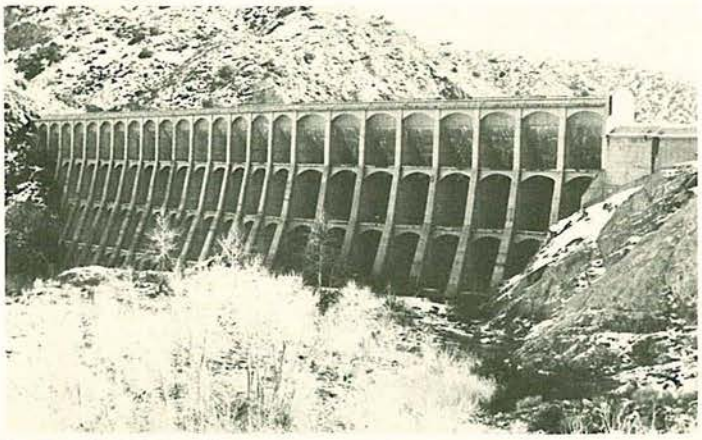
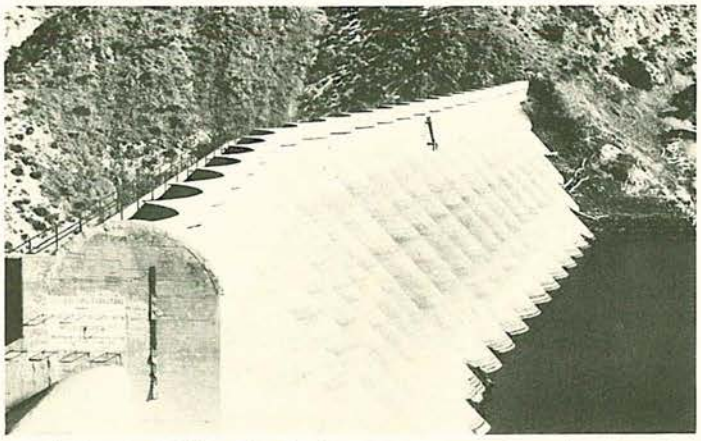
SOCIETY FOR INDUSTRIAL ARCHEOLOGY
NEWSLETTER

Volume Seven Number 1 **January 1978**





LITTLEROCK DAM, 1924. (L) Buttresses on the downstream side, 24 feet on center, create a "hollow dam." Spillway is at far right. (R) The upstream face consists of 29 arches angled at 45°, supported by the buttresses. Spillway is in the foreground. *Donald C. Jackson photographs for HAER.*

HISTORIC DAM FOUND SAFE

In a study co-sponsored by the Natl. Trust for Historic Preservation and the Citizens' Committee to Save the Littlerock Dam (CCSLD), Glenn L. Enke, former prof. of civil engineering at Brigham Young Univ. and an ASCE Fellow, reported that the 54-year-old Littlerock Dam in Los Angeles County, Calif. [NR] is a stable structure that threatens no one's safety. This finding conflicts with allegations by the Calif. Divn. of Dam Safety, Dept. of Water Resources [DWR] that the 175-ft.-high, reinforced-concrete, multiple-arch dam is unsafe, on the basis of which DWR has tried legally to force its demolition. The farmers who own the dam and depend upon its impounded water to irrigate their peach and pear orchards are strongly opposed to the State's actions. They have formed the CCSLD to fight the DWR attempts to destroy the dam. Designed by John S. Eastwood, builder in 1908-09 of the world's first reinforced-concrete multiple-arch dam, the Littlerock Dam was the tallest of this type in the U.S. when built and tallest of the 17 dams built to his designs.

Mrs Hobart Bosworth, Director of the CCSLD's Historic Preservation Task Force, commented on the State's actions and the importance of Dr Enke's study: "For 54 years, the dam has withstood everything nature could muster and it still functions perfectly. During the tremendous floods of March 1938, the original siphon spillway became clogged with debris and water poured over the entire dam at a depth of 1-3 feet for almost 24 hours and the dam stood strong. It has withstood numerous earthquake shocks without impairment. There has never been a multiple-arch dam in the U.S. which failed and in any way caused loss of life or property."

The State is planning to order the dam permanently breached this spring, when they finally complete an environmental impact statement, but Scott O. Smith, CCSLD attorney, says that the State is going to have to *prove* in court that the dam is unsafe before they can breach it and that because of Dr Enke's report they will find this very difficult, if not impossible. Mrs Bosworth stated, "The farmers of Littlerock aren't going to be trampled by the mindless bureaucracy of the State. The State wants to replace our present structure with an earthfill dam . . . at a cost of over $4 million to the farmers. We will fight this to the Supreme Court! Long Live the Dam!" *D.C.J.*

THE ELM ST. BRIDGE SAGA

Compromise Gone Quite Silly

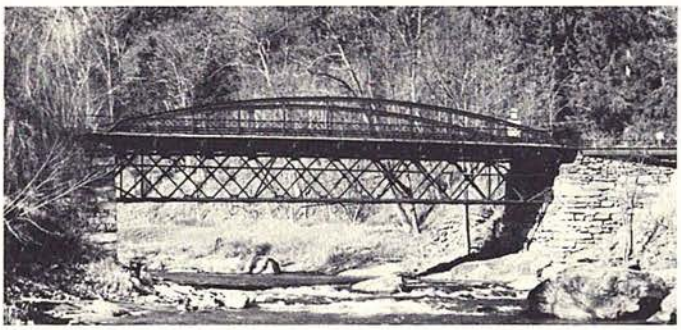
In a state where covered wooden bridges fare rather nicely, thank you, their iron counterparts still are in obvious trouble. For more than six years now the town of Woodstock, Vt. has been trying to replace the Elm St. Bridge which carries Rt. 12 over the Ottaquechee River. A funding source was sought several years ago through the Fedl. Bridges Replacement Program. The Vt. Dept. of Highways drew up plans for a new steel and concrete structure to meet the specifications for funding under the program.

When the new proposal was made public, trouble broke out almost immediately on two fronts. First: the existing bridge's 18-ft. width and its crooked, narrow approach formed just enough of a bottleneck to slow traffic entering the town. The result was a remarkably pleasant mix of automobile and pedestrian. The new bridge, over twice the width, threatened to destroy that mix. Second: the town suddenly found that a good many people rather fancied the old bridge, and were reluctant to give it up for so banal a replacement.

The present bridge is an 1870 [pre-patent] Parker truss; a single 110-ft. span. It was constructed to replace the last of a series of seven wood structures that had traversed the river for an admirable total of 75 years. The Parker Truss was somewhat of a hero in Woodstock and, after 100 years' service, seemed to fit in quite neatly.

