDUSTRIAL LANDSCAPE: PITTSBURGH'S COKE REGION. In *Landscape,* 29:2 (1986), pp. 29-36. An eloquent plea to recognize industrial landscapes, in this case the coke region of Western Penna. Great photographs and a good map.

Ernest C. Miller, THE HISTORY & DEVELOPMENT OF THE PETROLEUM INDUSTRY IN WARREN COUNTY, PENNSYLVANIA. Warren Co. Hist. Soc. (Warren, PA), 1983. $10. Rev.: *Western Pennsylvania Historical Magazine,* April 1984.

Michael Nash, John Rumm & Craig Orr, PENNSYLVANIA POWER & LIGHT CO.: A GUIDE TO THE RECORDS. Hagley Museum & Library (Box 3630, Wilmington, DE 19807), 1986. 226 pp. $10. Guide to the records of the firm that was successor to over 1000 others, absorbed 1880-1955: gas, arc, & incandescent lighting; power; district steam service; water supply; coal; &c. The entire context of electric power & supply: the business and technology; the engineers and entrepreneurs. The collection is a unique and staggering resource and here is its key. Up to the traditional Hagley standard.

David E. Nye, IMAGE WORLDS: CORPORATE IDENTIES AT GENERAL ELECTRIC, 1890-1930. MIT Pr. (Cambridge, MA), 1985. 188 pp., illus. $20. Corporate ideology at GE growing out of the author's research in the co. photo archive of 1,000,000 images! He identifies four main audiences for these: engineers, managers, workers, and consumers, reached primarily through publications. Provocative statement about corporate communications. Rev.: *Business Hist. Rev.,* Summer '86.

PEN RULING: A VANISHING INDUSTRIAL CRAFT. Mirror Productions (335 Greenwich St,#7-B, NY, 10013). Video cassette, VHS or Beta, $52.; 3/4-inch, $77. The preparation and process of pen ruling ledger paper on a Hickok (Harrisburg, Pa.) pen-ruling machine. Small, multi-colored jobs still are more cost-effectively run on a ruling machine than by offset. This shows one of the few surviving operators at work, using the system of individual brass pens fed by cotton wicks, to mark the sheets with lines of appropriate colors running on two axes. Dramatic, in its way.

Barbara R. Robertson (SIA), SAWPOWER: MAKING LUMBER IN THE SAWMILLS OF NOVA SCOTIA. Nova Scotia Museum (avail.: NS Govt. Bookstore, Box 637, Halifax, NS B3J 2T3, Canada), 1986. $20.75.

L.T.C. Rolt, TOOLS FOR THE JOB (Rev. edn.). HMSO (C/o Bernan Assoc., 10033-F Martin Luther King Hwy., Lanham, MD 20706), 1986. 274 pp. $17.50. First publ. 1965; long OP, this first-rate study is a concise history of machine tools from their early beginnings to the mid-20th C. Largely British viewpoint.

Philip B. Scranton (SIA), PHILADELPHIA SYSTEM OF TEXTILE MANUFACTURE, 1884-1984. Phila. College of Textiles & Science (Paley Design Center, 4200 Henry Ave., Phila., PA 19144), 1984. 60 pp., illus. $6.Ppd. Catalog of an exhibition celebrating the college's centennial. Historical account of the city's textile industry, stressing its flexible approach to small markets and its contrast with New England's mass-production pattern. Many photos of machinery, mills, workers.

David R. Starbuck (SIA), THE NEW ENGLAND GLASSWORKS: NEW HAMPSHIRE'S BOLDEST EXPERIMENT IN EARLY GLASSMAKING. (Special issue of *The New Hampshire Archeologist,* Vol 27, No. 1), 1986. N.H. Archeological Soc. (C/o Donald W. Foster, Phillips Exeter Academy, Exeter, NH 03833). 148 pp., 60 figs. $16.50 Ppd. The first glassworks in northern N.E., Temple, N.H., 1780-82. The result of four years of site investigation and extensive lab analysis of the artifacts. A major contribution to the field.

Graham D, Taylor & Patricia E. Sudnik, DU PONT & THE INTERNATIONAL CHEMICAL INDUSTRY. Tyawne Publs. (Boston), 1984. 251 pp., $18.95. A general history of the firm rather than an account of their international activities, actually, and not a wonderful one at that, says the reviewer (*Technology & Culture,* July 1986), flawed principally as unable to draw upon the firm's own primary sources; nonetheless worth having.

John Thompson, THE BAY CITY LAND DREDGE & DREDGE WORKS: PERSPECTIVES ON THE MACHINES OF LAND DRAINAGE. In *Michigan Histor-*

ical Review, Vol. 12 (Fall, 1986), pp. 21-43. (Central Mich. Univ., Mt. Pleasant 48859). A series of floating and dry-land excavators, used mainly in land drainage, in the Midwest, from the 1880s to the 1920s. They were power shovels but of lighter construction and longer reach than the conventional construction shovel, and IC rather than steam powered.

George Wise, WILLIS R. WHITNEY, GENERAL ELECTRIC, AND THE ORIGINS OF U.S. INDUSTRIAL RESEARCH. Columbia U. Pr. (NY), 1985.

STRUCTURE & MATERIALS

Martin P. Burke, Jr., BRIDGE AESTHETICS BIBLIOGRAPHY. Burgess & Niple, Ltd. (Engineers & Architects; 5085 Reed Rd., Columbus, OH 43220.), 1987. 44 pp., gratis. About 250 citations, 1893-1986. An important, unique contribution to bridge history. "All significant books & papers in English . . . readily available at local libraries or through inter-library loan." Peppered with quotes from the cited works, led off by Russell Sturgess's 1900 comment: "Instead of concentrating their attention upon the question whether their works would stand, they should direct some of it to the question whether they are fit to stand."

Jack Chard (SIA), MAKING IRON & STEEL--THE HISTORIC PROCESSES: 1700-1900. Roebling Chapter, SIA (203 W. Burlington St., Bordentown, NJ 08505), 1986. 18 pp., illus. It's easy to make the case that the Industrial Revolution was based solely on the ferrous metals. Here in plain language, in convenient scope, is described all of the fundamental of these--cast & wrought iron, and steel, and their variants--in metallurgical terms, and more important, the various means of their production. Good illus. of the principal types of furnaces. Altogether a major & vital resource for the IAist.

E.E. Frank, EVOLUTION OF THE RAIL-BOUND MANGANESE FROG. In *Transportation Research Record 1071* (Transportation Research Board, 2101 Constitution Ave., Washington, DC 20418), 1986. The introduction of manganese steel into the manufacture of RR-switch frogs late in the 19thC, its hardness greatly increasing operating life. The evolution continues to the present day.

Charles K. Hyde (SIA), THE NORTHERN LIGHTS: LIGHTHOUSES OF THE UPPER GREAT LAKES. Two Peninsula Pr. (Box 30034, Lansing, MI 48909). $27.95. Current color + historical photos. Lavish account of the lights and those who manned them.

NEW STRUCTURAL TECHNOLOGIES. Office of Technology Assessment, Congress of the US (From USGPO, Dept SSMC, Washington, DC 20402), 1986. 84 pp. $3.75 Ppd (Payment by VISA or MC OK.) Stock No. 052-003-01044-5. The new non-metallic materials of the past 25 years: ceramics, polymer-matrix composites, &c. Look, it's the IA of tomorrow, after all . . .

R.D. Penhalluric, TIN IN ANTIQUITY. Institute of Metals (N. American Publs. Center, Old Post Rd., Brookfield, VT 05036), 1986. 272 pp., illus. $48. The definitive history of tin's extraction, metallurgy, and trade: Africa & Asia; European Continent; SW England & vicinity. (A complete IOM booklist is available.)

Ivars Peterson, THE FIRST SKYSCRAPER. In *Science News*, Vol. 29 (1986), pp. 218-19. Yes, there remains an element of controversy on the point. Depends, of course, on what you believe in your heart *is* a skyscraper.

