

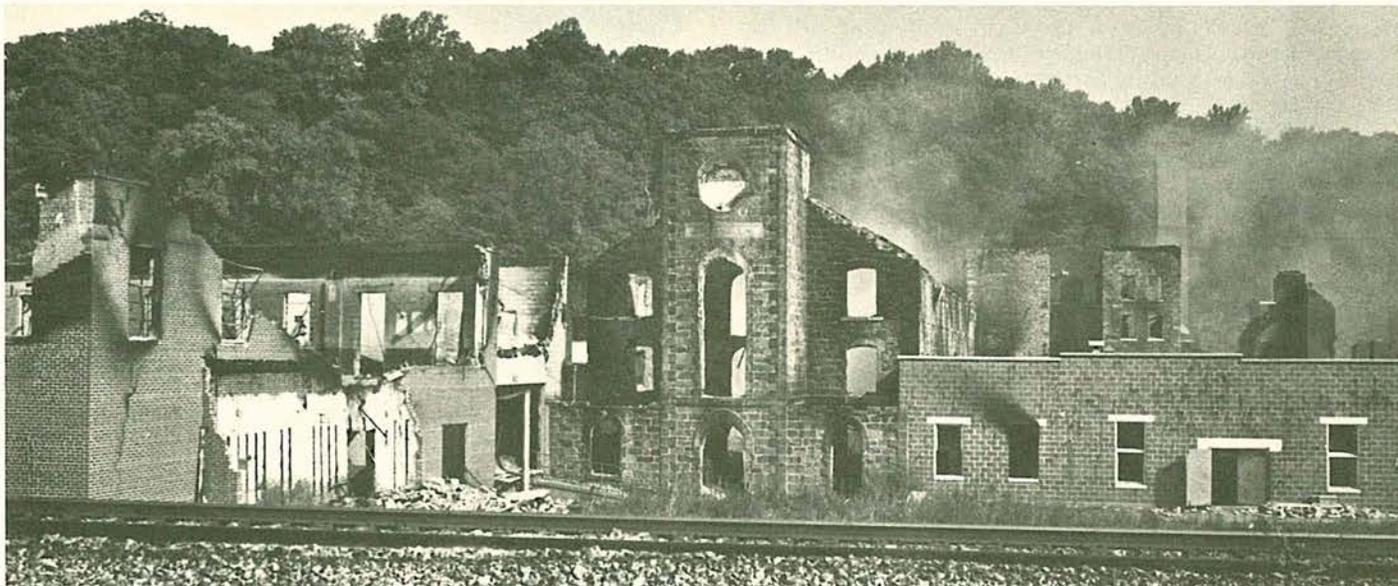
SOCIETY FOR INDUSTRIAL ARCHEOLOGY

NEWSLETTER

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November 1977

CONFLAGRATORY LOSSES



† FLOOD—FIRE—FINIS. Daniels Mill, September 1977 †

Howard County Times photograph by Keith Weller.

The destruction of American industrial sites by fire continues, the fateful constituents seeming most frequently to be an abandoned, unwatched textile mill, and arsonous vandals. The most tragic of recent incidents —

HOLOCAUST AT DANIELS

With the near total destruction by a fire of unknown (but "suspicious") origin on 17 Sept., the Free State lost a 19thC cotton mill regarded as architecturally one of the most elegant in the U.S. The Daniels Mill was erected in 1841 at a falls of the Patapsco in

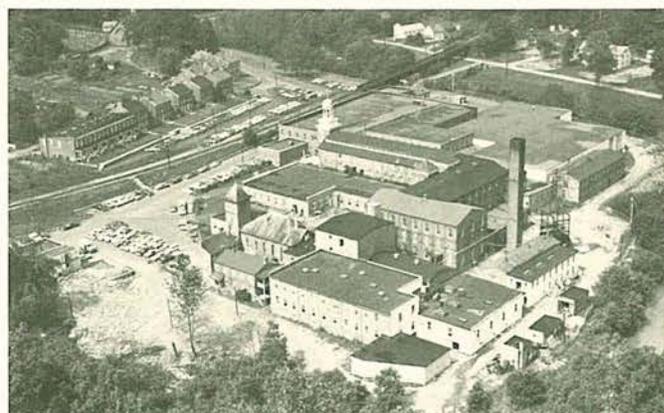
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. . . AND IN RHODE ISLAND

Where there is the greatest number of abandoned mills, there, inevitably, will be the greatest number of these unfortunate events. Two of the finest mills in R.I. also suffered total or heavy loss this fall, reported by Slater Mill Historic Site's *The Flyer*.

The Forestdale Mill, in Forestdale Village, N. Smithfield, was built as a cotton mill in 1860, had for some time been an underwear knittery (Stamina brand), and last was in use as a yarn mill. It had been abandoned for a short time and, ironically, soon was to have been converted into apartments. The whole incident is thus heavily

Continued page 2 . . .



Alborton Mill, c1870, and as the Daniels Mill, 1968, the housing partially demolished (lower left).

Natl. Museum of History & Technology photographs.

... Daniels

Howard Co., Maryland, about six miles above Ellicott's Mills, W. of Baltimore. Less than a decade earlier the Baltimore & Ohio RR on its way westward had gone right through the site, providing ready access to the port of Baltimore. The factory was known as the Ely Mill, and the attendant company hamlet as Elysville. About 20 years later the place was purchased by James S. Gary and both mill and village renamed Alberton. The sole product, as with practically all of the great family of mills in the Baltimore area, was canvas, duck, sail cloth, and like products. (By the mid 1870s the area produced 2/3 of all made in the U.S.)

Shortly before WW-II, the mill and town again were purchased, by the C.R. Daniels Co., who changed the town's name once again, now to Daniels, the place thereby becoming a sort of latter-day Istanbul. The Daniels' considerably enlarged the mill, new structures nearly swallowing up the original mill and its various 19thC accretions in classical textile-mill fashion. The whole, with surrounding housing of various periods, company store-post office, and several churches, all built and owned by the corporation, formed in their totally isolated rural setting one of the most perfect textile villages to survive in the country; probably the best example outside New England.

The integrity was lost when in 1968 the first of three disasters struck Daniels. In a move harshly criticized by both the socially and historically concerned, the Daniels firm peremptorily demolished every stick of housing, declaring that they wished no longer to be in the housing business and couldn't sell the buildings because of inadequate sewerage. Overnight a charming mill town was transformed into merely a mill.

The next disaster was a natural one. The flooding of the Patapsco following Hurricane Agnes in June 1972 raised water to the 2nd-floor level and destroyed practically all machinery, putting an end to operations (which by then was fabrication of canvas and duck products from cloth woven at Daniels' southern mills). The silt and debris carried into the mill by the flood had simply been left, until early this year when the wracked and abandoned complex was bought once more, now by a group of local businessmen who planned to lease space to a variety of warehousing and light manufacturing operations.

