

# SOCIETY FOR INDUSTRIAL ARCHEOLOGY

## NEWSLETTER

Volume One Number 4

July 1972

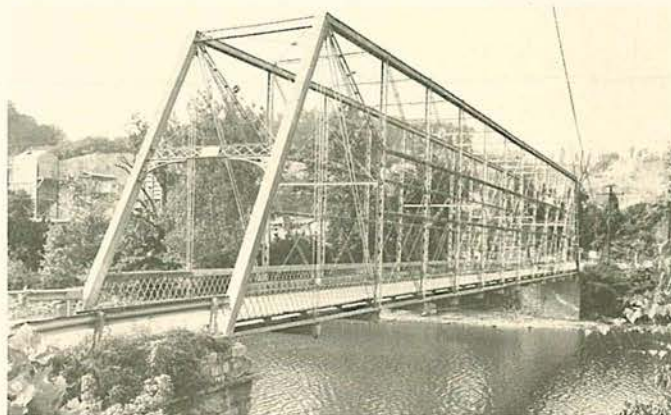
### AGNES RAVAGES & REVEALS

Concern for suffering and loss of property more immediately relevant to basic human needs caused by the June floods resulting from storm Agnes has masked awareness of irreparable damage to our IA. As there has been little publicity given this area, only major losses are known: extensive damage to berm, locks and other C&O Canal structures; destruction of an 1878 209-ft span King iron truss bridge, Occoquan, VA, that was due for preservation.

Agnes' ill winds did, however, blow some good. The B&ORR's historic Old Main Line in the Patapsco Valley from Relay to Daniels, MD—site of the legendary race between the horse and locomotive Tom Thumb—was heavily washed out and may not, rumor says, be restored. But the same waters in 3 locations also neatly scoured away several feet of later ballast and fill, exposing to view about 500 ft of the granite tie-blocks and stringers that carried the strap-iron running rail forming the RR's first 20 miles of track, c1829-31. Because of its inelasticity the granite roadbed was soon replaced by wood ties and buried, the iron rails salvaged. At 2 of the sites 3 of 4 lines of stringers show, evidence of double track.

There has been preliminary recording by Smithsonian and MD Geological Survey, which, with MD Hist Soc and the ASCE

are exploring with the B&O protection and memorialization of what unquestionably are the earliest permanent-way remains of a passenger-carrying RR in the W Hemisphere, if not the World.



LOST: King Iron Bridge Co truss, Occoquan—1878. *William E Barrett*

& FOUND: B&O's Stones at Ilchester, Oella & Holofield, MD. *R Vogel*

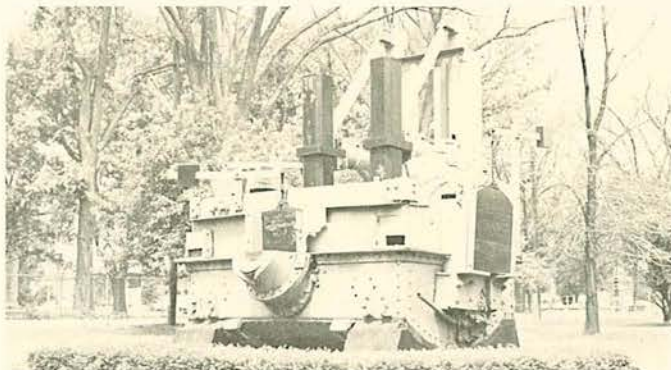


### FIRST METALS HISTORICAL LANDMARK

With the designation on 5 June of its first Metals National Historical Landmark, the American Society for Metals has become the second of the engineering and materials societies to implement a historical landmark program (see ASCE, page 2). The NMHL, the first electric-arc steelmaking furnace in the W Hemisphere, was imported in 1905 from France, where it was developed, by C Herbert Halcomb of the Halcomb Steel Co, Syracuse, NY. The first heat was tapped in 1906, the last in 1929. The furnace's original capacity of 3 tons in 1907 was increased to 4 by raising its roof. The steel was first refined in a conventional open-hearth, then transferred to the electric furnace for final refining and addition of alloying elements, to produce fine tool and stainless steels.

The furnace was nominated for landmark status by the ASM Syracuse Chapter, the plaque presented by ASM Landmarks Committee Chrmn Jack E Chard (SIA) to Walter T Haswell of Colt Industries' Crucible Specialty Metals Divn. It was

donated to the Smithsonian in 1961 but will remain outside the Crucible plant pending completion of the museum's Iron & Steel Hall. Further information: R J Seman, ASM, Metals Park, OH 44073.





## Civil Engineering Historic Landmarks

The American Society of Civil Engineers has, with the establishment in 1964 of its **Comm on the History & Heritage of Amer Civil Engineering**, been the most energetic by far of the engineering societies in recognizing and memorializing the history of its profession. The CHHACE's many activities have served not only to inspire a sense of pride in past accomplishment among the nation's civil engineers, but encouraged the forming of similar committees within other of the engineering societies and materials institutes, notably the ASME's History & Heritage Comm.