Marilyn K. Shannon & David Simmons (SIA), THE BRIDGES OF CARILLON PARK. Carillon Historical Park (2001 S. Patterson Blvd., Dayton, OH 45409), 1986. 28 pp., illus. Fine booklet on the two 19th-C bridges preserved in the Park--one timber; the other an iron truss; their historical meaning, antecedents, structural philosophy, paternity, and resurrection.

H.S. Torrens, MEN OF IRON: THE HISTORY OF THE MCARTHUR GROUP. The McArthur Group, Ltd. (Foundry La., Deep Pit Rd., Speedwell, Bristol BS5 7UE, England), 1984. 76 pp., 30 illus. The McArthur family, 19th-C industrial entrepreneurs, whose iron stockholding trade grew and diversified throughout the U.K.

SOCIAL & LABOR HISTORY

Lucie Cheng & Edna Bonacich (eds.), LABOR IMMIGRATION UNDER CAPITALISM: ASIAN WORKERS IN THE UNITED STATES BEFORE WORLD WAR II. U. of California Pr. (Berkely, L.A., & London), 1984. $34.50 cloth. 634 pp. ISBN 0520 048296. Rev.: *Journal of American Studies*, Apr. 1986. Culmination of 5 years' research at Asian American Studies Center at UCLA. 16 essays divided into 3 sections: the demand for inexpensive Asian labor in California & Hawaii; the effect of imperialism on 5 Asian societies & resulting destabilization of their economies & emigration; the experience of Asian immigrants in California & Hawaii before WW II.

Foster Rhea Dulles & Melvyn Dubofsky, LABOR IN AMERICA: A HISTORY. 4th Ed. Harlan Davidson, Inc. (Arl. Hts, IL), 1984. 425 pp. $29.95/$15.95. Rev.: *New York History*, Jan. 1986. Dulles's history, first published in 1949 and last revised in 1966, is updated by Dubofsky. Additional chapters and new emphases such as: women in the labor force, ethnics, technology, and labor & culture.

Philip S. Foner & Reinhard Schultz, THE OTHER AMERICA: ART AND THE LABOUR MOVEMENT IN THE UNITED STATES. Journeyman Pr. (17 Old Mill Rd, West Nyack, NY 10994), 1985. $14.95, 176 pp., illus. English condensation of *Das Andere Amerika* (NGBK Pub., Berlin), 1983. 554 pp., 1,000 illus. A compilation of renderings in all media of workers, industrial and otherwise, from 1776 onward. Many common, many more rarely seen, especially 20th-C industrial photos. Includes a half-dozen essays on union art, the artist as social activist, the rise of proletarian art, etc. Citation of image sources uniformally poor, but good quality reproductions.

George N. Green, LABOR IN THE WESTERN OIL INDUSTRY. In *Journal of the West*, Apr. 1986. pp. 14-19. History of unions & labor conditions from Gulf Coast to Calif. since 1900.

Charles K. Hyde (SIA), UNDERCOVER & UNDERGROUND: LABOR SPIES & MINE MANAGEMENT IN THE EARLY 20th CENTURY. In *Business Hist. Rev.*, Spring 1986, pp. 1-26. Concludes that the spies employed by the Quincy copper mine management provided little useful labor-organization intelligence but did, inadvertantly, supply data on underground working conditions and the performance of foremen. Weird pathways, underground.

Michael J. McDonald & John Muldowny, TVA AND THE DISPOSSESSED: THE RESETTLEMENT OF POPULATION IN THE NORRIS DAM AREA. U. of Tennessee Pr. (Knoxville, 37996-0325), 1985. 352 pp., Illus. $29.75. An analysis of TVA's social experiment in modernization at the grass-roots level by using population removal in the Norris Basin as a test case.

Carl Oblinger, CORNWALL: THE PEOPLE AND CULTURE OF AN INDUSTRIAL CAMELOT, 1890-1980. Penna. Historical & Museum Commn. (Harrisburg), 1984. 120 pp., illus. $3.50. History of the several company hamlets surrounding the celebrated Cornwall iron mines and furnaces in SE Penna., based on oral histories. Rev. by Edward Rutsch (SIA), in *IA*, Vol. 12, 1986.

Judith O'Sullivan & Rosemary Gallick, WORKERS & ALLIES: FEMALE PARTICIPATION IN THE AMERICAN TRADE UNION MOVEMENT, 1824-1976. Smithsonian Institution Traveling Exhibition Service (Washington), 1975. 96 pp., 64 b/w photos. Accompanied a SITES show but a worthy publication in its own right. Chronology of events and biographies of over 100 women. SPECIAL: Remaindered & avail. from Room 5020 @2.00. Limited quantity.

Robert W. Ozanne, THE LABOR MOVEMENT IN WISCONSIN: A HISTORY. State Historical Soc. of Wisc. (Madison), 1984. 277. pp. $20. Principally the lumber and paper industries; little, apparently, on the machinery builders and brewers of Milwaukee. Rev.: *Business Hist. Rev.*, Winter 1985.

Allan Kent Powell, LABOR'S FIGHT FOR RECOGNITION IN THE WESTERN COAL FIELDS. In *Journal of the West*, Apr. 1986, pp. 20-26. Union history since the 1880s.

Elizabeth Reis, CANNERY ROW: THE AFL, THE IWW AND BAY AREA CANNERY WORKERS. In *California History*, Summer 1985, pp. 174-191. Italian cannery workers and unions in the early 20th C.

William G. Robbins, LABOR IN THE PACIFIC SLOPE TIMBER INDUSTRY: A TWENTIETH-CENTURY PERSPECTIVE. In *Journal of the West*, Apr. 1986, pp. 8-13. Working conditions in lumber camps are described in detail.

W. J. Rorabaugh, THE CRAFT APPRENTICE, FROM FRANKLIN TO THE MACHINE AGE. Oxford Pr., 1986. 288 pp., 25 illus., $24.95. The apprenticeship system as a means of learning and passing on the skills of the craftsman and mechanic. The system

underwent an upheaval as the Colonial period gave way to the Industrial Revolution and the machine began to replace the skilled worker. All treated here, with case histories.

James A. Schmiechen, SWEATED INDUSTRIES AND SWEATED LABOR: THE LONDON CLOTHING TRADES, 1860-1914. (The Working Class in European History.) U. of Illinois Pr. (Urbana), 1984. 209 pp. $23.95. Rev.: *The American Historical Review*, Feb. 1985. Growth of a relationship between factory and nonfactory production, including a study of women and Jewish immigrants as important aspects in nonfactory labor force. 2nd part of book: role of trade unions & the state in effort to end sweating.

William Serrin, WORKING FOR THE UNION: AN INTERVIEW WITH DOUGLAS A. FRASER. In *American Heritage*, Feb/Mar 1985. Extensive interview with the president of UAW, concerning his life & unions.

Martha Jane Soltow & Susan Grovelle, WORKER BENEFITS INDUSTRIAL WELFARE IN AMERICA 1900-1935. AN ANNOTATED BIBLIOGRAPHY. The Scarecrow Pr. (Metuchen, NJ), 1983. 230 pp. $16.50. Rev.: *Business Hist. Rev.*, Winter 1985. The annotations, which cover the period of welfare capitalism, are concise and informative.

Lynn Y. Weiner, FROM WORKING GIRL TO WORKING MOTHER: THE FEMALE LABOR FORCE IN THE UNITED STATES, 1820-1980. U. of North Carolina Pr., 1985. 187 pp. $17.95. Rev.: *Labor History*, Win. 1985-6. Analysis of supply and demand of women workers and changing concepts of women's roles. Valuable survey of primary social effects of women entering the labor force. Bibliography useful because of listing of government documents on this subject.

W. Thomas White, RAILROAD LABOR RELATIONS IN THE GREAT WAR AND AFTER, 1917-1921. In *Journal of the West*, Apr. 1986, pp. 36-43. For the majority of the RR workforce this was a period of unrest which climaxed in the Shopmen's Strike of 1922.