A small portion of the 250,000 sq. ft. already had been let when the fire struck, totally destroying or gutting about 75% of the interconnected buildings, sparing only a small remote group of old structures and one erected by the new owners. They plan to rebuild, hoping that the principal front of the original mill can be preserved—perhaps incorporated into a new building—on the basis of its historical importance. The site had been in the Natl. Register.

... Rhode Island

reminiscent of the Crown & Eagle Mill tragedy [SIAN July 75]. The mill's crowning glory was a spectacular shingle-style bell tower of 1885. The loss was total, although the mill housing across the street escaped.

In the state's S.W. corner, N. of Westerly, on the Pawcatuck River stands the **Potter Hill Mill** complex, with elements surviving from as early as 1835. The key structure is a striking Greek Revival mill of 1840 rendered in red granite in which—when abandoned in the late 1950s—all machinery was left in place, an extraordinary and historically fortuitous circumstance. By the grace of good fortune, the fire damaged only part of the site and spared this building, but the earliest portion, a frame structure also in the Greek Revival style, was lost. The site still is subject to vandalism, however, and unless protected will continue to survive only on borrowed time.



Forestdale Mill in better days (1968) and the Potter Hill Mill in hard times.
Potter Hill photograph by Patrick M. Malone.



EXHUMATION NEEDED

The subterranean fate of Chesapeake & Ohio Ry. locomotive 231 (4-4-0 by Baldwin, 1903) is related by Walter S. Griggs, Jr. in "The Church Hill Tunnel" (*RR History*, Fall 1976, pp. 43-58). The tunnel was built by the C&O in 1872-73 beneath Richmond, Va's. historic Church Hill, which consisted mainly of Miocene clay or blue marl. Using the block-arch (American) system of timbering, the 3927-ft. tunnel was bored with the greatest difficulty and incurred numerous cave-ins, including one where several houses tumbled and somersaulted into a 100-ft. long fissure.

With the construction of the James River Viaduct in 1901, the tunnel became obsolete. By 1925, however, viaduct traffic had become so heavy that it was decided to enlarge and reopen the old tunnel, strengthening it with large concrete rings. On 12 Oct. 1925, as part of the new work, No. 231 moved 10 flat cars into the tunnel. On the way out the opposite end the engine's vibrations precipitated a collapse of the soft clay, caused in part by years of water seepage weakening the masonry walls, and by the lack of complete longitudinal bracing, as an investigation revealed.

Nine days later, three 57-ft. rescue shafts sunk from the top uncovered the engineer's body, pinned in the crushed cab by the reverse lever. Continued searches never located several other bodies and faced with a removal cost of \$30,000, C&O decided to

bury 231 *et al* by sealing one portal and filling most of the tunnel with sand. Today rusty tracks still run into the hill through the weed-obscured, concrete-sealed west portal behind which 231 lies interred, while the east portal is open and used as a C&O-Southern Ry. transfer track. *R.M.F.*



Church Hill Tunnel, Richmond, in 1925, just prior to its collapse. *Dementi Studio (Richmond) photograph.*

ANTIQUARIAN TILE WORKS RESTORATION



Mercer Tile Works, court yard.

The Moravian Pottery & Tile Works, Doylestown, Penna., established in 1898 by Henry Chapman Mercer and opened as a museum by Bucks Co. Parks and Recreation in 1967, is in the process of restoration as an early 20thC manufactory.

Mercer was an eccentric collector of the material survivals of American pre-industrial technology. He also was an early—and highly idiosyncratic—practitioner of reinforced-concrete architecture. He designed and built in Doylestown *Fonthill* (1910), his rambling castle-like residence, and The Mercer Museum (1915) to house his extensive collection of the tools and finished products of about 40 American handcrafts. In 1898 Mercer decided to devote himself to the preservation of a declining Penna. German traditional pottery. Finding the local clay unsuitable for pottery, however, he instead established a small-scale manufactory of ceramic tiles for fireplaces, floors, walls, and a variety of special purposes. In 1912 he moved the factory to its present site—another of his concrete extravaganzas—fashioned as a composite of three Calif. mission churches he had seen in photographs. The factory had its heyday in the 1920s. Production dwindled after Mercer died in 1930 and the works eventually closed.

Caught up in contemporary thinking about the dehumanizing influence of modern technology, Mercer intended to stick to traditional handcraft methods of production but, in fact, he used primarily industrial, if sometimes outmoded techniques.

Tiles now, as in Mercer's day, are made from local clay—Mercer left a 30-year supply of which 400 tons remain. A hand-pressing machine of his invention is used to form the tiles following the factory's original designs.

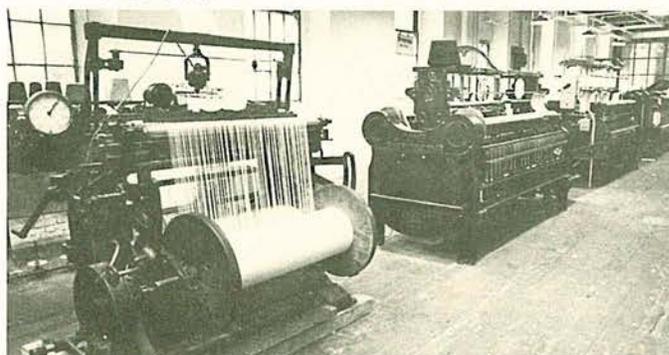
One of the five 1912 coal-burning bottle kilns was put back into use last summer, for firing unglazed tiles (some of which later are glazed and refired in a modern electric kiln). The bottle kiln is fired first in an updraft and then in a downdraft atmosphere. During the slow pre-heating stage (to about 800° F) the two fireboxes are stoked with wood and the heat allowed to ascend behind baffle walls through the stacking area and out through a roof vent into the tall crown or "bottle" above. For the later stages of firing (to about 2000° F) soft coal is used and the heat is re-directed downward—that is, it still ascends behind the baffle walls but then is drawn through the stacking chamber by a draft created by opening floor and wall flues. Higher temperatures are more quickly and efficiently reached by the maximum circulation of heat in the downdraft atmosphere. The kiln is fired about 4 or 5 times a year. It takes c25 hours to reach the desired temperature and two days for cooling.

The clay presently is worked by hand but restoration plans include use of Mercer's 1888 pug mill (thought to survive from the original 1898 works), belt-driven by a Metropolitan side-crank steam engine of 1912, fed by a coal-fired vertical boiler (a 1930 replacement for the original). Mercer disapproved of electricity and none was installed in the factory.