Continued

Published by the Society for Industrial Archeology Editor: Robert M. Vogel
Room 5020 National Museum of History & Technology Smithsonian Institution Washington, DC 20560



Elm Street Bridge. *Douglas A. Yorke photograph.*

The bridge itself falls within the Woodstock Historic District, and local forces began to surface calling for renovation rather than replacement. Site visits by several groups were conducted and a HAER record was made. In time, the State retreated from its 40-ft. proposal to offer a 30-ft. alternative, but made clear that that was the minimum acceptable width. The town still favored renovation, but was getting tired of waiting for its new bridge. Little hope of compromise appeared and the case was scheduled to go before the [natl.] Advisory Council on Historic Preservation. The potential effect of the Council's decision on the stature of IA brought widespread attention to the Elm St. bridge.

Shortly before the Council convened, a final site visit was organized and a solution reached: a sad, short-sighted compromise. Reconstruction will start this spring on a new 24-ft.-wide steel-and-concrete bridge at the site of the old one. Parker's bridge will be taken down and the old trusses will be taped, or glued, or something, onto the sides of the new structure as remorseful reminders, presumably, of the sicker side of compromise. *D.A.Y.*

An illustrated pamphlet on the Elm St. Bridge, by Dennis Zembala [SIA], is available from the SIA HQ: $1 in stamps.

THE SURVIVAL OF PIER A

City Pier A [HAER], at the west edge of New York City's Battery Park, is the city's oldest functioning pier. It was constructed in 1885 to house the offices of the Dept. of Docks and of the Harbor Police. The Dept. of Docks, responsible for the pier's construction, had been created by an 1870 act of the State Legislature to regulate construction along the Manhattan waterfront. The plans that evolved, including construction of the city's first permanent bulkhead, became the first effective attempt in America at municipal administration of a port facility.

Pier A. *Faye Argentine photograph for Seamen's Church Institute of New York.*

Engineer for construction of the pier was the dept's Engineer-in-Chief, George Sears Greene, Jr. (1837-1922). As described in the recently completed historic structure report by Meadows & Assoc., Architects, Pier A was a highly utilitarian structure with classical ornamentation on a galvanized sheet-iron exterior. It is the substructure that is of greatest interest, however. Because of bedrock close to the riverbed, conventional pile foundations were precluded. Instead, timber pneumatic caissons, similar to those used 15 years earlier by the Roeblings at Brooklyn Bridge, were used, concrete filled. Upon these were built granite piers to about waterline, spanned by granite arches to form a deck. The method is unique in N.Y.C. and apparently the U.S.

There have been several architectural modifications: an extension inland in 1900 and the addition of a third story in 1904. The pier's principal feature—the clock tower—was added in 1919 as a memorial to the dead of WW-I, a gift of Daniel G. Reid, a founder of U.S. Steel.

Since 1960, the pier has been the Headquarters of Marine Fire Co. No. 1 (fireboats). However, its adjacence to the proposed Battery Park City has made its survival a key issue in a dispute between preservation advocates, led by the N.Y. Landmarks Conservancy, and the Battery Park City Auth. [BPCA], leaseholder of the property, which planned demolition of the structure to make way for three high-rise office towers. At the instigation of the Conservancy, the pier was placed in the Natl. Register in June 1975. Last year the Fire Dept. received a $90,000 grant-in-aid for the preparation of a historic structure report and for repairs to the pier's perimeter skirt.

Last July the pier was named a N.Y.C. Landmark by the City's Landmarks Commn., and on November 17th, despite the opposition of BPCA, landmark designation was unanimously approved by the City's Board of Estimate.

The City recently has applied for a second grant of $68,500 to carry out emergency roof repairs. *P.H.S.*

REVIVALS

TROLLEY TUNNEL GETS NEW LIFE. By combining the sound features of an aged structure with some modern mass-transit needs, the city of Pittsburgh has successfully revived its 73-year-old Mt. Washington Trolley Tunnel for use as a mixed-mode transit facility. The 3,500-ft. tunnel makes up one leg of the new 4.5-mile, 2-lane South Busway, a unique tunnel-highway-bridge system recently inaugurated by the Port Auth. of Allegheny Co. Dug originally for the exclusive use of trolleys, the old tunnel has been benevolently relit, retracked, reinforced, and rechristened a combination bus-streetcar throughfare designed to funnel 32,000 commuters daily into the downtown.

WIND TECHNOLOGY STIRS UP A STORM A champion of the windpower revival movement reveling, no doubt, in the current agonies of our oil and coal-based industries, is Zephyr Wind Dynamo Co. of Brunswick, Maine. Using a cluster of design innovations to maximize the efficient transfer of rotary energy, Zephyr markets a line of revolutionary wind turbines currently being put to household and industrial uses in several windswept quarters of the country. Intensified public and private interest in wind-based energy systems has encouraged the firm's Zephyr Institute to organize a series of spring and summer courses this year to give serious windpower enthusiasts (and historians?) first-hand exposure to the latest in wind technology and, for beginners, the fundamentals of wind theory. Details: Willard Gillette, Box 241, Brunswick, ME 04011. *D.H.S.*

COMMENT

Thoughts Brought on by Prolonged Exposure to Exposed Brick is the subtitle of the article "U.S. Journal: New England," by Calvin Trillin, in *The New Yorker,* 16 May 1977, pp. 101-07.

"There are some people," observes Trillin, "who find melancholy aspects in the prospect that, at the present rate of brick-exposing and paint-stripping and beam-uncovering, all the old warehouses in all port cities will someday be thoroughly renovated as shopping areas that feature gourmet kitchen-supply shops and purveyors of hardwood toys and restaurants with names like The Purple Endive."

Trillin observes that these renovations tend to look alike across the U.S., but "If you saw Lester Maddox selling autographed axe handles, you'd know you were in Underground Atlanta." He also discusses three specific waterfront projects: Old Port Exchange in Portland, Maine; Quincy Market, Boston; and Olde Harbour, Portsmouth, N.H., the latter demonstrating the value of "fortuitous apathy" and "the ultimate efficacy of lethargy," since Portsmouth "was lacking in either the money or the energy to destroy itself" in the 1950s and thus has "an extraordinary number of fine old buildings" that are "just the sort . . . that towns with forward-looking businessmen and shrewd city councils got enough federal money to tear down during the days of urban renewal." *J.W.*

THE WORK OF IA

Top: Camden Station, c1855, earliest major urban RR station remaining in use in the U.S. Bottom: the B&O Belt RR Power House, built 1895 to furnish power for the first mainline RR electrification project. Engine room on left; boiler house on right.

PHOTOGRAMMING THE "BANDO". At the suggestion of the Maryland Historical Trust, the [federal] Interstate [Highway] Divn. for Baltimore City contracted with Perry Borchers of Ohio State Univ. to photogrammetrically record the B&O RR's Camden Station, Baggage Depot, and the Belt RR Powerhouse in Baltimore. The survey team of Borchers, his wife Myra, and three others, recorded the buildings Nov. 10-13, and 19, 1977.

Photogrammetry, in its broadest terms, is the science of measuring by means of photography. The technique employs mathematical and mechanical procedures to plot, in orthographic projection, the form, dimensions, and location of buildings and objects. Respective views are recorded photographically and are the basic tools of this process. Tall buildings and other structures difficult to record manually are especially appropriate for photogrammetry, minimizing danger to the recording team.