BIBLIOGRAPHIC NOTES

WE WOULD AGAIN REMIND OUR READERS that these citations turn up from a great variety of sources, ranging from word-of-mouth to copies of the works themselves in hand. Frequently the information is brief, sometimes incomplete. If a date, publisher, place of publication, price, or other vital statistic is missing, it means simply that we hadn't it available. Nor have we time, we regret, to track down these missing bits, so if you require them, you and your librarian are on your own. We would point out also that the SIA is not a source for any of the cited works unless explicitly so stated. We receive the odd order for a noted book or article, which we would rather not as we cannot furnish it. Again, your librarian--school, firm, or municipal--should be able to help. With thanks.

Oh yes . . . and *don't forget* to let us know of your own published things or those of pertinence you might have seen that we probably haven't. RMV, Rm 5020.

BORES & STROKES. Vol. 1 No. 1 (Sept. 1986) of this has appeared--the official organ of the Coolspring Power Museum (Box 19, Coolspring, PA 15730), the largest in the nation devoted exclusively to the preservation of the internal combustion engine. This issue describes the museum and its goals and discusses at length an engine peculiar to the Oil Regions: the half-breed, which started life as a steam engine and in the service of the driller or pumper went through a sex change that made of it a gas or oil engine, with either the original, changed, cylinder or a new one. Appart from all this, the collection is large and interesting with some early and important pieces.

CONSTRUCTION HISTORY--Vol. 2, 1986. Journal of the Construction History Society (c/o The Chartered Institute of Building, Englemere, Kings Ride, Ascot, Berks SL5 8BJ, UK). The 2nd issue of this fine and substantial journal. Articles on the construction history of Venice during the Renaissance; early carpenters' manuals, sources of the construction history of WW II, &c. Good reviews with international orientation. £6 per issue to non-members.

TIMBER TRANSFER. Quarterly publication of the Friends of the East Broad Top (RR), Inc., a non-profit society dedicated to the preservation & restoration of the legendary narrow gauge in Huntingdon Co., Pa, that has survived to the present despite having been defunct since 1956. It is so remarkably preserved an example of 19th-C RRing--complete with motive power, rolling stock, and repair shops-- that it has been declared a National Historic Landmark. TT runs about 20 pp. featuring news and history of the EBT and the modelling thereof. Annual dues (including TT & a monthly newsletter): $15. Other membership information: Richard A. Moore, 736 Shaw Ave., Lansdale, PA 19446.

EQUIPMENT ECHOES: Newsletter of the newly formed Historical Construction Equipment Assn. (485 Hillside Drive, Canfield, OH 44406). Publ. quarterly. HCEA (no, you can't say it) fosters the preservation of the history of all types of construction, surface-mining, and dredging equipment. Dues, which include the Newsletter, are $10. (US) in N. America; $14. elsewhere. If you're interested in underground mine locomotives, don't apply.

THE HISTORICAL TECHNOLOGIST--BULLETIN NO. 4 (March 1986). (The Niagara Soc. for Industrial History, 776 Willinger St., Niagara Falls, Ont. L2J 2B3. (416) 356-8511.) $6. US. Better than ever, this exceedingly interesting journal--only one we know of concerned explicitly and lucidly with the nuts-&-bolts of H.T. This issue: International Ry Co's. generating station at Niagara, 1892; Standing Rigging--its nomenclature. In 2 new depts. the theory of the hydraulic turbine is discussed and notes on the arc lamp and the RR semaphore. All good, thoughtful, and above all, interesting stuff. Must be seen.

MAINLINE MODELER. Heavily illustrated magazine devoted to the modeling of RR rolling stock but with a good bit on trackside structures and the technology of railroading in general. Well gotten-up. Monthly @ $28/ year US; Canada & overseas $34/ year. Hundman Publ., 5115 Monticello Drive, Edmonds, WA 98020.

PACIFIC RAIL NEWS. Slick, professional, informative journal covering all aspects of rail travel west of the Rockies: mainline, interurbans, street cars; past and present. First-rate content and production. Monthly @$25./ year US. Interurban Pr., 1212 South Brand Blvd., Glendale, CA 91204.

ASSN. OF RAILWAY MUSEUMS REPRINTS. A number of facsimile reprints of electric ry. technical bulletins & articles, + ARM's own listings of rolling stock at RR museums in the US & Canada, are available. Listing from ARM, c/o Brian Norden, Box 3311, City of Industry (!), CA 91744-0311.

RAILROAD REPRINTS from the Division of Transportation, NMAH, Rm. 5010, Washington, DC 20560. Fourteen avail., from various journals 1968-83, on locomotive builders, museum collections, and related topics. Write for listing.

STEMGAS PUBLISHING CO. CATALOG. (Box 328, Lancaster, PA 17063). Fifteen pages of titles on steam and gas engines, tractors, farm machinery and equipment. Many are 19th-C reprints, including trade catalogs. Every March SPC publishes an annual directory of steam and gas engine shows, reunions, thresherees, and like happenings.

UNESCO-ICOMOS BIBLIOGRAPHIES available from ICOMOS Documentation Center, 75 rue du Temple, 75003 Paris. All Postpaid.

Architectural Photogrammetry,	38 pp.	$7.
Conservation of Stone,	128 pp.	$18.
Conservation of Wood,	64 pp.	$10.
Industrial Architecture,	86 pp.	$12.

TECH NOTES by the ASSOCIATION FOR PRESERVATION TECHNOLOGY now are available as back issues of the *APT Bulletin* @ $13. the full set. APT International, Box 2487 Stn. D, Ottawa, ONT K1P 5W6. (Write for individual prices.)

TN-1: The use of templates in recording historic structures--the McKinlay House, West Flamborough, Ontario.

TN-2: Repair of a papered plaster wall at the Barnum House, Grafton, Ontario: a practical guide and report on the use of the Morgan Phillips plaster repair method.

TN-3: Specification requirements for proposed window replacement in historic buildings for property owners seeking federal tax credits.

TN-4: Aluminum window replacement in historic buildings, for property owners seeking federal tax benefits.

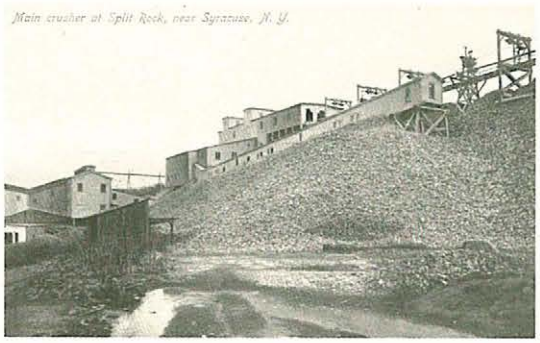
TN-5: Repointing: an annotated master specification for the repointing of historic masonry.

TN-6: Graffiti: an introduction with examples.

TN-7: Reproducing wood mouldings.

TN-8: The use of pneumatic tools in pointing historic masonry.

WHITHER SOLVAY QUARRY?



SPLIT ROCK QUARRY. *Left:* 1909 postcard view of the crusher complex. *Near right:* Ruins of the TNT building. *Far right:* Remaining foundation of the crusher. *Syracuse-Onondaga Co. Planning Agency photographs (1979).*

Demolition is under consideration for the few remaining structures at the Split Rock, N.Y. quarry of the Solvay Process Co. The quarry is significant in the history of the Solvay Co.; but, to date, there has been virtually no IA work on the site, nor has there been any progress in assessing the Nat'l Register significance of the site for its importance in the quarrying or explosives industry. The current owner is New York State which, in 1983, closed and officially abandoned the property for sale as surplus. Since then there has been vandalism and deterioration.