The engine and pug mill can readily be put back in working order but the boiler has been condemned and its replacement must be installed away from the public, and attended by a licensed engineer. Cost, exclusive of engineer, is estimated at \$10,000. (Questions/Suggestions: Breeze Sobek, Ceramist, Moravian Pottery & Tile Works, Swamp Rd., Doylestown, PA 18901). *S.H.M.*

THE MUSEUMS

THE LOWELL MUSEUM, located in the Suffolk Mill at the junction of Lowell's Northern and Western canals, is in an excellent position to provide interpretation of the city's history. Although the Museum's ostensible purpose—to tell the story of Lowell—could have been accomplished in a number of ways having little interest for industrial archeologists, Lowell's unique situation in American industrial history does serve as the unifying theme in the Museum's exhibits.



The Museum, which opened last fall, offers a notable example of the economies of adaptive reuse; renovations to turn part of the mill into a museum cost only \$3.50/sq. ft. The initial exhibits were developed under a NEIT grant. In one part of the exhibit a series of panels sketch Lowell's geographic, economic, industrial, and ethnic growth. The panels contain copies of contemporary maps, prints, and photos, along with interpretive text. Two period rooms—a women's boarding house room of 1840 and a tenement kitchen of 1930—provide some sense of the living conditions of factory operatives at different stages of Lowell's development.

The other part of the Museum's exhibit is a complete set of cotton machinery: card; drawing frame; roving frame (slubber); spinners; spooler; warper; and looms, all of which are run regularly. The machinery dates from the late 19th and early 20thCs. Although there are not yet adequate interpretive panels for the machinery, the guides are trained to explain the steps in cotton-cloth production and to operate the machinery. The Museum sells the cloth produced in its shop.

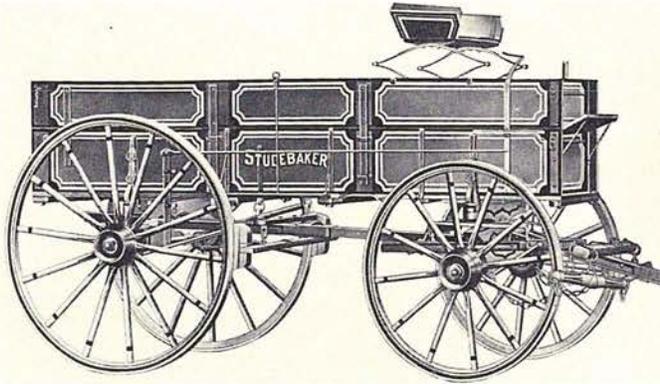
The description of the steps of cotton production orients the visitor for a tour of an operating textile factory. The Wannalancit Textile Co., which also occupies the old Suffolk Mill, can be visited as part of the guided tour. Wannalancit does not produce its own yarn, but does have winders, twistors, warpers, slashers, and two weaving rooms with 200 operating shuttle looms each. The din of the weaving rooms offers a deafening and shaking experience of working conditions in a mill and greatly enlivens the Museum's interpretative program. *S.V.*

THE B.C. SUGAR MUSEUM opened 5 May at the British Columbia Sugar Refining Co's. Vancouver refinery. (Curator, Nicholas Dykes, P.O. Box 2150, V6B 3V2. (604) 253-1131.)

TANNEHILL. The Ala. legislature has approved funding for the construction of the Ala. Iron & Steel Museum at the Tannehill Historical State Park, site of one of the South's most important ironworks, and more recently site of a noble attempt to produce iron cannon in the newly restored No. 1 Furnace [SIAN, Sept & Nov 1976]. In 10,000 sq. ft., the Museum will house historical collections of local iron-making machinery, tools, and products; research rooms; and a small library. The Tannehill site already includes a working gristmill, blacksmith shop, farm, sorghum mill, and 12 19thC log cabins. (Director, James R. Bennett, Tannehill State Park, Rt. 1, Box 124, McCalla 35111. (205) 477-6571.)

DISCOVERY HALL, a museum tracing the rich industrial, technological, and commercial history of South Bend, Ind., will open in that city on 1 Nov. Starting with the Studebaker Collection of 48 horsedrawn and motorized vehicles (all but five by Studebaker) the museum expects to expand its collections to include representative examples from the area's many

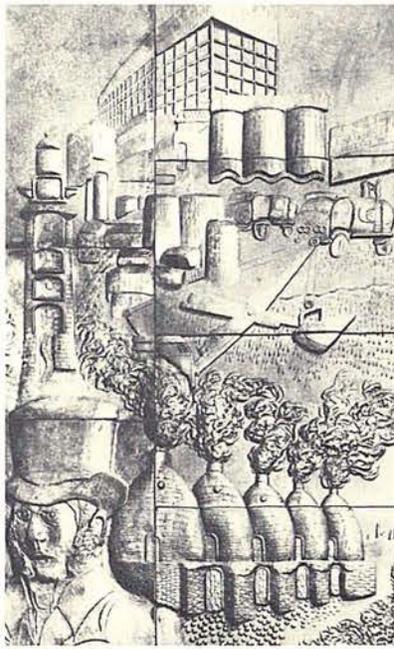
manufactories—largely makers of farm equipment. (Director, Richard Welch, 120 S. St. Joseph St., 46601. (219) 284-9714).



The Studebaker farm wagon, basis of the firm's success. The Discovery Hall example is of c1920, one of the last manufactured. *Discovery Hall*.

IA IN ART—The History of Cement in Concrete

The artistic media in past episodes of *IA in Art* have been more or less conventional, which leads us to wonder why, in fact, concrete does not find wider use in sculpture. It is not unknown, of course, particularly for architectural embellishment in repeat motifs where the material is treated as a substance easily cast in molds made from a common pattern; viz: the automobile fronts that adorned the late Capital Garage (1926) in Washington [SIAN Jan 74:4] and the pre-cast panels that seem to be the basis of most of today's office buildings. But in a "one-off" situation—that's uncommon.



History of Cement—mural in natural pewter gray concrete, for the Cement Marketing Co., Ltd., London. 8 x 5 ft. *Cement & Concrete Assn. photograph by S.W. Newbery.*

Actually, it seems in this case to be two-off, for the example that was discovered, quite by chance on an outside wall at its makers on a back street in Stoke-on-Trent, apparently was either a trial run or a second impression. The principal strike is in the entrance hall of Portland House, London HQ of The Cement Marketing Co., who commissioned the mural in 1968. The medium is, of course, no accident, for depicted is the history of concrete, naturally somewhat foreshortened. K.H. Brittain of CMC Co. describes the mural's elements:

"The building at the top . . . is this office built of reinforced concrete. Below is a modern unidentified cement works. The tall building is the old Eddystone Lighthouse 12 miles south of Plymouth [1759, the upper 2/3 reerected on shore at Plymouth, 1882 with a new lower 1/3]. The engineer was John Smeaton who pioneered excellent hydraulic limes for use in marine foundations. The bottle kilns were at our Northfleet [on the Thames, E of London] Works, where we now have a 4,000,000 tonne a year plant. The pellets are, we think, grinding media, as used in cement kilns [mills?]."