The Trust is now endeavoring to find funds to produce measured drawings of the structures from the stereopairs and field data produced, and has contacted Vlastimil Koubek, the architect recently selected to undertake renovation of Camden Station, in the hopes that this material will be of use in his work. *M.R.E.*

For more information on this recording technique, see Perry Borchers' Photogrammetric Recording of Cultural Resources, *Natl. Park Service Publ. 186 (Washington, D.C., U.S. Government Printing Office, 1977).*

DISCOVERIES & INQUIRIES

HARRIS CHEMICAL COMPANY

In 1910 the Harris Chemical Co. erected a mill for grinding feldspar ore, located in Edgemont Township, Delaware Co., Penna. in the area now part of Ridley Creek State Park Historic Dist. The mill and its history are now the subject of investigation by the Park's Department of Archaeology.

Documentary evidence has established that Harris Chemical operated the mill unitl 1916, when it closed. The mill seems to have been used to grind locally-mined ores to be used as a component of ceramic glazes. There has been little written on methods of manufacture or the uses of feldspar. It has been suggested that some type of conical grinding mill may have been employed. Any reader with knowledge of this process is requested to contact: John P. McCarthy, Directing Archaeologist, Ridley Creek State Park, Sycamore Mills Rd., Media, PA 19063.

One of six cast-iron braces imbedded in the foundation wall, Harris Chemical Co. site. *John P. McCarthy photograph.*

PLANTATION COTTON PRESS

The Magnolia Plantation cotton press in Natchitoches [pr. *Nak-a-tish*], La. is an unusual survival of the Southern "cotton culture" of the early to mid 19thC. It stands 32 ft. tall with a thick wood screw that probably was turned by mule power. Working in tandem with a saw-type cotton gin, it compressed the cleaned cotton into standard bales of 400-500 pounds. The press timbers are incorporated into the barn structure in which it is housed. This is uncommon as most cotton presses stood as independent structures. Magnolia Plantation's almost complete grouping of out-buildings provides an excellent historical setting for the press. Plans are underway to restore both press and plantation as part of an agricultural museum.

The land and buildings were acquired recently by Museum Contents Inc., of which Natchitoches Mayor Robert B. DeBlieux is Chairman. Because of this, the future of the Magnolia press is more secure than it has been in many years.

To date little research has been done on the press. Anyone interested in the project or having information about cotton presses of this type is invited to contact Mayor DeBlieux, City Hall, Box 37, Natchitoches, LA. (318) 352-4018. *J.C.F.*

The Magnolia Cotton Press, Natchitoches, Louisiana. *Jonathan C. Fricker photographs.*

SIA AFFAIRS

1979 ANNUAL CONFERENCE. As announced earlier, next year's gala is to be in Georgia, in the IA-rich city of Columbus-on-the-Chattahoochee. Most likely it will be on the last weekend in April; exact date to be announced shortly.

FALL FIELD TRIP. The previously announced expedition to Richmond, Va. and vicinity with the Victorian Society has, with regret, had to be scrubbed. The year won't be allowed to pass without a Fall Trip, however, and we now offer you an opportunity of fully equal worth and interest: The Industrial Archeology of **RHODE ISLAND.**

The two-day trip is to be organized and sponsored by the Southern New England Chapter. The date still is tentative but one of the last two weekends in Sept. is being aimed for. Watch these pages for the final word.

CHAPTER NEWS

SOUTHERN NEW ENGLAND CHAPTER members have assisted Tree Growers, Inc. of Milford, N.H. to find repositories for the remains of a sawmill on the firm's woodlands in Penobscot, Maine. Chapter pres. Laurence F. Gross surveyed the site, informing John Bowditch [SIA] of the Henry Ford Museum of his findings. With the support of Penobscot residents anxious to see some part of the derelict mill preserved, the Ford Museum recovered a "Huzzy's Imporved Turbine 1867" and its wood-cog main gear.

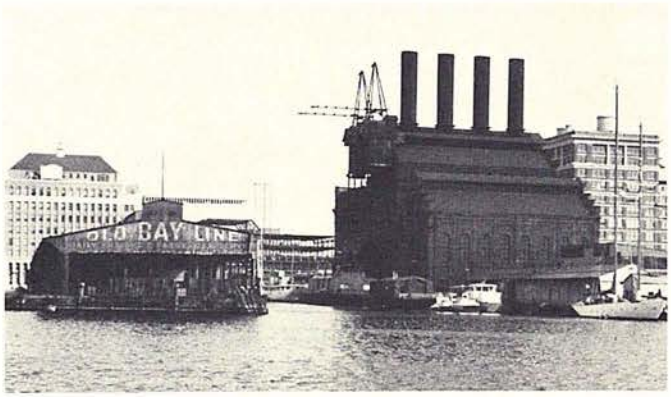
Also saved: a rose wheel (turbine) to go to the Slater Mill, and two lengths of square cast-iron shafting, now extremely rare. Tree Growers' Andy Peterson sought out preservation assistance, delayed plans to demolish a hazardous structure, and assisted in the removal: a model of cooperation between museums and private enterprise. *R.M.C.*

ADAPTIVE RE-USE

The number of older or obsolete industrial buildings considered for conversion to other uses continues to grow. Some recent cases of interest:

California. In San Francisco, the **Jessie St. Substation,** 1909, designed by Willis Polk, between 3rd & 4th sts. off Market, has been the subject of a recent feasibility study by the Foundation for San Francisco's Architectural Heritage. The conclusion: the substation is adaptable for retail and commercial space, at an estimated cost of $2.5 million. The estimate includes acquisition costs, rehabilitation to building code standards, tenant improvements, and financing. A projected return of 18-21% is based upon tax incentives (possible under the 1976 Tax Reform Act) for renovating historic buildings. (The building has been listed in the Natl. Register since 1974). Copies of the feasibility study are obtainable at $5 from Heritage, 2007 Franklin St., San Francisco, CA 94109.

Maryland. In Allegany County at Mt. Savage, the 1882 wood-frame **birthplace of Cardinal Mooney** is being restored under a recently signed $31,300 contract. What does this have to do with IA, you say? Well, the building also will have a rail museum, commemorating the manufacture of iron rails, which first took place in the U.S. at Mt. Savage, in 1841.



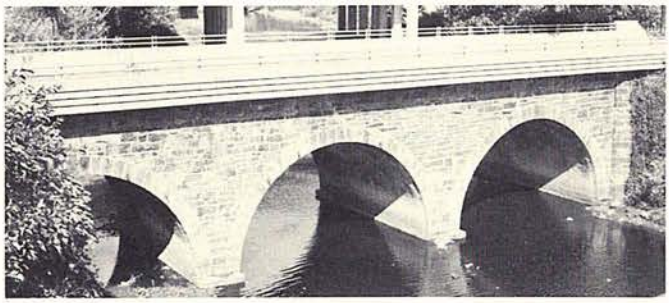
Pier Four Power Plant from the Inner Harbor.