The Solvay and Split Rock story began in Feb. 1879 when William B. Cogswell, a mining engineer from Oswego, N.Y., was invited to a meeting where a paper on the Solvay Process was to be read. As the details came forth, he realized that the three raw materials — limestone, salt, and coal — were available in nearly unlimited quantities at Syracuse, N.Y. Salt alone had already made the area famous. Limestone was cheap, and coal, for the production of ammonia, could be had by rail from nearby coal fields in Pennsylvania.

The Solvay Process (more appropriately the Ammonia-Soda Process) is the only way that the alkali sodium carbonate (soda ash) can be produced synthetically in practical and marketable quantities. Sodium carbonate is used in the manufacture of glass, paper, and textiles. Limestone (calcium carbonate) is burned together with coke (from the coal) to form carbon dioxide gas and calcium oxide.

Ammonia gas, a coke by-product, is passed through saturated salt brine to form ammonium hydroxide. The carbon dioxide is passed through this solution, known as ammoniated brine, to form ammonium bicarbonate which, in the presence of salt, changes to ammonium chloride and sodium bicarbonate. The latter is heated to drive off the carbon dioxide and water, thus producing the sought-after soda ash or synthetic sodium carbonate. The ammonia is recovered in the process and additional products, such as calcium chloride and sodium hydroxide, are manufactured.

The Solvay Process seemed feasible to Cogswell, who took the idea to his employer, Rowland Hazard, a wealthy mine owner from New England, had hired Cogswell to look after his mining interests in Missouri. The two quickly formed a friendship which was to last their lives and have a tremendous impact on the American chemical industry.

With Hazard's financial backing and letters of reference, Cogswell went to Belgium to try to interest the Solvay brothers in an American venture. After some hesitation, they agreed and the Solvay Process Co. was born. Since that time the plant has been in continuous operation until this year, when it was closed by the Allied Chemical Corp. (Solvay Process, along with several other large chemical companies, formed the Allied Chemical & Dye Corp. in 1921). For its entire life, it was the largest synthetic alkali plant in America and, for many years, the largest in the world.

Limestone, a principal ingredient, was purchased from various quarries on a contract basis until 1889, when the company was compelled to buy the quarries. Private contractors, constantly trying to outbid and undersell each other, simply could not produce enough stone. Thus the Solvay Process Co. came to purchase quarries in Split Rock, N.Y., which had been in operation since the early 19th C. Stone for the Erie and Oswego canals came from Split Rock.

From 1889 to 1902, the quarries were worked essentially by hand, the only concession to progress being steam drills. The rock was broken to size in place and hand-loaded onto carts for the trip to Solvay, some 10 miles away. In 1903, to supply ever-growing needs, a crushing plant — one of the largest in the world — was added. With a capacity of 500 tons per shift, the twin No. 8 Austin Crushers were powered by a single Straight Line steam engine supplied by three Cahill boilers.

Stone was brought in from the quarries on bucket lines. The buckets were pulled through an iron track and emptied into the crusher's mouth. After crushing, the stone was graded by 34-ft. revolving iron cylinders set at a 15-deg. angle, perforated their entire length with increasingly larger holes.

By 1911, more quarry facilities were needed. Furthermore, the supply of process-grade stone was dwindling. Solvay decided to move the entire quarry operation to Jamesville, which had begun serving the Allied chemical facilities. Split Rock's quarries were to be abandoned but remain in Solvay's ownership.

In 1915, with World War I, the manufacture of high explosives was begun at the site. The Semet-Solvay Co., formed in 1895 in Belgium to produce ammonia, coke, and other coal by-products using the Semet By-Product Coke Oven (invented by Louis Semet, brother-in-law of the Solvays), received a million-dollar contract to manufacture TNT (trinitrotoluene). Realizing that the material could not be made safely in huge quantities at the main plant, which bordered several populated areas, a better location was sought. Split Rock was chosen because it still was owned by the Solvay interests, and because it was so isolated. It became the Split Rock Munitions Works and produced some 25% of U.S. high explosives used in World War I.

A 1918 fire and explosion cost 52 lives, but could have been horribly worse had not the fire been kept from some one-and-a-half million pounds of explosives stored nearby. Though picric acid and ammonium picrate manufacture continued until the Armistice, the tragedy ended TNT production and the Split Rock Munitions Works closed on Dec. 31, 1918.

In 1921, N.Y. State bought the site from the fledgling Allied Chemical & Dye Corp. for a Dept. of Public Works facility. Some buildings were refurbished while others were razed. Weeds grew in unneeded quarry areas, while chemical plant foundations and ruins remained. Today the property is totally neglected and surviving IA may be lost. *M.W.D.*

[Mark W. DeLawyer is the author of "Recounting the History of Split Rock," Society of Mining Engineers of AIME Transactions *34(1982):1566-69, and can supply addn'l Solvay & Split Rock bibliography: MWD, Box 2107, 550 S. Clinton St., Syracuse NY 13202 (315-422-3772). Ed.]*

SPLIT ROCK LINESHAFTS AVAILABLE. A complete overhead machine-shop line shaft (over 100 ft.; c1918), is available free to any museum or group from the N.Y. Dept. of Trans. The shaft is complete with a variety of pulleys, couplings, hangers, and other hardware. Must be disassembled and shipped at new owner's expense. If interested, contact Gordon DeAngelo, NYS Archaeological Assn., P.O. Box 121, Oran NY 13125 (H: 315-682-6312, O: 315-428-4336).

NOTES & QUERIES

"CORROSION OF ARTISTIC WORKS & HISTORIC STRUCTURES" is an intensive seminar on the causes and effects of corrosion and the pratical procedures for protecting building components, architectural ornamentation, statues, metal decorative arts, and archeological bronzes. Scheduled for April 25-26, 1987, at the Mass. Inst. of Technology, Cambridge, Mass., the two-day seminar is sponsored by *Technology & Conservation* and the MIT Museum.

The seminar will provide a broad overview of the basics of corrosion and the corrosion-induced deterioration problems of metals and alloys commonly used in the fabrication of artworks and in the construction of buildings and structures, including bronzes, brasses, lead, zinc, and iron alloys, as well as metals embedded in concrete and in marble. In-depth discussions of suitable methods for conserving the building fabric, metal decorative elements, and sculptures utilizing these materials well be presented, exploring such areas as the advisability of using substitute materials such as fiberglass, plastics, and more corrosion-resistant alloys. Recent research on the effects of air pollution on various protective coatings also will be covered. Case studies and a tour of outdoor sculpture are included.

Lecturers are recognized authorities in the fields of materials science, corrosion engineering, civil engineering, historic restoration, and art conservation. The keynote speaker is Ronald M. Latanision, director, The H.H. Uhlig Corrosion Lab., MIT. Registration is $175 ($150 before Feb. 28) and includes materials, two luncheons, and a reception. Info.: T&C, One Emerson Place, Boston MA 02114 (617-227-8581), or Marcia Conroy, MIT Museum, Cambridge MA 02139 (617-253-4444).

PITTSBURGH MUSEUM IDEA CREEPS AHEAD. In Aug., the Historical Society of Western Pa. and the Committee on Pittsburgh Archeology & History (CPAH) announced a $21,000 comprehensive joint study to determine the feasibility of a new history center that would include the industrial history of the Pittsburgh region. The study, according to the *Pgh. Post-Gazette*, will determine the need for housing and preserving archival materials, and will examine the potential for educational programs and new publications. The study also will assess financial resources for funding, along with site and space requirements. Funding for the study will be shared by CPAH, HSWP, and the Pa. Historical & Museum Commission. The study follows the publication by CPAH of an earlier concept paper which spelled out the functions of the proposed center. A year ago the museum proposal was sketched in a special "Industrial History Issue" of *Archival, Museum & Editing Studies News* [see *SIAN* 14(3):7]. Info.: CPAH, POB 7252, Pittsburgh PA 15213.

G.D.