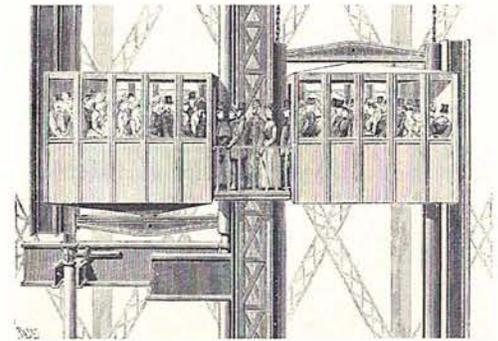
"The figure . . . is a representation of Joseph Aspdin [1779-1885], who is commonly held to be the inventor of Portland cement . . ."

The sculptor was David Thomas of Minkstone Products, Stoke, who specialize in concrete murals and panels.

MISCELLANEOUS SITES & STRUCTURES

The 1874 PUMP HOUSE in Vergennes, Vt. [SIAN Sept./Nov. 1976:9] is the subject of what appears to be a viable proposal by two local businesses to restore the building and use it for combined offices. The city seems to like the idea since they would not be burdened with rehabilitation or maintenance costs, vandalism would be deterred, and a 20-year lease plan includes landscaping and parking provisions. The developers are sensitive to the IA side and would restore the Flanders pump and keep changes to the interior at a minimum so as not to preclude reversion to the building's original purpose. (*Possibilities*, Vol. 2, Nos. 1&2.)

CREAQUES IN THE ASCENSEUR. To reach the summit of the Eiffel Tower, over 900 ft. above the ground, requires using two separate elevator systems. Each is radically different from the other, although both are (water) hydraulic. That from the ground to the 2nd *Étage*, 380 ft. up (negotiating the curve at the 1st *Étage*) was installed for the world's fair of 1900, but the system between there and the top is original equipment, sole survivor of the three installed in 1889 during the tower's construction. It is unique in elevatordom, devised by Parisian engineer Leon Edoux.



Changing cars 780 ft. up. Edoux system, intermediate platform. Upper car with plungers on left. *La Nature*, 1889.

The 520-ft. rise is divided into two equal runs, with a separate open shaftway for each, offset, sharing a common central guide. The lower run extends from the 2nd *Étage* to an intermediate platform; the upper from there to the top. In each shaftway is a car, the two connected by cables running over sheaves at the tower top, the two thus being in approximate balance. The trip is made in two stages, up passengers changing from the lower car to the upper at the intermediate platform and vice versa for the down trip. The motive power is provided by a pair of plungers set below the upper car, taking water from a reservoir at the tower top. The reason for all this explanation is that the Edoux system, going on ninety, is getting crotchety and needs a major overhaul, estimated at \$6.3 million. The real tragedy is that one option being examined is total replacement by a *système électrique*.

STARRUCCA HOUSE. The Erie RR's ill-starred station/hotel at Susquehanna, PA. [SIAN Jan 75:1], whose life has been hanging by a thread for most of the past decade, seems to have lost the will to live. Despite all valiant preservation efforts within the town and surrounding borough nothing seems to have worked. The latest blow is talk by Conrail of removing a small communications office that is the sole occupancy of the beleaguered structure and now all that justifies its continued existence. Contributing to the atmosphere of gloom is the continuing demolition of the adjacent Erie shop buildings, long since abandoned. Somebody do something.

THE IA OF ARMAGEDDON. Robert Hoke [SIA] advises that there has recently been placed in the Natl. Register a One-Million-Liter Test Sphere, located at Ft. Detrick, near Frederick, Md. You will be helped in understanding what in the world a OMLTS is, when we remind you that Ft. D. is the Army's infamous center for biological warfare studies. The steel Sphere, in use from 1951 to 1970, is 40 ft. in diameter, with various access ports at its equator. It was used, according to the NR nominating form (prepared by the Army), "... for aerobiological studies of agents highly pathogenic to man and animals..." It was nominated for its place in the history of science. (From Md. Historical Trust's *SWAP*).

HOLLAND TUNNEL GOLDEN. The first ventilated modern vehicular tunnel celebrated its 50th anniversary this month, being awarded a bronze plaque dedicated to "The underground highway which joins a continent to a city." The tunnel (actually twin iron-lined tubes) opened on 12 Nov. 1927 providing a motor connection beneath the Hudson between Jersey City and N.Y.C. Work began on the bore in Oct. 1920 under the direction of Chief Engineer Clifford M. Holland, who died just two days before the first tube was holed through in 1924.

NELIGH MILLS HISTORICAL SITE. Located on the Elkhorn



Neligh Mills, c 1915. *Nebraska State Historical Soc. photograph.*

River in Neligh, this 1874 flour mill has been restored to its 1900-15 appearance by the Nebraska State Hist. Soc. Also restored are the headgate, flume, and penstock of its 1919 water-power system. Power was supplied by a 45-in. vertical Samson turbine purchased in 1899 from James Leffel & Co. A Roebling wire cable transmitted power to machinery. The mill contains seven stands of rollers manufactured by the Case Mfg. Co., Columbus, Ohio. At one time its capacity reached some 300 bbls. of wheat flour, 250 bbls. of cornmeal, rye, and buckwheat, plus livestock feed. The Neligh Mills ceased operation in 1952 and was listed in the Natl. Register in 1969. It also houses a display area devoted to flour milling and agricultural exhibits. *E.P.*

SUB-AQUEOUS & -TERRANEAN EXHUMATION. A model to all who would think deeply about IA are the efforts of the North Staffordshire (England) Mining Club and the Peak District Mines Historical Soc. to dismantle and bring to the surface an 1819 Cornish beam engine at Winster, installed nearly 400 ft. below ground to pump water from a lead mine. It was abandoned with the mine in the 1850s and was discovered by enthusiasts when the water in the flooded mine greatly subsided during the unusually dry summer of 1975.

ADAMS MILL on Wildcat Creek, near Kokomo, Ind., built in 1845 and in operation until 1952, has been restored and opened to the public. Built for flouring and corn milling, originally it had separate runs of buhrs. In the 1880s the flour stones were replaced with four banks of rollers and the present flouring machinery was added. Two generators were added in 1913 and the mill for a time supplied electricity to the surrounding community. Now restored largely to its 1880s appearance, the four-story frame structure has been nominated to the Natl. Register.

NASSAWANGO IRON FURNACE [SIAN Jan. 76:3-4] is being restored by the Worcester Co., Md. Historical Soc. with the support of a \$17,500 grant from the Md. Historical Trust's 1977 capital projects budget. A museum is planned.

Belmont, N.Y. residents are anxious to begin restoration of an eight-mile stretch of the **GENESEE RIVER CANAL** (connected Erie Canal with the Allegheny River, S. of Olean.) but are prevented by the need for local government sponsorship. This obtained, it is expected that the state will transfer the property to them at a nominal fee. Plans include rewatering part of the canal for boating and ice-skating and creating hiking and biking trails.