In Baltimore, the old **Baltimore Gas & Electric Co.'s power plant** at Pier 4, Pratt St., has been purchased by the City for $1,650,000 for conversion to retail stores and offices. Built in 1906-1907, the coal-powered facility generated electricity originally for United Railways & Electric Co. trolleys. Federal community development block grants funds of $650,000 will be used to meet part of the purchase price, which has resulted in some criticism from the City Council president who feels the money might better go to neighborhood projects. The City has, however, already leased the two smallest structures of the five-building complex—for $24,000—to the Chart House restaurant chain. The vast interior spaces of the boiler and turbine houses presumably could be adapted for a wide range of purposes.

Also in Baltimore, work has been completed on rehabilitation of the ex-**Northern Central RR freight station** on Guilford Ave. as the Downtown Racquet Club. The c1865 structure [HAER] has been steam cleaned, revealing finely detailed brickwork. Badly deteriorated brick surfaces within some of the relieving arches have been covered with a champagne-colored stucco panelling. Most of the central area houses four courts under the timber and iron roof trusses which have been left exposed, while squash courts fill the remainder. Offices and locker rooms are located in a somewhat later lean-to adjacent. The project was financed by a loan pool formed by the Baltimore Federal and the Metropolis savings and loan assns., and the Equitable and Central savings banks. Thus another good, sound building has been saved from the pressure to create yet another parking lot—its likely fate had the Racquet Club developer not come along and realized the potential for the station's adaptation.

The dramatic iron front of the McLauthlin Elevator Co. Building. *Herbert H. Harwood photograph.*

Massachusetts. The Geo. T. McLauthlin Elevator Co. building, 120 Fulton St., Boston, is under consideration for rehabilitation as apartments (28), commercial and office space, and parking. A one-story addition also is planned. The 1861 building has apparently New England's oldest cast-iron facade, and is one of only five such structures still standing in Boston. The man behind the proposal is planner Nicholas Deane, who recently received preliminary approval from the Board of Appeals for use-change variances. Deane foresees large apartments (about 2-3,000 sq.ft.) costing $65-90,000, but there would be four one-bedroom apartments in the $37-45,000 range. Total cost for improvements including these essential for meeting building code requirements is being pegged at $1 million. *T.A.S.*



Rippowam River Bridge, Stamford. *Herbert H. Harwood photograph.*

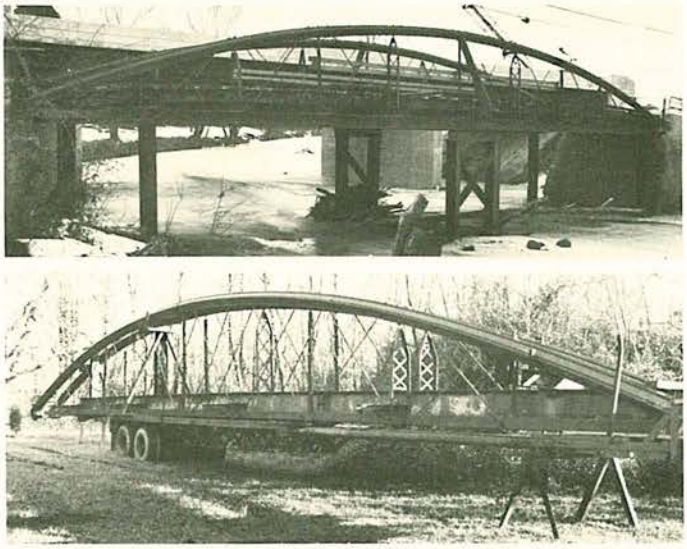
TRIPLE THREAT. How many other bridges successively have carried a steam railroad, a trolley line, and a highway? The Rippowam River Bridge, Stamford, Conn., was built by the N.Y. New Haven & Hartford 1847-48; abandoned when succeeded by a steel deck-truss in 1898 during the line's four tracking and realignment; reclaimed by the Stamford Street RR c1902 and used until 1930; again in disuse until c1960 when the Conn. Turnpike was built, necessitating its re-reclamation to carry S. State St. *H.H.H.*

•

ADAPTIVE USE. The Pittsburgh & Lake Erie RR station at Aliquippa, Pa., renovated by Jones & Laughlin Steel Corp. for use as their Aliquippa Works employment office. *Field Curry photograph.*

MISC. SITES & STRUCTURES

A BOWSTRING PONY-TRUSS BRIDGE, c1875, by the Wrought Iron Bridge Co., Canton, Ohio, crossing Little Pipe Creek on Md. Rt. 77 between Detour and Keymar, is being displaced by a modern counterpart but will be moved by the state to Cunningham Falls State Park near the Catoctin Furnace, Frederick Co.



Wrought Iron Bridge Co. bowstring truss at Detour, Md., before and after the move to its new home.

CAST IRON

The growing public concern for the preservation of early cast-iron structures throughout the country is seen in these recent items:

New Bedford, Mass.: The cast-iron facade of **the C.F. Wing Building** (1887, New Bedford Iron Foundry) is being refurbished as a free-standing arcade in the Downtown Mall by CETA workers.

Louisville: The first-floor cast-iron facade of **the Christian Observer Bldg.**—in a city noted as having the 2nd-largest concentration of C.I. in the country—has been disassembled piece by piece by volunteer architects under the guidance of the Preservation Alliance of Louisville for reassembly as an exhibit in the new Museum of Natural History, itself to be housed in a group of C.I. buildings.

New York: News from Gotham is as usual dismal: the *Times* reports on the theft of the sections of the **Bogardus Building** (1849) which were left behind in a theft of three years earlier [SIAN July 74:1]. With this second robbery, all chances for the reconstruction of what had been the earliest surviving C.I. building have been lost. A few pieces survive in possession of the N.Y. Landmarks Commn.

Philadelphia: Following two fires, the city is dismantling the Brock Warehouse facade (by Hoxie & Butten, 1850) at 242-44 N. Delaware Ave., for future preservation. Is *this* now the oldest surviving cast-iron facade? *J.C.M.*

AN 18th-CENTURY HOAX

Will it also raise the dead? "A machine has lately been invented at New Haven, in Conn., to go by water, which takes wool or cotton in their raw state, and without any or very trifling manual labor, cards, spins and weaves to great perfection. This machine is so invented as to raise water from a pond or lake, sufficient to keep all its parts in constant motion."

Notice in the *N.J. Journal & Political Intelligencer,* 7 Dec. 1791 (which is precisely 150 years before Pearl Harbor Day, if that has any bearing).

ART IN I A

Poughkeepsie Urban Renewal photo.

Cast-iron fountains, usually richly decorated, were erected in public places in many American towns and cities over a fifty-year span up to the end of the 19thC. In the 20thC these metallic civic embellishments became unfashionable, maintenance was ignored, plumbing systems deteriorated, and vandalism occurred. In recent years appreciation has revived, however.