PITTSBURGH ENGINEERING DRAWINGS. The Pittsburgh History & Landmarks Foundation has received 1,090 drawings from the office of Pgh. engineer Samuel Diecher, according to Archivist Walter C. Kidney [SIA]. Almost all of these are ink on linen, dated between 1889 and 1930. Diescher is identified mainly with incline constructions. Included are designs for or modifications to the Duquesne Hts., Monongahela, Castle Shannon, Castle Shannon No. 2, St. Clair, Nunnery Hill, and Penn inclines in Pgh., along with inclines in Wheeling, W.Va.; Duluth, Minn.; Johnstown, Pa.; Orange, N.J.; and Montreal. In addition, there are detail drawings for an early 1890s Ferris wheel, open-hearth furnaces, seamless-tube machinery, coal-handling and tin-plating facilities, airport plans, and other machines and structures. Info.: PH&LF, 250 The Landmarks Bldg., 1 Station Sq., Pgh. PA 15219 (412-471-5808).

6TH ANNUAL CANAL HISTORY & TECHNOLOGY SYMPOSIUM will be Sat., Mar. 28, on the Lafayette College campus, Easton, Pa. It is cosponsored by the Center for Canal History & Technology of the Hugh Moore Historical Park & Museums, Inc., and the Northeastern Pa. Regional Studies Program of Lafayette College. Full texts of six papers will be published in *Proceedings*, which is included in the registration fee and will be available at the symposium:

"The Wyoming Div. of Pa.'s North Branch Canal" by F. Charles Petrillo (Wyoming Geological Soc.), "The Historical Significance of the Engineering Tracings of the Lehigh Coal & Navigation Co." by Charles Best (Lafayette Coll.), "Gov'ts & Transportation Systems: The Pa. Example" by Albright Zimmerman (Rider Coll.), "Canals in American Business & Economic History: A Review of the Issues" by Spiro Patton (Wiedner Univ.), and "The Restoration of the Roebling Delaware & Hudson Canal Aqueduct" by Sandra Hauptman (Nat'l Park Service).

Registration is $30 and includes papers sessions, *Proceedings*, lunch, coffee & donuts in the morning and a reception at the Canal Museum. Info.: Center for Canal History & Technology, Canal Museum, POB 877, Easton PA 18044 (215-250-6700).

In cooperation with the NPS, the Canal Museum is producing a two-hour process documentary videotape on the restoration of Roebling's **D&H Canal Aqueduct** [HAER] at Lackawaxen, Pa.; [*SIAN* Spring '86:1]. Considered the oldest suspension bridge in N. Am., this 1848 structure is both a Nat'l Historic and a Nat'l Civil Engng Landmark. When completed in 1987, the documentary will be used by the NPS as part of its maintenance program and eventually will be broadcast. *L.E.M.*

ACCESS TO FORD PHOTOS. An $82,438 grant from the Nat'l Endowment for the Humanities is allowing the Henry Ford Museum & Greenfield Village, Dearborn, Mich. (host of 1980 SIA Annual Conf.), to establish a direct visual access system for the photograph collections in the museum's Archival & Library Collections. Included are over 30,000 images from the Ford Motor Co. Photographic Collection, illustrating products, mfg. plants, industrial design, production process, and labor and social history topics, 1900-50. Over the course of the two-year project, photos will be researched, copied, labeled, and filed under subject headings. The now largely staff-serviced and unresearched file will become a self-service file made up of thousands of newly discovered and existing images.

"HISTORIC MINING RESOURCES: Defining the Research Questions for Evaluation & Preservation" is a South Dakota Historical Preservation Center workshop scheduled for April 7 & 8 in Rapid City. Presentations will be in mining history, history of technology, cultural geography, and historical archeology. On April 6, there will be a tour of historic mining sites in the Black Hills. The workshop is open to all public and private cultural-resource managers and contractors. There is *no* registration fee, but space is limited. Info.: SDHPC, Box 417, Vermillion SD 57069 (605-677-5314).

LOWELL CONF. ON INDUSTRIAL HISTORY, The theme of the 8th annual Lowell Conf. on Industrial History is "Immigration, Ethnicity, & the Industrial Revolution." It will meet during the last weekend in Oct. in Lowell, Mass.

The conf. is seeking proposals that address any aspect of immigration history, particularly those that relate to industrial, labor, and urban themes. Sponsors are all keenly interested in organizaing a program that will combine the latest in scholarly research with a discussion of programs designed to serve public audiences (museum & historic site work, community & folklife programs, film & media). The conf. also would like to solicit proposals that examine immigration policy issues, including the relationship between historical scholarship, public perception, and public policy.

The conf. is being planned in conjunction with the opening of the Patrick J. Mogan Cultural Center and its important exhibition on the history of Lowell's working-class, immigrant culture.

Proposals may be submitted for individual papers or full sessions (latter preferred), including up to five presentations. All proposals should include a vita for each participant, a 1-2-page synopsis of each paper, and, if applicable, a description of the session itself. Accepted proposals will be published in the annual conf. proceedings.

The conf. can provide limited travel subsidies for those without institutional affiliations or from institutions unable to pay expenses. Applications for assistance should accompany proposals and include an estimate of travel costs.

Submit proposals by Mar. 31 to Robert Weible, Lowell Nat't Historical Park, 169 Merrimack St., Lowell MA 01852 (617-459-1025).

WANTED

CALLS FOR PAPERS. The Pa. Anthracite Heritage Museum requests suggestions for papers for a conference on **"Women at Work: Life of the Anthracite Woman, 1850-1950,"** to be held in Nov. 1987. Themes will focus on northeastern Pa., but papers on the broader context of women's work and life in industrial American are welcome. Submit a 250-word abstract and a cover letter by Feb. 28 to Director, Anthracite Museum Complex, RD #1, Bald Mt. Rd., Scranton PA 18504.

April 1 is the deadline for paper proposals for the 1987 Annual Meeting of the **Society for the History of Technology.** Info.: Pamela Mack, Dept. of History, Clemson Univ., Clemson SC 29631.

The **9th Annual North American Labor History Conference** is soliciting suggestions for papers, sessions, special events, and featured speakers for its program Oct. 22-24, 1987, at Wayne State Univ., Detroit. NALHC hopes to include sessions on American, Canadian, and European labor history. Proposal deadline is June 1. Info.: Philip Mason, Walter Reuther Library, WSU, Detroit, MI 48202 (313-577-4024)

MILLTOWN BARROOM INFO NEEDED. "I have been doing informal research on the history of barrooms in mill towns and inner-city neighborhoods as part of my work in Harvard's program in the History of Am. Civ. I am especially interested in the so-called 'men's bar' of the period from the 30s to the 60s, but I would gladly look at anything. Perhaps *SIAN* readers can suggest where to find old photos or other records that might help me." Edward Widmer, POB 2020, Cambridge MA 02238.

THE A&M KARAGHEUSIAN RUG MILL, which operated in Freehold, N.J., 1905-69, is being researched by the Monmouth County Hist. Soc., under a grant from the N.J. Historical Commn. If you have info. about the mill or related materials, contact Sarah Heald, MCHS, 70 Court St., Freehold NJ 07728.

MILL MUSEUM DIRECTOR. The 19th-C Hanford Mills Museum in East Meridith, N.Y,, seeks a creative and energetic director to manage all phases of operations. The museum has tremendous growth potential. This water-powered, working mill is located on a 40-acre site with other historic buildings. It has an important artifact collection and maintains a peak summer staff of 18. Requirements: M.A. in Museum Studies with background in the history of technology, or M.A. in History of Technology. Applicants must be well organized with demonstrated ability in non-profit planning, grant writing, membership, and fund raising. The Director must work effectively with the rural local community as well as the Board, and business and professional communities. Salary range: low to mid-20s. Resume and cover letter by Jan. 31 to Chairman, Search Committee, P,O. Box 724, Cooperstown NY 13326. No telephone inquiries accepted.