EAST TOLL-GATE HOUSE of the Flushing-North Hempstead Toll Road Co., built at Roslyn, Long Island before 1860, has been restored with funds provided by the Town of North Hempstead, individual contributions, and Bird & Son, Inc. of E. Walpole, Mass. The board-and-batten structure is the only surviving example of a type once common on Long Island.

The Oregon Historical Soc's. annual "**TRAPPERS' RENDEZVOUS**" in June visited mines and mining towns in eastern Oregon, survivals of the area's late-19thC gold boom.

THE WEST FELICIANA RR's Office and Banking House has been nominated to the Natl. Register. The WF was the first interstate line in the South, extending from a river landing at Bayou Sara, La., to Woodville, Miss. Constructed 1836-42, it is the oldest RR in the Mississippi Valley, and its 1834 **Office and Banking House** stands as one of the earliest RR buildings in the US. The Banking House was purchased by the Woodville Civic Club in 1973 for use as a museum. The line currently is owned by the Illinois Central Gulf RR. *T.A.S.*



Miss. Dept. of Archives & History photograph by Gregory B. Free.

SAVED, FOR THE MOMENT: N.Y.C.'s Grand Central Terminal, when the N.Y. Court of Appeals on 23 June upheld a lower court decision on affirming the building's designation as a historic landmark and denying its owners, the Penn Central RR, the right to construct an office tower on top of the terminal. The decision stated that the terminal, as a "historical, cultural, and architectural resource," was created both by the railroad and "by the society which permitted it to evolve," and concluded that both the private and public investors have a right to have their investments protected. Copies of the court's decision are available for \$1 from the Preservation League of N.Y. State, 13 Northern Blvd., Albany 12210.

AN ADAPTIVE USE (maybe) for the Worcester (Mass.) Union Station. The 68-year-old Penn Central station and its 4 1/2-acre site in January attracted an offer of c\$350,000 from a potential buyer considering rehabilitation of the building (for a further \$500,000) for use as a sports facility. In a 20 September referendum citizens approved construction of a civic center to be built in the vicinity of the station. With the referendum now settled the RR may now settle its back tax negotiations with the city and take some final action regarding the station.



IDENTIFICATION NEEDED. Is the location of this timber-tower suspension bridge known to anyone? On Erie RR, identified only as "at Sta. 5608 looking west." (i.e., survey station, not depot.) Outer track appears to be dual gauge, although the Erie converted from the broad gauge in 1880 and the photo looks like 1920s. Perhaps a narrow-gauge operating jointly with the Erie; or merely a guard rail on a heavy curve? Ed.

Quotable Quotes: Self-Effacement Divn. From a to-be-nameless English sister publication: "You won't have noticed, but it is over a year since your last newsletter. Please excuse me."

Contributors to this issue: William P. Chamberlin, N.Y. State Dept. of Transp.; Robert M. Frame III, Minn. Hist. Soc.; Patrick M. Malone, Slater Mill Hist. Site; James C. Massey & Theodore A. Sande, Natl. Trust; Susan H. Myers, Natl. Museum of Hist. & Tech.; Eli Paul, Neb. State Hist. Soc.; Stephen K. Victor, Yale Univ. Art Gallery. With thanks.

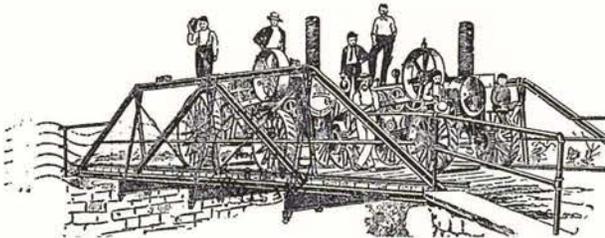
THE INTERESTING IRON BRIDGE OF THE BI-MONTH LANE'S PATENTED RAILROAD IRON BRIDGE

In an encouraging example of historical awareness and public interest, Highway Supt. Walter J. Tennant of Cortland Co., N.Y. has arranged for preservation of one of the few surviving examples of Lane's Patented Railroad Iron Bridge. Until October, this 36-ft. single-lane structure carried the lightly traveled Keeney Settlement Crossroad over a Branch of Tioughnioga Creek. Replaced to permit enlargement of the hydraulic opening beneath the bridge, it was transported 12 miles west where it will be installed next summer as a pedestrian and bicycle crossing at Little York Lake County Park, 60 miles N.E. of the site of its manufacture in Painted Post.

The Keeney Settlement bridge was built c1900 by the Lane Bridge Works on the 1890 and 1894 patents of Daniel F. Lane, the proprietor. Its predominant feature was the use of new railroad rails for compression members in a Howe truss configuration. Rails also were used for the lower tension chord and occasionally for transverse floor beams. While Lane also produced more conventional, pin-connected low Pratt trusses in spans up to 85 ft., his Railroad Iron Bridge was manufactured in lengths from 15 to 60 ft. with 2 to 6 panels. The bridge's appeal was probably economic, deriving from its light construction and simplicity of fabrication. Skeptics of its integrity were encouraged to consider the guarantee represented by the testimonial in the accompanying woodcut.

This little bridge survives as an interesting example of one of the oddities of 19thC technology. It is unusual not only in its use of the Howe truss form, rare in metal truss bridges, but also in its apparent ability to capture a niche in a pony truss market dominated by the pin-connected Pratt and riveted Warren styles. Like other patented bridges before it, its invention probably was the stimulus for its creator's venture into the bridge-building business. Other survivors are known at Willow, N.Y. and McDowell, Va. *W.P.C.*

LANE BRIDGE COMPANY, Painted Post, N. Y. Hightstown, N. J., February 28, 1894.
Dear Sir—The Forty-one foot span of your patent Railroad Iron Bridge we sold to Mercer and Middlesex counties jointly, was duly erected, and, on the day appointed for the committee to meet and inspect it I had two of my largest traction engines out there and after they had examined it otherwise, I had the two engines run across it side by side to the satisfaction of all present, and, to their astonishment the depression was hardly perceptible even in center of span—and of course the bridge was accepted unanimously.
Respectfully,
R. D. NORTON.



Lest you harbor any doubts . . . Lane testimonial envelope. *Richard S. Allen Collection.* Below—Lane bridge in Town of Cuyler, N.Y. *Cortland County Dept. of Highways photograph, 1974.*



MISCELLANEOUS NOTES

News of Members

EUGENE S. FERGUSON, Curator of Technology, Hagley Museum/Prof. of the History of Technology, Univ. of Del., was awarded the Soc. for the History & Technology's Leonardo da Vinci Medal at its annual meeting in Oct., in recognition of his "outstanding contributions to the history of technology through teaching and publications" . . . and, we would add, exhibitions and overall guiding spirit.