Thought to have been of Parisian inspiration, by way of London's Great (Crystal Palace) Exhibition of 1851, the first cast-iron fountain in this country probably was the 20-ft. tall 1858 beauty still standing in the center of Savannah's Forsyth Park. Possibly the creation of the Janes, Beebe Co. (with headquarters in Manhattan and foundry in the Bronx), the fountain had tritons and waterbirds and was topped by a statue that might be called "Civic Pride." Replicas are to be seen in Madison, Ind., Cuzco, Peru, and Poughkeepsie, N.Y. (illustration). An outstanding cast-iron fountain is the large J.L. Mott Iron Works two-tier specimen that has stood since 1872 on the East Drive of Woodruff Place, Indianapolis, now being restored by craftsman Edmund Wittkamp of Danbury, Conn. There also is a tall, many-figured Mott with *putti* and goddesses in downtown Montgomery, Alabama, recently restored.

Each of us should encourage institutions and communities having Victorian iron fountains to cherish them and undertake rehabilitation before it is too late and while there still are craftsmen able to do the work. *M.G.*

Information concerning other fountains around the country is sought by Friends of Cast Iron Architecture, 44 West 9th Street, New York, N.Y. 10011. (212) 477-2124.

MISCELLANEOUS NOTES

ARTHUR C. TOWNSEND, currently adjunct prof. of American Studies at Univ. of Kansas and previously Md. State Historic Preservation Officer, has been appointed the SHPO for Colorado, the first person to hold the position full time.

EDWARD A. LARTER, pres. of the Wannalancit Textile Co., the last weavery in Lowell, Mass., is one of a group of businessmen featured in the 13 March issue of *Fortune.* The occupation-related hobby of each is described, Larter being a collector, it hardly needs mentioning, of looms (among other technological curiosa).

LEE JON JUSKALIAN has resigned as an architectural historian for the city of Providence, R.I. to become senior planner for Pawtucket, R.I., being appointed also to the Downtown Committee of the Providence Preservation Society.

EVENTS

CASS RAILFAN WEEKEND. 20-21 May. Full panoply of an Appalachian logging railroad with a host of geared locomotives. Spectacular at any time; they turn themselves in-side-out for the occasion. Brochure & announcement: Cass Scenic RR, Box 75, Cass, WV 24927.

WELSH IA COURSES: 1-7 May, Welsh Gold Mines; 3-10 June, Practical IA: 17-24 June, Lead & Copper Mines; 27-29 Oct., Aspects of IA; 29 Oct.-5 Nov., IA of Snowdonia. Brochure: The Principal, Snowdonia Natl. Park Study Centre, Plas Tan y Bwlch, MAENTWROG, Gwynedd LL41 3YU, U.K.

LONDON & CANAL HOLIDAY. 17-31 May, incls. 7 days of self-drive canal boat + 7 days in London. Approx. $775 per person. Brochure: Morgantown Travel Svc., 127 High St., Morgantown, WV 26505.

SUMMER FIELD SCHOOL IN HISTORICAL ARCHEOLOGY. Old Sturbridge Village, 19 June-4 Aug., at Stratton Tavern Site, Northfield, Mass. Instruction and excavation; full range of experience under able faculty. All-in fee: $270.; room & board: $455. Brochure: John Worrell, Old Sturbridge Village, Sturbridge, MA 01566. (617) 347-3362.

LOWELL LECTURE. 3 May, Construction & Architecture of the Cotton Factories in Lowell, 1822-60. Pauline Carroll. 7:30 P.M. Lowell Museum, Tremont & Suffolk Mill, Lowell, MA.

TOWPATH TRAIL. Bike trail laid out along section of the Middlesex Canal. Map: City of Woburn, MA.

IA TOUR—ENGLAND & WALES. Commercial tour by W.F. & R.K. Swan (Hellenic) Ltd.: 14 days (18 July-1 Aug. or 29 Aug.-12 Sept.), $802. (not incl. air fare). Wide variety of sites on circle route: London, Stoke-on-Trent, Derby, Matlock, Sheffield, Wales, Ironbridge, Bristol, &c. Much of the cream of British IA. Information: J.R. Keith, Esplanade Tours, 38 Newbury St., Boston, MA 02116. (617) 266-7465.

STEAM EXCURSIONS from the Cincinnati area. Chessie System, behind ex-Reading 4-8-4 No. 2101, built 1945. 17, 20, 21 May and 3, 4, 5 June. Brochure with all details: Steam Special, Box 15441, Cincinnati, OH 45215. (513) 369-5359.

MT. WASHINGTON ALTERNATIVE-VEHICLE REGATTA. This remarkable event, designed as a prooving ground for vehicles of all types operating on fuels and systems other than conventional, which has been run with great success for the past three years, again will be conducted by its originator, Charles E. MacArthur: 22-24 June. Site, as before: the automobile road on the eastern slope of Mt. Washington, N.H. Both instructional and fun, whether entrant or observer. Details: C.E.M., 16 Vaughn St., Dover-Foxcroft, Maine 04426.

FIRE ENGINE MUSTER. The Chesapeake Antique Fire Apparatus Assn. and SPAAMFAA (to long to write out) will hold the 9th Annual Maryland Muster on 13 May, at Baltimore's Inner Harbor. Parade, contests, and best of all, PUMPING, with gas and STEAM. A must for you *shpritzfreaks.* Fireboat too. Information: D.B. Moltrup, 3408 Rutgers St., Hyattsville, MD 20783. (301) 422-6133.

CAST-IRON WALKING TOURS, NYC. Friends of Cast Iron Architecture Spring tours: 30 April—S. of Canal St. area (meet: W. B'way & Chambers); 7 May—SoHo area (meet: NW cor. B'way & Howard); 14 May—"Ladies Shopping Mile" (meet: Grace Church, B'way & 11th). All rain-or-shine; 2:00 PM startoff; $2.50. FoCIA, 44 W. 9th St., NYC 10011. Room 20.

REMINDER—Conference on Preservation of Engineering Structures, Franklin Pierce College, Rindge, N.H. 25-30 June. Details: E.L. Kemp, History of Science & Technology, W.V. Univ., Morgantown, West Virginia 26506. (304) 599-4838.

ARCHIVAL COLLECTIONS

CANAL MAPS. The Virginia State Library, Richmond, has received a collection of 1350 maps and charts from the Chessie System (C&O/B&O RRs), of the James River & Kanawha Canal. They were prepared by the Canal's successor, the Richmond & Alleghany RR, to chart the waterway's entire right-of-way, and show property ownership, locks, bridges, and all other principal features, section by section, from Richmond to Pattonsburg in Alleghany Co. The transfer was due largely to the work of SIA members T. Gibson Hobbs and William E. Trout III, authorities on the canal. Information: Mary C. Grattan, VSL, 23219. (804) 786-7133.