AVAILABLE

IEEE FELLOWSHIP, The Inst. of Electrical & Electronics Engineers invites applications for its 1987-88 Fellowship in Electrical History. The fellowship is for either one year of full-time graduate work in the history of electrical engineering and technology at a college or university of recognized standing, or for the support of up to one year of post-doctoral work in the same field for a recent graduate. A pre-doc fellow receives $9,000, with up to $2,000 additional for tuition and fees. The stipend is $11,000 for a post-doc recipient. Application deadline is Feb. 1. Info.: IEEE Center, 345 E. 47th St., NY NY 10017.

NEW PUBLIC WORKS BOOK AWARD. Books published in *1986* on subjects in the field of public works will be eligible to receive a $1,000 award from the Public Works Historical Society. This new award has been established to encourage research and publication on the development of public works structures, facilities, technologies, and services that have played a significant role in in the transformation of modern society. The Abel Wolman Award, named in honor of one of the leading public works figures in the 20th C, will be presented to the author who has made the most outstanding contribution to the history of public works.

Authors or their publishers may submit a book for consideration. Historical publications on water resources, transportation, solid waste, planning, engineering, administration, public buildings & grounds, or public works equipment will be eligible. Applications & info.: PWHS, 1313 E. 60th St., Chicago IL 60637 (312-667-2200).

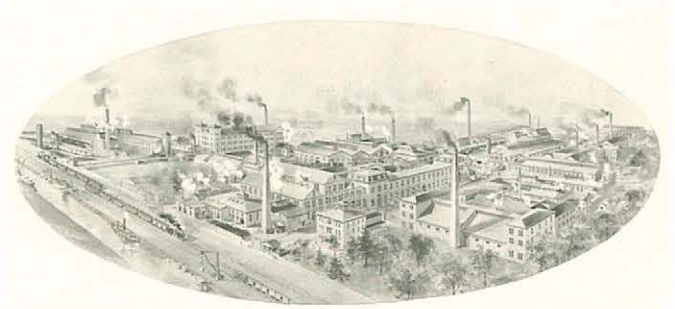
HAGLEY RESEARCH FELLOWSHIPS. Funded by the Nat'l Endowment for the Humanities and the Andrew W. Mellon Foundation, the fellowship program is designed to promote integrative and comparative research into the social context and consequences of industrialization of the U.S. in the century following 1850. Scholars from any humanistic discipline or from related social sciences are encouraged to apply. Under Endowment guidelines, NEH fellowships may not be awarded to degree candidates or for study leading to advanced degrees. The maximum stipend is $27,500 for an academic year and the minimum residency is six months. Hagley's library contains over 160,000 vols., 20,000 lin. ft. of MS and archival materials, 350,000 photos, and 20,000 trade catalogs. There are records of hundreds of different Middle-Atlantic businesses, with particular strengths in RRs, electric utilities, iron & steel, shipbuilding, chemicals, coal mining, petroleum refining, and computers. Also included are business organizations such as the Nat'l Assn. of Mfrs. and the Conf. Board. Applications deadline is Feb. 15, with awards announced by April 1. Info.: Elizabeth Gray Kogen, Hagley Museum & Library, Box 3630, Wilmington DE 19807.

IA T-SHIRT (& other stuff) UPDATE. First there was the **grain elevator T-shirt** [*SIAN* 15(2):8], followed in the last issue by the **bridge-demolition T-shirt**. Now we've discovered the **Ledford Mill T-shirts** sold by Ledford Mill, a c1880 turbine-powered, one-run grist mill. There are several shirts, including one picturing a dressed millstone (tan, S-M-L-XL, $9 ppd.). Orders to Ledford Mill & Museum, RR 2, Box 152, Wartrace TN 37183 (request a catalog).

To go with the above bridge shirt, there's now a **bridge-demolition button** available for $1.50 from Colleen Bartle, 315 W. Annapolis, West St. Paul MN 55118.

A really *good deal* is a **"Samuel Yellin — Metal Worker" T-shirt** touting the travelling exhibit of the same name, for only $5 (black on white, S-M-L-XL) from the Minnesota Historical Society. MHS also has **Split Rock Lighthouse T-shirts**, each sporting a picturesque view of the octagonal 1910 lighthouse [NR] on its stone bluff overlooking the north shore of Lake Superior, in which steams a representative lake boat. These come in navy on white or blue for $8 (child, 6-8-10-12-14-16) & $9 (adult, S-M-L-XL); similar sweatshirts are $12/$16. $1.50 p&h per order. MHS Museum Shop, 1500 Mississippi St., St. Paul MN 55101.

Recall the small version of H.B. Longacre's 1898 bird's eye rendering of "The Works of John A. Roebling's Sons Co." in last issue's article on the complex? Now a **limited edition Roebling poster** featuring the view, 20 x 30 ins., is available for $22.50 ppd. from Trenton Roebling Community Dev. Corp., 223 E. Hanover St., Trenton NJ 08608 (609-396-2002). Proceeds help support TRCDC's non-profit community and preservation activities. The original is in the N.J. State Museum, a gift of F.W. Roebling III.



RANDOLPH-BROOKLYN MILL SITE

Turbine & flume remains at the Randolph-Brooklyn Mill Site. *E.J. Lenik photograph.*

The remains of the Randolph-Brooklyn Mill are located on the south side of Cedar Brook, 250 ft. west of the intersection of Plainfield and Lakeview avenues in the Borough of S. Plainfield, Middlesex Co., N.J. This gristmill was built prior to 1732 and operated until 1909 when it burned. The mill site is indicated on a 1777 map by Robert Erskine, in Gordon's Gazetteer of 1828, and on the 1850, 1861, 1872, 1876, and 1895 maps of this area, which formerly was part of Piscataway Twp.

Last Aug., archeological investigations were conducted at the site by Sheffield Archaeological Consultants of Wayne, N.J., for the S. Plainfield Historical Society. These investigations, directed by Edward J. Lenik [SIA], indicate that a significant portion of the mill complex remains today. A large, 100 x 30-ft.-segment of the mill dam is intact on the south side of Cedar Brook. Remains of two flumes, which carried the water from the millpond into the mill itself, are visible on the west side of the dam.

Test excavations at the site have revealed that a major portion of the complex lies buried beneath flood-deposited soils and 20th-C landfill. The excavations uncovered evidence of the mill's hydropower system and structural remains. An iron scroll-case turbine was found intact, buried beneath nearly three feet of fill. The turbine is enclosed in an iron pressure case and is set into a wheel pit. The top of the turbine measures 66 x 56 ins. The wheel pit and its contents were not excavated.

The excavations also unearthed the remains of a vertical sheet-iron penstock, 40 ins. in diameter, that directed the water into the turbine. A 10-ft. by 40-in.-diam. penstock elbow — reportedly removed in the 1930s — was found nearby. Uncovered on the south side of the turbine were a stone floor and wall, representing the lower level of the mill building and forming the south wall of the wheel pit.

An 1895 map of the mill property indicates that a "Factory" building was located approximately 15 ft. west of the mill. This 150 x 50-ft. structure may have been a reported flax mill. In 1909, the S. Plainfield *Daily Press* reported that the flax mill had gone "out of existence long since of old age and decay." Eleven tests were excavated within the presumed site of the factory, but no evidence of this structure was found.

The mill site meets the eligibility criteria for the National Register. It is intact and has been minimally disturbed, and is "significant" in that it has yielded — and has the potential to yield more — historically important information. It is an excellent surviving example of rural industry from the 18th to the early 20th C. *E.J.L.*

WHEELER SAW & FEED MILL SITE

In 1985 data recovery investigations were conducted within the proposed Monksville Reservoir in Passaic Co., N.J. Archeological excavations were conducted at the Wheeler Saw & Feed Mill site in Ringwood, which was determined to be eligible for the National Register.

Work at the site revealed details of the construction and operation of the mill, which was in operation from c1873 to 1921. An 1894 survey of water power sites in N.J. describes the mill as having a 12-ft. fall and utilizing 28 hp. (net) and 40 hp. (gross). The excavation and field survey uncovered the remains of the 30 x 60-ft. foundation, a wheel pit, raceway, stone dam, mill pond, road network system, a stone footing for a flume, and a loading dock.