B. MICHAEL ZUCKERMAN, late of Brown Univ., has taken a

post as survey analyst for the State of Minn. There is another opening for this position—details *SIAN* Sept. 77:7.

THE PROGRESS OF INDUSTRIAL ARCHAEOLOGY, R.A. Buchanan's Presidential Address to the Assn. for Industrial Archaeology, is available. It deals with past achievements, present problems, and future directions. 11 pp. \$.50. From Centre for the Study of the History of Technology, Univ. of Bath, Bath, BA2 7AY, England.

MASTER MACHINIST: Position Available. Full-time career with spectacular steam RR in Calif's. redwoods. Geared & side-rod locomotives, 3-ft gauge. Must be skilled in locomotive maintenance, heavy shop work, &c. Ideal living conds. Resume & salary history to Genl. Mgr., Roaring Camp & Big Trees N-G RR, Big Trees Ranch, Felton, Santa Cruz Co., CA 95018.

PROFESSIONAL ARCHEOLOGISTS, ARCHITECTS & HISTORIANS needed in Paterson, N.J. for both research and field work. Resumes to Roger Holzen, Dept. of Community Develop., 100 Hamilton Plaza, Paterson, N.J. 07505.

PRESERVATION OF ENGINEERING STRUCTURES. A conference. 25-30 June, Franklin Pierce College, Rindge, N.H. Sponsored by the Engineering Fndn. Details to follow.

ENERGY: Modern Uses of Traditional Sources. Spring Weekend, 18-19 March. *Wood as a Heat Source; Water as a Power Source* (Theodore Z. Penn; Russell I. Fries [SIA]); *Household Energy Use.* Old Sturbridge Village, Sturbridge, Mass. 01566. (617) 347-3362. Flyer available.

STEAM SHOVEL. Short film inspired by the fascination of observing an antique steam shovel, in operation, up close. Documentary/mood piece, w/o narration, starring a 1920 Bucyrus-Erie with supporting cast of Model Ts and other on-lookers. "It is a kind of 'character study' revealing the many-sided personality of the men, the era, and the technology that produced the machine." So says its producer, Tom Koester, 918 Havenhurst #103, Los Angeles, CA 90046. (213) 654-8089. 16mm, color, 7 min. Rental: \$10; purch.: \$120. Remember—it was your basic Bucyrus-Erie that subjugated Culebra Cut.

MACHINERY SOUGHT & OFFERED

Look—we just knock off the flywheel, stick a few wheels under her, an oil drum for a boiler, a bell & whistle, and who'll know the difference . . . There seems to be a problem here: the locomotives in short supply and the stationary engines in long.

WANTED: A PATERSON-BUILT LOCOMOTIVE. The Great Falls Development Corp., the non-profit organization sponsoring restoration and re-use in the historic industrial district of Paterson, N.J., has intensified its longstanding search for a locomotive by any of the five builders that in the 19thC flourished in the city, to serve as a key object in a museum to be located in the former Rogers Locomotive Works erecting shop. A **Rogers** would be fine, or one manufactured by **Cooke, Danforth, Grant, or Swinborne.** Any & all offers, deals, and conditions considered. Contact: Jack Stokvis [SIA], Proj. Mgr., GFDC, 176 Maple St., Paterson, NJ 07522. While on the other hand . . .

AN AMES UNIFLOW engine-generator is offered gratis—as-is, where-is, to any reputable organization (or individual). Built 1932, 19 x 20-in. cylinder, direct-connected to 120 KW AC/DC generator; 18 x 12 ft. overall. Harold Pell, Shrader's, 111 Vine St., Greenville, Ohio 45331. (513) 548-5101. But the prize . . .

The celebrated Tyre Rubber Co. RICE & SARGENT ROPE-DRIVE CROSS-COMPOUND CORLISS, Andover Mass. The R&S, built by the Providence (R.I.) Engineering Corp., was among the finest of the class, hundreds being mfd. This example, of 1912, is in perfect condition, and also is (apparently) available for the removal to a tax-deductible group. 1000 h.p.; 20 x 15 ft.; 12-ft x 42-in wheel, grooved for the ropes; 18-ft. x 21-in. driven wheel also available. Arthur Ermer, Converse Rubber Co. (617) 657-5536.

OBSERVED: Misc. lot of *Engineering & Building Record*, 1887-89, at Goodspeeds, 2 Milk St., Boston; \$1 each.

With this volume's final issue it is—as customary—a pleasant obligation to express our very real gratitude to all of you out there in readershipland who have fed the *Newsletter* throughout the year. Little of what appears is generated at the home office; most of it is the result of your good selves "sending along" articles, notes, and references of one sort or another. Some we pick up from sister publications with whom we exchange. But best of all is the material that arrives in the form of articles or whatever, ready-to-run. Those are true winners for they *so* ease the life of the strictly voluntary editorial staff. But to all—the writers and the dispatchers alike—sincere thanks.

Incidentally, this might be the appropriate spot for the **6th Annual-Anti-Shrinking-Violets Sermon**, in which, again, we admonish: If you've: *written, done, preserved, recorded, or discovered something; had a personal event like a job obtainment, change, or retirement; received an award or grant; a response to something seen herein; an opinion or question—whatever—let us know*, even if you're uncertain of its IA connection, and so long as it's fit for a family-type publication. If you feel it's pushy to advise the world of your latest work, have a disinterested third party make the submission, or do it anonymously. Don't make it necessary for us to learn of these things from informers. *R.M.V.*

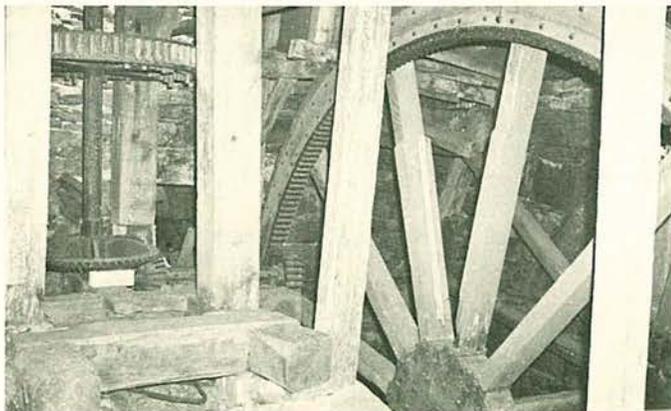
Our apologies to Carter Rila, Gaithersburg, Md., contributor of the account in the last issue of the MCMOC trip to the East Broad Top RR. His name inadvertently was left out of the "Contributor's Box."