NPR DRAWINGS. The Chief Engineer's "Old Vault Files" in the Northern Pacific Ry. Records, Minn. Historical Soc. (St. Paul) have been cataloged and are open for research. The 25 linear ft. contain reports, surveys, specifications and some spectacular engineering drawings, all c1867-1890s, related to the construction of bridges, buildings, and main and branch lines, from Wisc. to the west coast.

THE HOWARD STEAMSHIP COLLECTION at the Lilly Library, Indiana Univ. Bloomington 47401, includes some 10,000 drawings—late 19th-early 20thC.

AVAILABLE

PALMER GRIST MILL, on the Battenkill, Greenwich, Wash. Co., N.Y. Mid-19thC, 2½ story, frame on stone foundation. Full equip., 4 turbines. $15,000. Arch Craig, Chamberlins Mill Rd., Salem, NY 12865. (518) 854-3102.

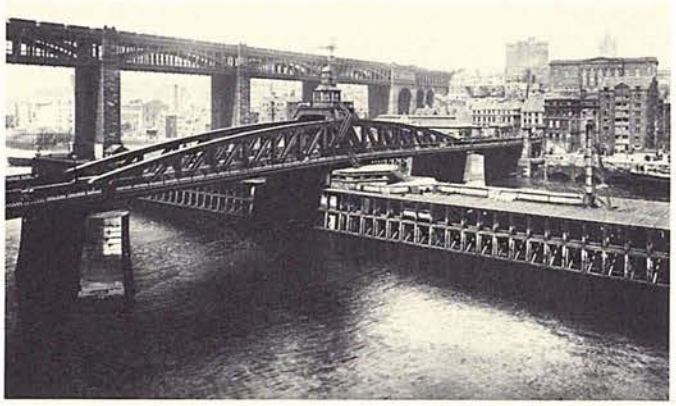
SHIP PRINTS: AGES OF SAIL & STEAM. Set of 6, color $15. Brochure: Natl. Archives Trust Fund, Natl. Archives & Record Svc., Wash., DC 20408.

SOUGHT

CONTRACTORS' DUMP CARS, mine cars, brickyard cars wanted in any gauge 18-36 in.; preferably older styles with outside bearings; also rail, 20-lb. and under; switch components, track accessories (splice bars, rail anchors, etc.) used but suitable for relay. Robert Johnson [SIA], Route #1, Box 265-A, Rossville, GA 30741. (404) 375-4326.

SHEEREST MISCELLANY

SON OF SUPERLATIVES (We once again apologize for this, and would reassure you that it will be an infrequent lapse.) In June 1876 the *largest swing bridge* that had ever been built opened to road traffic over the River Tyne at Newcastle. The first ship to pass the new bridge was an Italian vessel on its way upriver to Elswick to take on board *the largest gun* that had ever been constructed. There the gun was loaded by a new, hydraulically-operated sheerlegs, *the largest in the world.* In Italy, the gun was off-loaded by an Elswick-made hydraulic crane, *also the largest in the world! Courtesy Tyne & Wear Industrial Monuments Trust pamphlet on the Tyne Swing Bridge.*



19th-century view of the Tyne Swing Bridge. The steam pumping plant is in the fender structure at the right. Behind is R. Stephenson's famed high-level railway & highway bridge of 1849. Both bridges are in full use today. *Museum of Hist. & Tech. photograph.*

From the SATISFYING-QUIRKS-OF-FATE FILE OF *SWAP* (Md. Historical Trust) . . . comes the news that a not-so-old Baltimore parking garage will be demolished because of its economic failure. It is the first of 40 financed by the City to have closed, leaving a debt . . .

THEY SAID IT COULDN'T BE DONE, AND SURE ENOUGH, IT COULDN'T. The *Wash. Post* reports that the administration of BART, San Francisco's high-tech, super-sophisticated, hyper-flawed subway has made a public apology for the dismal performance of the system during its five-year history. The BART front office has acknowledged that performance ranges from "lousy to poor" and that it will be years, if ever, before significant improvement is seen. In an explanation of mathematical dubiousness, the Asst. Genl. Mgr. noted that they were plagued by over 100 problems, each one of which caused 2 or 3% of their difficulties! (For earlier comments on all this, see SIAN Mar/May 1975:4).

ELECTRIC RAILWAY ASSNS. Two active organizations of long standing deal with this interesting aspect of technology and IA: the Electric Railroaders Assn., 4 W. 40th St., N.Y.C. 10018; and the Central Electric Railfans' Assn., P.O. Box 503, Chicago, IL 60690. Both have extensive publication programs.

THE EXCITING STORY OF RRing TODAY. Life does go on. While, if anything, anti-IA, a "great program idea" that may be of some interest. Burlington-Northern (the *ménage-à-trois* of the CB&Q, Northern Pacific, and Gt. Northern RRs) offers to describe for groups the miracle of modern RR operations, based not on steam and muscle but on computers and sales staffs. (That's Jim Hill you hear revolving.) Mgr., Community Relations, B-N, 176 E. 5th St., St. Paul, MN. 55402 (612) 298-2081.

FORGET INDUSTRY—SERVICE. Perhaps she means shoeshine parlors—but on a really urban scale. Secretary of the U.S. Dept. of Housing & Urban Development Patricia Harris recently advised "Older U.S. Cities" [our quotes, as we wonder how old is older] to resign themselves to the demise of manufacturing as their economic base. Cities seeking federal aid to lure new industry will find "that will be a poor decision," [hers, this time] she said in a Natl. Press Club speech in Nov., and suggested that cities focus on transition to a service-oriented economy. But gee, Pat, if cities could do only half as well manufacturing goods as the govt. does manufacturing self-fulfilling prophecies mightn't. . .

IA NOTES FROM CANADA

ALL'S WELL THAT ENDS WELL: It's not all Shakespeare at Stratford. The Stratford shops of the C.N.R. were once one of the most important and best-equipped locomotive repair facilities in S.W. Ontario. The last steam locomotive to be outshopped there was C.N.'s former fan-trip engine No. 6218, now on display at Fort Erie. This was in 1964. Until recently the buildings have been used chiefly for storage. Now, however, the Cooper-Bessemer Co. of Canada has reactivated the complex. C-B makes pumping machinery for gas and oil pipelines and is currently engaged on a contract with the U.S.S.R. worth about $175 million. The massive cranes and other machinery left over from the days of steam were apparently just what the company needed. Several former C.N. machinists are now back working in the plant in which they originally served their apprenticeships, a rare example of the simultaneous adaptive re-use of both human and material resources.