The recovered artifacts include architectural items such as bricks, nails, and window hardware; machinery hardware such as Babbitt metal bearing fragments, cast-iron spokes from a pulley, gear fragments, and tools. A millstone was found lying in the wheelpit when the site was first surveyed. The 6-in.-thick stone is 3 ft. in diameter and has a 7-in. center hole.

Documentary research indicates that by the last quarter of the 19th C, a combination of cultural and natural factors led to the establishment of a number of small sawmills in the Wanaque River Valley. The cultural factors were of primary importance. The northern Highlands area of N.J. was sparsely settled and somewhat unstable economically due to the curtailment of regional mining and the eventual closing of the Long Pond Ironworks around 1882. As a result, the economic base of the region began to shift from iron mining and iron working to recreation, retail services, and small industries such as ice making, woodcutting, and sawmilling.

The coming of the railroad in 1878 opened up Greenwood Lake and the surrounding area to housing development and recreational activities. The improvement of local roads such as the Greenwood Lake Turnpike also facilitated this process. The resulting population growth created the need for a local source of lumber for private and public use. The Wheeler mill operated intermittently for nearly 50 years to meet this need.

The mill was located in the narrowest portion of the Upper Wanaque River Valley. It was demolished in 1921 during the construction of the Wanaque Reservoir and became part of the reservoir's watershed holdings. It is interesting to note that the current Monksville Dam is being constructed on the exact site of this mill. Info.: Sheffield Archeological Consultants, 100 Deerfield Rd., Wayne NJ 07470 (201-835-8530) *E.J.L.*

IA VIDEO PROJECT LAUNCHED

Nothing conveys process information (such as how a bridge is built, or how wire is drawn) as well as the motion picture. With the spread of videotape players, the videocassette (despite its relatively poor resolution) has become a very useful medium for distributing motion pictures. The SIA Roebling Chapter (RCSIA) is establishing an IA Video Source project in an effort to make such information available. The chapter will be preparing an annotated catalog of cassettes that will be distributed at reasonable prices to SIA members. Technical production will be handled by Everything Video, one of whose partners is Mitch Dakelman. He is the film collector who has shown fascinating industrial and educational films at various SIA and RCSIA functions.

The catalog will contain at least two types of films: first will be the reproductions from Dakelman's own collection. Any profits from these will allow him to acquire more industrial films for preservation, much of which eventually will go to the Hugh Moore Museum's archives in Easton, Pa.

In addition, films and videotapes made or acquired by other SIA members also will be offered. For example, if you or your organization have recorded some now-vanished process or artifact at work, you might want it available to anyone interested in IA. The IA Video Source Project will make a video master of the film or tape (costing the contributor $10-$24, depending on length and other factors), retain the copy, return the original, and list the item in the catalog.

Tapes sold will be made from the master as needed. The price will be low, allowing maximum public benefit from the collection. If the item is popular, there may be a payback to the originator. All original films or tapes must be IA-related (in the judgement of the chapter's officers), and must be already edited and titled or narrated. An RCSIA leader will be added. Copyright permission must be provided.

Info. & comments: IA Video Resource Project, c/o Aron Eisenpress, RCSIA Secy., 235 West End Ave., 14-C, NY NY 10023.

RCSIA Newsletter

SIA AFFAIRS

NEWS OF MEMBER

At the 46th annual meeting of the Economic History Assn., **Carolyn C. Cooper** was awarded the Allan Nevins Prize for her 1985 Yale thesis, "The Roles of Thomas Blanchard's Woodworking Inventions in 19th-C American Manufacturing Technology." The award includes a $1,000 cash prize and submission of the dissertation to Columbia Press for publication. Last year, she was a postdoctoral fellow at the Nat'l Museum of American History, Smithsonian Inst.

Brian Norden was elected secretary of the Assn. of Railway Museums (ARM) at its annual meeting. ARM was founded in 1961 and is open to any organization engaged in the preservation of railway equipment for historical purposes. Member organizations must have at least one rwy. locomotive, car, or streetcar, and be open to the public on a regularly scheduled basis. Info.: ARM, POB 3311, City of Industry CA 91744-0311 (818-814-1438). Norden also is a director of the Orange Empire Rwy. Museum, Perris, Calif.

Matt Roth in *The New York Times* ? You betcha, in a gripping Sunday story — with photos — entitled "For Two Scholars for Hire, History Is Where They Find It" (Oct. 26, 1986). Roth (joined by associates Bruce Clouette & Robert Griffith in Historic Resource Consultants) reveals the secret world of the entrepreneurial historical consultant. Unnerving tales of leaping from bobbing boats onto lighthouse ladders ("It's not for the faint of heart," Roth says grimly) are enough to give non-consultants the heebie-jeebies.

LOCAL CHAPTERS

OLIVER EVANS (Phila. Area). In Oct., members and guests toured one of the Delaware Valley's oldest and most significant extraction-process companies, the Corson Lime Works in Plymouth Meeting, Pa. The company's history dates to 1822 when Alan and George Corson commercialized lime production at kilns on the farm of George's father-in-law, Samuel Maulsby. Five kilns were operating by 1850, and in 1910 the company opened a second quarry and built new kilns at their present location. Other quarries were opened later and in the 1970s the firm was acquired by IU Int'l Corp. Corson fitted up two pickup trucks with benches for the tour, which began at Quarry No. 3, the only one presently operating. After quarrying operations were explained, there was a brief look at water-filled Quarry No. 2, followed by a visit to the six lime kilns. Because it was a weekend, there was no process at work. However, the kilns are kept heated because of the expense and stress of cooling and reheating. The day concluded with a tour of the Plymouth Meeting Hist. Soc. facilities.

Upcoming is the bicentennial of the original 1795 publication of Oliver Evans' *The Young Mill-wright & Miller's Guide*, which lasted through 15 editions. The chapter is looking into sponsoring a facsimile copy of the first edition, as well as lobbying for a commemorative issue of U.S. stamps featuring Evans and his inventions.

KLEPETKO (Montana). The chapter's Sept. meeting was held in Missoula in conjunction with the annual Mont. Hist. Conf. The chapter was given a process tour of **Champion Int'l's Bonner Mill,** the largest plywood mill (plant size, not production) in the U.S. Lumber milling and at least one building at the site go back to the 19th C when it was owned by Bonner, Hammond, and Eddy, three of Mont.'s leading lumber entrepreneurs. The Anaconda Copper Mining Co. (which operated a major wood-products industry throughout Mont.) owned and operated the mill for most of the 20th C until the late 1970s when it sold the plant to US Plywood, since absorbed by Champion. Bonner, which was built as a company town, still has quite a number of early company houses.

Other tours included the 1905 **Milltown dam & powerhouse** built by Butte "copper king" William A. Clark who, in addition to his Butte mines and smelters, owned a small industrial empire in Missoula, including a large lumber mill, the streetcar system, and the water and electrical utilities. The original timber-crib, rock-fill dam is currently being replaced by the Mont. Power Co. MPC also plans to replace the five original GE AC-generators, the two GE DC-exciters, and the seven Leffel twin horizontal turbines (total peak generating cap. of 3,400 KW) with new turbines and generators, which will increase the capacity of the plant. On the trips to and from the dam, the group visited historic bridges in the Missoula area, including the c1900 **Higgins Ave. bridge** (now a pedestrian bridge at Van Buren St.), which is a steel pin-connected camelback through-truss with a polygonal lower chord.

At its business meeting, the chapter heard a history of the wood-products industry in the Missoula area by Dale Johnson, archivist at the Univ. of Mont.; heard a report on the Cleveland SIA annual conf.; and began laying the groundwork for a statewide survey of IA sites patterned after HAER surveys in several eastern states.