CHAPTER ACTIVITIES

Southern New England Chapter Records Gillette's Grist Mill

Gillette's Grist Mill in New Hartford, Conn. was nominated for the Natl. Register by Bruce Clouette [SIA] in 1976. This little-known, badly deteriorated structure contains a unique, high breast wheel and cast-iron power transmission system from the mid-19thC. SNEC, recognizing the site's significance, organized a recording project and camping trip for the weekend of 23-25 Sept. Torrential rains ruined the camping, but much of the mill and its power system was measured and photographed by a group of dedicated water rats/IA enthusiasts. Some are still recovering from immersion foot, pneumonia, and other hazards of our avocation.

The Mill's breast wheel, over 18 ft. in diameter and 7 ft. wide, has a cast-iron, internal segment gear and a cylindrical iron shaft. Although the wooden buckets are gone, every significant detail of the wheel's construction can be determined from surviving elements. The power transmission system also is largely intact and includes the only known section of square cast-iron shafting still in place in an early mill. The SNEC is completing a set of measured drawings for HAER and will return to the site for further recording when the weather improves. *P.M.M.*



Remains of breast wheel and its drive, Gillette's Mill. *Jonathan Woodman photo.*

1977 CONFERENCE. All attendees of the Wilmington Conference were to have received a copy of D. Zembala's monograph on the **Elm St. Bridge**, Woodstock, Vt. with the Sept. SIAN. If anyone was missed we're sorry. Please advise. *Ed.*

STATE OF THE SOUTH SHORE

I was in South Bend [Ind.] recently and considered the possibility of taking the ride on my way home (one seldom flies directly from South Bend to N.Y.), worried that it might stop running soon. Local informants were sanguine about its continuation, pointing out that it was *always* seeking to chuck its passenger operation.

So, I arranged for a connecting flight from O'Hare airport and arrived in time for the 6:10 a.m. departure of train No. 62. It consisted of one car, No. 108, with a modest baggage/parcel compartment, plus two rows of two-abreast seating in both smoking and non-smoking sections. While the car was semi-antique in its exterior appearance, it had been refurbished inside and was far from the state of dilapidation one associates with a dying passenger operation. In fact, the interior of the car was in decent repair, the operation was smooth and quiet—and decently fast, and the entire roadbed was smooth enough to permit not-taking at any time, a condition never true of the IRT/Lexington Ave. line, and rarely true of either the Conrail/New Haven or this damned Smith-Corona typewriter.

I had no official contact with the C,SS&SB RR, but nothing about my trip suggested that the end was near.

Michael Robbins, N.Y.C.

TAYLOR'S MACHINELESS COMPRESSOR, RAGGED CHUTE

One drawback (seldom recognized) of such a system is the fact that oxygen is much more soluble in water than nitrogen. As a result, the compressed air delivered to the working face in the mine is significantly poorer in oxygen than air from a normal mechanical compressor, creating breathing and lighting (if non-electric) problems.

C.V.S. Roosevelt, Washington

I would like to suggest that the article may contain a technical error in stating that "when more air was being produced than used and the pressure rose above 125 p.s.i., the water level was depressed and the excess air blown out."

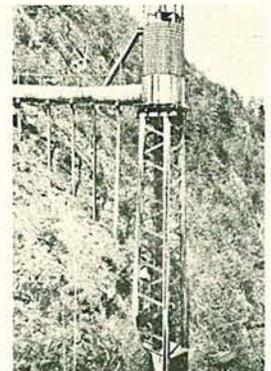
It seems to be physically impossible for the pressure in the system to exceed (62.4 lbs./1 cu. ft.) x (1 sq. ft./144 sq. ins.) x 298 ft. [the tail shaft depth] = 129 p.s.i.; not significantly greater than the 125-p.s.i. working pressure.

What would appear more likely to have caused the blow-off is an increase in the *volume* of the unused air to the point that an open-mouthed blow-off pipe became exposed above the surface of the water, so permitting the air to escape.

Any comment on this would be appreciated; also on the method of estimating what volume of air would be produced.

I'm sorry to say that almost no sign remains of the Coffee Creek hydraulic compressor at Ainsworth, B.C.

David Morley, Fort Steele Historic Park, B.C.



Coffee Creek Taylor compressor. *B.C. Provincial Archives photo.*

EDISON CENTENNIAL COMMISSION

The *N.J. Historical Commn. Newsletter* reminds us that 21 Oct. 1979 will be the 100th anniversary of Edison's invention of the first practical incandescent electric light, demonstrated at Menlo Park, N.J. To mark the occasion and to commemorate Edison's long career as one of history's great inventors, resolutions were introduced into Congress last May to designate 1979 as "The Thomas A. Edison Centennial Year," and to establish a Thomas A. Edison Centennial Commn. The 20-member federal body would be authorized to support publications and other scholarly and educational projects, seminars and such events, exhibitions, preservation of Edison-associated sites and structures, and to issue commemorative objects. Further information: Rep. Edward J. Patten and Senator Harrison A. Williams, Jr., Washington D.C. 20510. Refer to H.J. Res.467 and S.J. Res.54 respectively.

PUBLICATIONS OF INTEREST

Conducted By Robert M. Frame III, Minn. Historical Soc.