WHAT'S BAD FOR G.M. IS GOOD FOR CANADA. Steam freaks will recall reading in SIAN Sept./Nov. 76:6 of the Worthington-Corliss cross-compound steam engine coyly concealed by G.M. in their Oshawa, Ontario plant. Currently being dismantled, the engine is to be re-erected at Muskoka as part of the steam museum being assembled there by the Muskoka Steamship & Historical Soc. Generous G.M., besides donating the engine, is also footing the bill for transportation. The M.S. & H.S. is not only proud owner of the S.S. *Segwun* [SIAN Jan. 74:3] but is also to receive another major steam plant. This is a Goldie-McCulloch (Galt, Ontario) Corliss of approximately the same size as the Worthington but coupled to a generator. The Society intends to use this to provide power to the museum complex. Until recently, the set was being used for this purpose at the Weldwood sawmill in Huntsville. *R.J.C.*

CONTRIBUTORS TO THIS ISSUE

Richard M. Candee, Kittery, Me.; **R. John Corby,** Natl. Museum of Science & Technology, Ottawa; **Douglas A. Yorke,** Boston; **Mark R. Edwards,** Md. Historical Trust; **Jonathan C. Fricker,** La. Divn. of Archeology & Historic Pres.; **Margot Gayle,** Friends of Cast Iron Architecture; **Herbert H. Harwood,** Chessie System; **Donald C. Jackson,** HAER: **James C. Massey, Theodore A. Sande,** Natl. Trust; **David H. Shayt,** Natl. Museum of Hist. & Tech.; **Peter H. Stott,** Columbia Univ.; **John Wickre,** Minn. Hist. Soc.

RESPONSES

BRIDGE IDENTIFICATION

The location of the timber suspension bridge shown last issue really *wasn't* known—no trick; we asked in hopes of enhancing the historical worth of the photo. The response was considerable. All four who replied hit on the identical place, which we assume it is. But, interestingly, there were three separate routes to the answer. The purely scientific—rather engineering—method was used by Robert S. Mayo, tunnel and RR engineer, and Victor C. Darnell, bridge engineer, who pointed out what should have been the obvious: "station 5608" is 5608 "stations" (@100 ft. each) from the RR's zero mile-post, or: 5608 x 100/5280 = 106.1 miles from (in the Erie's case) Jersey City, N.J. That makes it Shohola, Penna., which, it so happens, is on the Delaware River at a point where the Erie makes a heavy curve to the left going west. The third rail is, as suspected, merely a guard rail. There still is a highway crossing near the spot today, via a steel through-truss, to Barryville, N.Y.

The third respondent, Richard S. Allen, as a bridge historian of note, quite appropriately simply *knew* that it was the Shohola-Barryville Bridge. The last reply, from railroad historian and all-round IA generalist Herbert H. Harwood was extraordinary, not to say slightly spooky: "I can't resist a contest [sic] even when I haven't the slightest idea of the right answer. I'll guess the mystery Erie RR photo as Shohola, Penna. I have no real basis for this since I can't identify that little susp. bridge—only just that it 'looks like the spot.' "

EIFFEL TOWER ELEVATORS

There seems to have been some concern at how a hydraulic plunger some 250-ft. long can support an elevator car without buckling. In plunger-type hydraulic elevators, it is a fact that when the car is at the bottom of the run the plunger(s) is under compression. But as the car rises, more and more of the counterweight cable is on the opposite side of the sheave at the top, the weight of which adds additional counterbalancing. When the car is perhaps a third of the way up, this weight actually *over* balances the car, but does not pull it up because more and more of the plunger now is out of its cylinder, not immersed in water, and so is "heavier." Thus the system balance is more or less constant. The effect of all this is that the top part of the plunger increasingly "hangs" from the car, rather than pushes it up, and so is in *tension* rather than compression. Only the bottom part of the plunger remains in compression, and as the car rises, this portion remains relatively short. In this "overbalance" condition, with the car in the upper reaches of the run, the water pressure is, in effect, raising only the lower part of the plunger. Clear?

•

Editor: Forgive my late response to the Sept. SIAN item "Going Broke Saving Water", which I cannot let pass without crying "fraud".

Our campus has 27 brick row houses built c1906 housing faculty and staff, each of which is equipped with a regular low-down tank on the upstairs toilet and a high tank on an additional cellar facility. On occasion we have to replace the overhead tank and can still obtain these from our regular plumbing supply-house for less than $30. The procelain part of the installation is a standard item usable with either low tank or flushometer and runs about $40-50.

Of course, the little pull-chain handle is wood instead of decorator-inspired gaudy but one must make some sacrifices. *Conrad H. Milster, Pratt Institute, Brooklyn, N.Y.*

•

Apology. The section last issue on railroad stations was written by John Wickre of the Minnesota Historical Society, not by Theodore A. Sande as noted.

PUBLICATIONS OF INTEREST

LeRoy H. Fischer, **The Fairchild Winery.** In *Chronicles of Oklahoma,* Summer, pp. 135-56. Details of construction, operation, and restortion of the Okla. City Winery, including a wind-pump irrigation system.

Paul M. Fink, **The Railroad Comes to Jonesboro.** In *Tennessee Historical Quarterly,* Summer, pp. 161-79.

A. J. Francis, **The Cement Industry 1796-1914: A History.** N. Pomfret, VT: David & Charles. 304 pp. $17.50. Principally in G.B. (To be reviewed in *IA.*)

Robert Lovell Frey, **A Technological History of the Locomotives of the Northern Pacific Ry. Co.** Unpubl. PhD dissertation, Univ. of Minn., 1971. 2 vol. 731 pp. Illus., tables, maps. Massive, detailed account from c1870 to dieselization.

H. Roger Grant, **Frank A. Seiberling & the Formative Years of the Midland Continental RR.** In *North Dakota Hist.,* Fall 1976.

Robert Gregory, **Oil in Oklahoma.** Muskogee, Okla.: Leake Industries, Inc. N.d. 90 pp. $10.

William C. Jones, **William Henry Jackson in Mexico.** In *The American West,* July/Aug., pp. 10-21. Reproduces several of the reknowned photographer's views of Central Mexicano RR, 1880s.

Wayne L. Kroll, **Badger Breweries, Past & Present.** 1976. Avail.: Author, Box 266, Jefferson, Wisc. 53549. 142 pp. $8.

Frank Kyper, **The RR That Came Out at Night: A Book of Railroading in & around Boston.** Brattleboro, VT: Stephen Greene Press. $8. An assortment of essays including the unearthing of South Boston's long-buried RR yard.

James Leavitt, Philip F. Notarianni, & Barbara Bannon, **Mining at Alta, Utah: A Further Look.** In *Utah Hist. Quart,* Spring, pp. 158-62. Interview with an Alta mining engineer.

John A. Lynn, **Reconstructing a Maine Lumber Camp of 1900: the Diorama as a Historical Medium.** In *Jnl. of Forest History,* Oct. 1976, pp. 192-202. Exhibits at Penobscot Heritage Museum.

Terrence McLaughlin, **Make Your Own Electricity.** N. Pomfret, VT: David & Charles. 128 pp. $7.50.

Colleen A. Oihus, **Street Railways in Grand Forks, N.D.: 1887-1933.** In *N.D. History,* Spring, pp. 12-21.

David D. Plater, **Building the North Wales Mill of William Allason.** in *Virginia Mag. of Hist. & Biog.,* January, pp. 45-50. Details of grist mill construction, 1775-77.