ROEBLING (Greater N.Y, Area). After a chapter hike through poison ivy to view mining sites, this **field survey tip** appears in the Roebling newsletter: "Keep a can of waterless, degreasing hand cleaner, such as Goop, in your car or your pack, plus paper towels; then you can quickly clean off any part of you, or even your clothes, that might have acquired the oil from poison ivy, without waiting to get back home. This will sound like overkill to many of you, but not to those who've suddenly found that they aren't immune anymore."

The chapter is now the proud possessor of some pieces of the Brooklyn Bridge: steel diagonal braces that are said to date from 1883 (at least that's the date on some of them). The chapter is not starting an artifact collection, however; these are in transition to various places, including the Roebling Museum in Trenton [*SIAN* Fall 86:9-11].

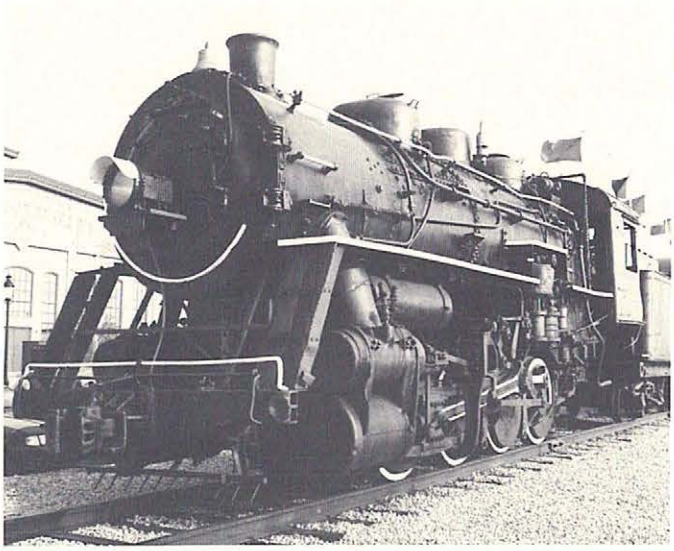
Finally, from the Roebling newsletter, comes this on **IA romance:** "There have been hints that the chapter could do something toward matchmaking between unattached men and women with IA interests in common. Since it would be inappropriate to devote more than a paragraph to this subject in the newsletter, and since anyone interested is going to want complete privacy, it may not be easy to do anything. If you have any ideas on this, or simply want to indicate interest in participating in whatever arrangement is found acceptable, send a brief note to the chapter president. This show of interest will not mean these names will be revealed to anyone; it is simply to put you on a mailing list for further info., and to see if there's any interest. If not, the whole thing will be quietly forgotten, but there's no innovation without trying."

TELL IT ON THE MOUNTAIN

Driving north into San Francisco from the airport, one of the first sights one sees are two lines of mammoth white letters high up on a hillside proclaiming, "South San Francisco The Industrial City." In Sept., South San Fran's Historical Preservation Commission (HPC) voted 5-0 to designate the 60-ft.-high concrete letters a local historical landmark, with all protections pertaining thereunto. The designation may end a dispute between champions of the new high-tech development and those more attuned to the city's smokestack heritage.

"The sign and the message it conveys are not consistent with what's going on here and what we're doing," said Nancy Kelly, executive director of the Pacific Int'l Business Center. Kelly and others have suggested that the 1928 "Industrial City" wording be replaced with a new slogan like "The City of Change" or "The City that Means Business." Other newcomers recommended that the giant letters, along with artifacts from the city's meat-packing and steel-making days, be put in a museum that the city could build.

Enter Edna Harks, local resident since 1917 and HPC president. "'Industrial' is not a demeaning or pejorative word," she says. Developers should "capitalize on what the sign says. It tells plainly who we are, where we are, and what we are. South San Francisco doesn't have climate, but it's a good place to work and not a place to lay around and act like a tourist." *D.H.S.*



All the 0-8-0 locomotives (Baldwin, 1929) for sale by the Illinois Railway Museum are identical to this one, now on static display by its new owners at the restored Northern Pacific RR shops (AKA Bandana Square) in St. Paul, Minn. *R. Frame photograph.*

Locomotive Clearance Sale!

Here's an offer that doesn't come along every day. At least six steam locomotives are for sale by the Illinois Railway Museum, Union, Ill., as part of a surplus equipment close out. These Class P5G, 0-8-0, standard-gauge switching engines were among the last steam locomotives used in large-scale active service in the U.S., and may be familiar to many rail fans. They were built to USRA specifications in 1929 by Baldwin for the Grand Trunk Western RR. Years later, they were purchased by the Northwest Steel & Wire Co. of Sterling, Ill., whose president, Mr. Dillon, was a steam afficionado. Instead of scrapping the engines in the plant's electric furnace, Dillon kept them in service, running three or four at a time, until about 1984 when they were transferred to the museum.

Of the ten received, eight are considered more or less complete units. One is part of the IRM collections, while a second has gone to St. Paul, Minn., for display in front of the restored 1885 Northern Pacific Como Shops [NR], now the Bandana Square mall complex [see *SIAN* 12(2-3):10]. The remaining six are complete and ready for restoration. Fearing steam-operation-related liability problems, Northwest has made all sales contingent upon use for static exhibit only. The asking price varies with the condition of the particular locomotive, and buyers must assume a substantial transportion cost since the engines cannot be moved on their own wheels.

Each is virtually identical with #8380, the IRM loco and the only one authorized for restoration to operational steam. It is 68 ft. long and weighs 215,150 lbs. on the 51-in. drivers. For more info., contact IRM Treasurer Fred Ash, 537 Sheridan Rd., Evanston IL 60202 (312-732-5541 day, 312-328-8006 eve).

CALENDAR

Mar. 28: 6th Annual Canal History & Technology Symposium, Lafayette College, Easton, Pa. Info.: Center for Canal H&T. Canal Museum, POB 877, Easton PA 18044 (215-250-6700).*

April 22-26: Annual meeting, Society of Architectural Historians, San Francisco. Info.: 215-735-0224.

May 6-9: Annual Meeting, Vernacular Architecture Forum, Salt Lake City. Info.: Thomas Carter, Utah Div. of State History, 300 Rio Grande, Salt Lake City UT 84101.

May 13: Annual business meeting, Oliver Evans Chapter SIA.

May 28-31: SIA 16th ANNUAL CONFERENCE, TROY-ALBANY AREA. Info.: Duncay Hay, N.Y. State Museum, 3097 Cultural Ed. Center ESP, Albany NY 12230 (518-473-1746).*

June 7-11: Annual meeting, Am. Assoc. of Museums, San Francisco. Info.: 202-338-5300.

Sept. 6-12: Sixth Int'l Conf. of The Committee for the Conservation of the Industrial Heritage (TICCIH), Austria.

Sept. 17-20: Annual Conf., Ass'n for Preservation Technology, Victoria, B.C. Theme is "Wood & Water," focusing on the Pacific Northwest. Pre-conf. training sessions Sept. 14-16. Info.: APT '87 Conf. Office, Univ. of Victoria, POB 1700, Victoria BC Canada V8W 2Y2 (604-721-8465).

Sept. 24-26: Annual meeting, Lexington Group in Transportation History, Omaha, Neb. Hosted by Union Pacific RR. Info.: Don Hofsommer, *The Lexington Qtly.*,1010 Zephyr, Plainview TX 79072.

Oct. 4-7: Annual meeting, Am. Assoc. for State & Local History, Raleigh, N.C. Info.: 615-255-2971.

Oct. 7-15: 8th Triennial General Assembly of the Int'l Council on Monuments & Sites (ICOMOS), Wash. D.C. Info.: Russell V. Keune, Director of Programs, US/ICOMOS, 1600 H St. N.W., Wash. DC 20006 (202-673-4211).

Oct. 22-24: 9th Annual North American Labor History Conf., Detroit. Paper proposal deadline: June 1. Info.: Philip P. Mason, Archives of Labor & Urban Affairs, Walter P. Reuther Library, WSU, Detroit MI 48202 (313-577-4024).*

**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

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