- H. Arnold Barton, **Canton at Drottningholm: A Model Manufacturing Community from the Mid-18th Century.** In *Scandinavian Studies*, Winter, pp. 81-98.
- Roselyn Brevetton, **Mining Techniques in the Calif. Goldfields during the 1850s.** In *Pacific Historian*, Fall 1976.
- James E. Brittain [SIA], Ed., **Turning Points in American Electrical History.** Inst. of Electrical & Electronics Engrs. (Avail.: IEEE Service Center, 445 Hoes La., Piscataway, NJ 08854). 466 pp. \$26. Includes 64 papers telling of key developments, usually in the words of the person who made the development.
- James L. Carter, **Au Sable Light [Mich.], Sentinel of the Great Sands.** In *Inland Seas*, Summer, pp. 96-105, 131.
- Patrick C. Dorin, **Everywhere West: The Burlington Route.** Seattle: Superior Publ. Co., 1976. 173 pp. \$15.
- Perry R. Duis, **"Where is Athens Now?" The Fine Arts Building, 1898 to 1918.** In *Chicago History*, Summer, pp. 66-78. Built for the Studebaker Bros. by Solon S. Berman, designer of Pullman's industrial town.
- Walter T. Durham, **The Building Supply Dealer in Tenn.: A History of the Tennessee Building Material Assn.** Nashville: T.B.M.A., 1976. 83 pp. \$7.
- Edward Ehlert, **Highway & Bridge Building in Manitowoc County [Wisc.], 1836 to the Present.** *Occupational Monograph 30, 1976 Series.* 11 pp. \$2. Avail: Manitowoc Co. Hist. Soc. 54220.
- Richard L. Ehrlich, Ed., **Immigrants in Industrial America.** Charlottesville: Univ. of Va. Press, 1976. 296 pp.
- Eugene S. Ferguson [SIA], **The Mind's Eye: Nonverbal Thought in Technology.** In *Science*, 26 August, pp. 827-36. Illus. A perceptive, important essay on the intuitive employment by machinery designers (and by implication, those of most other technological "structures") of graphic mental images, rather than unconscious verbalization as seems commonly to be believed. A concept less obvious than you might suppose.
- Carolyn B. Harrington, **Riverside & Great Northern: The Sandleys & the Power of Steam.** In *Wisc. Trails*, Summer, pp. 36-38. N.K. Sandley runs the 15-in. gauge R&GN + the Sandley Light Ry. Equip. Works, and keeps a 10,000 vol. RR library.
- Obed C. Haycock, **Electric Power Comes to Utah.** In *Utah Historical Quarterly*, Spring, pp. 173-87.
- Charles Howell [SIA], & Allan Keller, **The Mill at Philipsburg Manor Upper Mills & A Brief History of Milling.** Tarrytown, NY: Sleepy Hollow Restorations. 192 pp. illus. \$15. Here, perhaps, is the mill book that is being clamored for. Not, to be sure, a wide, sweeping treatment of all aspects of wind and water mills, but an authoritative, finely illus. work by a real miller, with a forward by eminent mill historian Rex Wailes. (To be reviewed in *IA*).
- J. Kenneth Major [SIA] & Martin Watts, **Victorian & Edwardian Windmills & Watermills from Old Photographs.** London: Batsford. 96 pp., 137 illus. \$7.50. A stunning collection of the routine and the unusual in mills, their workings, and most charming, the millers, all in G.B. (To be reviewed in *IA*).
- Lewis Mandell, **Industrial Location Decisions: Detroit Compared with Atlanta & Chicago.** *Praeger Special Studies Series.* London: Martin Robertson, 1976. 121 pp.
- Dennis M. Zembala [SIA], **Elm Street Bridge.** Avail.: Woodstock Natl. Historic District Commn., Box 265, Woodstock, VT 05091. v + 12 pp. An 1870 bowstring iron truss, one of the few surviving wrought-iron bridges in New England.

INVENTORIES, GUIDES, HANDBOOKS, BIBLIOGRAPHIES

- Gene Bunnell (for the Mass. Dept. of Community Affairs), **Built to Last: A Handbook on Recycling Old Buildings.** Wash.: Preservation Press (740 Jackson Pl. NW 20006). 126 pp. \$7. paper. Adaptive use of some Mass. buildings, incl. Leeds textile mill, Chickering piano factory, A.C. Lawrence tannery, Prince macaroni factory, and Northbridge cotton mill.

Lisa Eizen & Allen Weinberg, **Guide to the Photograph Collection** (of Philadelphia City Archives). City Hall, 1976. 296 pp.

John A. Fleckner & Stanley Mallach (Eds.), **Guide to Historical Resources in Milwaukee Area Archives.** Milwaukee: Milwaukee County Hist. Soc. 112 pp.

Robert F. Looney, **Old Philadelphia in Early Photographs, 1839-1914:** 215 Prints from the Collection of the Free Library of Phila. NY: Dover Publ., 1976. 228 pp.

William A. Myers (Ed.), **Historic Civil Engineering Landmarks of San Francisco & Northern Calif.** ASCE & Pacific Gas & Elec. Co., publr. Covers buildings, water supply, transportation, and electrical power structures. 52 pp. Gratis: ASCE, 345 E. 47th St., NYC 10017.

Thomas Orsagh, et al (Eds.), **The Economic History of the U.S. Prior to 1860: An Annotated Bibliography.** Santa Barbara, CA: Clio Press, 1975. 100 pp. \$9.75. Organizes 799 monographs & articles from an economist's, rather than a historian's, viewpoint. Review: *Business History Review*, Summer.

Ellen Fletcher Rosebrock & Edmund V. Gillon, Jr., **South Street: A Photographic Guide to N.Y.C.'s Historic Seaport.** NY: Dover Publ. 108 pp., 113 illus. \$4. paper. The East River wharves.

Richard H. Steinmetz, Sr. & Robert D. Hoffsommer, **This Was Harrisburgh: A Photographic History.** Harrisburg, PA: Stackpole Books, 1976. 224 pp.

Elisabeth Kendall Thompson, **Recycling Buildings—Renovations, Remodelings, Restorations, & Reuses.** NY: McGraw-Hill. 213 pp. \$19.50. Ordinary buildings as well as the landmarks.

The Next Station Will Be . . . Vol 5: N.Y. Susquehanna & Western and Wilkes-Barre & Eastern: An Album of Photographs of RR Depots in 1910. Railroadians of America, 270 W. Colfax Ave., Roselle Park, NJ 07204. \$4.50 paper. High quality, full-page photos of 42 depots from original negatives + map & profile.

"METRO" Bibliography 1974-75. Vol. 6. UITP, Intl. Union of Public Transport, Ave. de l'Uruguay 19, B-1050 Bruxelles, Belgium. \$60. Data on metropolitan railways, underground tramways, and communications with airports.

Light Rail Transit Bibliography 1975. UITP, as above. \$10.

Unconventional Passenger Transportation Systems Bibliography 1973. UITP, as above. \$38.

SERIALS

Industrial Archaeology—the Journal of the History of Industry & Technology. Publishers: Graphmitre Ltd., 1 West St., Tavistock, Devon. Annual subscr., £ 16. (surface mail). Single issues (quarterly): £ 4.50. After a hiatus of some three years, this journal suddenly has reappeared, in its third incarnation, but this time, oddly, without benefit of an editor of record. The first issue is billed as a double one (Vol. 11 No. 4 & Vol. 12 No. 1, Spring 1977, picking up where we left off in August 1974), but it's no fuller than its predecessors, and the designation presumably is simply to clear the books for a fresh start. Format size is, in fact, back to the original smallish one, and the content, while perfectly adequate (with the exception of a somewhat misplaced account of a small collection of fishing spears from the West of Ireland), probably will not justify the steep price to all. Nor, incidentally, should this be confused with the journal of the Assn. for Industrial Archaeology: *IA. Review*, edited by John Butt.

Western Museum of Mining & Industry Newsletter. Just inaugurated. Informative and interesting; describes current activities at this rapidly growing museum, devoted to the industrial history of the West with emphasis on mining. (An ore mill of the '90s is shortly to be erected, containing a full suit of stamps and other machinery.) Gratis to those interested: WMoM&I, 1025 Northgate Rd., Colorado Springs, CO 80908.

Solar Energy Research & Development Report. Periodically issued by Divn. of Solar Energy, Dept. of Energy, Wash., DC 20545. 21 July 1977 issue contains list of solar publications.

Of Steam & Stone. Weekly newsletter concerned with the Rideau Canal, past, present, & future. Doug Janoff, Ed. From: Rideau Canal Interpretation Section, c/o The Supt., Rideau Canal Office, 12 Maple Ave. North, Smiths Falls, Ontario K7A 1Z5.