Ronald J. Plavchan, **A History of Anheuser-Busch, 1852-1933.** PhD dissert., St. Louis Univ., 1969. NY: Arno Press, 1976.

Leonard M. Pole, **Iron-working Apparatus & Techniques: Upper Ghana.** In *W. African Jnl. of Archeology* (Ibadan, Nigeria), 1975. pp. 11-39. Primitive furnaces & forges now in use.

Pamela A. Puryear & Nath Winfield, Jr., **Sandbars & Sternwheelers: Steam Navigation on the Brazos.** College Station, TX: Texas A & M Univ. Press, 1976. 140 pp. $10. Review: *Arizona & the West.*

P.T. Reilly, **Historic Utilization of Paria River** [Bryce Canyon Natl. Park, Utah]. In *Utah Quarterly,* Spring, pp. 188-201.

L.T.C. Rolt & J.S. Allen, **The Steam Engine of Thomas Newcomen.** NY (156 5th Ave., 10010): Neal Watson Academic Publs., Inc. 160 pp., illus. $15. The man (1663-1729) and the development of the first practical steam engine c1710-33.

K.T. Rowland, **The Great Britain.** Newton Abbot: David & Charles, 1971. 132 pp. $7. Account of the first iron-hulled, screw-propelled, ocean-going vessel: her conception by Brunel, and construction, career, and most interesting, rescue from deterioration and return to Bristol, her home port, to be restored.

Robert H. Ruby & John A. Brown, **Early 20th Century Blueprint for Transportation & Electrical Utilities on or near the Spokane Indian Reservation.** In *Idaho Yesterdays,* Spring 1976.

Bruce E. Seely, **Penna. RR Improvements in Wilmington, 1901-1908.** In *Ry. History Monograph* (J-B Publ. Co., Crete, Neb.), Oct., 1976. 32 pp. Good account of shops, great brick viaduct, station, &c. Photos, maps, shop machinery lists.

Charles Seims, **Mount Lowe: The Railway in the Clouds.** San Marino, CA: Golden West Books, 1976. 234 pp. $22. The Pacific Electric Ry. Review: *Calif. Historical Quarterly* 56/2.

G. Terry Sharrer, **Flour Milling in the Growth of Baltimore, 1750-1830.** In *Md. Historical Magazine,* Fall, 1976, pp. 322-33.

Dorothy H. Shrader, **Genealogy of a Steamboat** (The John Heckmann). In *Waterways Journal Weekly,* 22/29 Oct., 5 Nov. Building, operation, & collapse of a split sternwheeler, early 20thC.

Duane A. Smith, **The Promoter, the Investor, & the Mining Engineer: A Case Study.** In *Huntington Library Quart.,* Aug. 1976.

Merritt Roe Smith [SIA], **Harpers Ferry Armory & the New Technology: the Challange of Change.** Ithaca: Cornell Univ. Press. $15. Focuses on armory daily life 1798-1861, analyzing social implications of mechanicanized production & receptiveness to new technological advances.

John F. Stover, **History of the Illinois Central RR.** NY: Macmillan, 1975. 575 pp. $15. Positive review: *Business Hist. Rev.,* Summer 1977.

David G. Taylor, **Thomas Ewing, Jr., & the Origins of the Kansas Pacific Ry. Co.** In *Kansas History Quart.,* Summer 1976.

Mark J. Tierno, **The Search for Pure Water in Pittsburgh: the Urban Response to Water Pollution, 1893-1914.** In *Western Penna. History Magazine,* January, 1976 pp. 23-36.

R.F. Tylecote, **The Origin of Iron Smelting in Africa.** In *W. African Journal of Archeology* (Ibadan, Nigeria), 1975, pp. 1-9.

Sally Vernon, **Trouble Up at T'Mill: The Rise & Decline of the Factory Play in the 1830s & 1840s.** In *Victorian Studies,* Winter, pp. 117-39. Discusses a body of plays that approached factory conditions with "stark realism."

Jim Walker, Ed., **The Yellow Cars of Los Angeles.** 320 pp. $27.50. Avail.: Interurbans, P.O. Box 6444, Glendale, CA 91205.

Anthony F.C. Wallace [SIA] & David J. Jeremy, **William Pollard & the Arkwright Patents.** In *William & Mary Quart.,* July, pp. 404-25. The transmission of cotton processing technology from G.B. to the U.S., especially as it involved P., who in 1791 received the first U.S. patent for cotton mfg. machinery.

Brendan Wesley, **Virginia & Truckee Railroad Revisited.** In *Nevada Magazine,* Vol 36 No. 4.

Wisc. Electric Ry. Hist. Soc., **East Troy, Wisconsin Trolley Museum Guide Book, 1975.** 12 pp. $.70 PP. 3412-A Fratney St., Milwaukee, Wisc. 53212.

Frances Wold, **The Washburn Lignite Coal Co.: A History of Mining in Wilton, North Dakota.** In *N.D. History,* Fall 1976.

Otis E. Young, Jr. & Robert Lenon, **Black Powder & Hand Steel: Miners & Machines on the Old Western Frontier.** Norman: Univ. of Oklahoma Press, 1976. 196 pp. $10. Review: *Arizona & the West:* ". . . perhaps the major contribution . . . is the explanation of the evolution of certain basic mining technologies."

REPRINTS

Edgar Myron Kahn, **Cable Car Days in San Francisco** (1940-44). Oakland: Friends of the S.F. Public Library, 1976. 133 pp. $5. paper. Review: *California Historical Quarterly,* 56/2.

J.P.M. Pannell, **Man the Builder** (1964). NY: Crescent Books, 1977. 256 pp., 165 illus. $5. (Orig. title: **An Illustrated History of Civil Engineering.**) Good general survey covering roads, rivers & canals, railways, docks & harbors, water supply & public health, and bridges. Bibliography.

Robert Edgar Riegel, **The Story of the Western Railroads: From 1852 through the Reign of the Giants** (1926). Lincoln: Univ. of Nebraska Press, 1977. 345 pp. $15/4.

Ethel M. Springer; annotated by Thomas F. Hahn [SIA], **Canal Boat Children on the Chesapeake & Ohio, Penna., and N.Y. Canals.** (c1921). Shepherdstown, WV (Box 310, 25443): American Canal & Transportation Center, 1977. $3.50 PP. Reports of studies by the Children's Bureau, U.S. Dept. of Labor, and the Commonwealth of Penna., creating a social history of life on the last U.S. canals. Hahn has added notes and period photos.

Sewering the Cities. An Original Arno Press Anthology. NY: Arno Press, 1976. Includes: George E. Waring, **The Death Rate of Memphis** (1882); Frederick S. Odell, **The Sewerage of Memphis** (1881); Rudolph Hering, **Sewage Works in Europe** (1882); Hiram F. Mills, **Filtration of Sewage and of Water, and Chemical Precipitation of Sewage** (1890); Leonard Metcalf & Harrison P. Eddy, **The Lessons Taught by Early Sewerage Works** (1914).