Perhaps the most interesting CHHACE undertaking and certainly that of greatest IA pertinence, is the *National Historic Civil Engineering Landmark Program* (unrelated to the Park Svc's Natl Historic Landmarks Prog), in which structures are so designated and marked by an appropriate bronze plaque. Structures are nominated by ASCE Local Sections to the CHHACE, which annually selects several for NHCEL designation. Sections can also designate *Local HCEs* that are considered not nationally significant. Since 1966, 25 NHCEs have been recognized:

**Bollman Iron Truss Bridge**—1869, Savage, MD; **Erie Canal**—1817 (start), Rome, NY; **Middlesex Canal**—1803, Bil-

lerica, MA; **Bidwell Bar Suspension Bridge**—1856, Oroville, CA; **Central Pacific RR**—1863 (start), Sacramento, CA; **Durango-Silverton Branch, Denver & Rio Grande Western RR**—1882, Durango, CO; **Acequias of San Antonio**—1718; **Wheeling (WV) Suspension Bridge**—1849/1856; **Joining of the Rails, Transcontinental RR**—1869, Promontory, UT; **Great Falls (VA) Canal & Locks, Potowmack Canal**—1799; **Ellicott's Stone**—1796, Mobile County, FL; **Charleston-Hamburg (SC) RR**—1833; **Alvord Lake (concrete) Bridge**—1889, San Francisco; **Cornish-Windsor Covered Bridge**—1866, Windsor, VT; **Bridgeport Covered Bridge**—1862, Nevada County, CA; **Ascutney Mill Dam**—1834, Windsor, VT; **Frankford Ave Bridge**—1697, Philadelphia; **Union Canal Tunnel**—1825, Lebanon, PA; **Theodore Roosevelt Dam & Salt River Project**—1911 nr Phoenix, AZ; **Mormon Tabernacle**—1867, Salt Lake City; **Druid Lake Dam**—1864-71, Baltimore; **Old Bethlehem (Moravian) Waterworks**—1761, Bethlehem, PA; **First Owens River-Los Angeles Aqueduct**—1913, Inyo, CA; **Eads Bridge**—1868-74, St Louis; **Miami Conservancy District**—1913-22 nr Dayton, OH. ASCE local Sections would undoubtedly welcome suggestions for LHCEs and NHCEs. For Section addresses and a detailed listing of the 25 NHCEs: Herbert R. Hands, ASCE, 345 E 47th St, NYC 10017.

## THE WORK OF I A

The Historic Amer Engineering Record **West Virginia Survey** was launched in June, this first year to spend the summer recording significant 19thC engineering structures and industries in the Mountain State, preparing measured drawings and photographs, and gathering historical data.

The first structures documented were a B&O RR workshop in Grafton and a freight shed in Wheeling, both of the early 1850s, containing composite wood, wrought-iron and cast-iron roof trusses. Future B&O sites include a stone viaduct and tunnel on the Hempfield RR (part of the B&O system); several early tunnels, and bridge sites associated with Bollman and Fink iron trusses, this work complimenting HAER's 1970 B&O study.



COKING OPERATIONS—(above) Near Pittsburgh, c1870 Smithsonian, B&O Colln; (below) Bretz, W Va, 1972 R M Vogel.



The team has visited Volcano to record early equipment of the West Oil Co, c1895, which still utilizes the original endless-wire pumping system. The gas-engine power plant, 2 typical drilling rigs, and an original plank derrick were measured. The present and previous operators were interviewed and their remarks recorded.

The remainder of the summer will be spent in the Morgantown area, recording a coking operation employing beehive ovens typical of the 1870s (photo below); the Easton Roller Mill—a steam-powered grist mill of 1872—and the Morgantown glass industry. *Emory Kemp*.

At least one firm has started to specialize in the creative adaptive use of industrial buildings. **Carabetta Enterprises, Inc**, constructors, engineers, developers, Meriden, Conn has completed conversion of an 1872 brick factory building there to housing for the elderly, is presently at work on another of 1866 on Silver Pond, and has plans for other projects, all for the same ultimate use. One of the most promising routes for the continued life of obsolescent industrial structures, CEI has shown that given aesthetically suitable locations, specialized housing can be provided in this way for \$9-12 per sq ft, gross, far below equivalent new construction. Information: Karen Anderson, Box 724, 06450. (203) 235-1635.

## THE TECHNIQUES OF I A

The chief impediment in recording structures by measured drawing is the time required for hand measurement. Furthermore, it is usually dangerous to measure in high and hard-to-reach areas, and when elements are inaccessible, they must be either fudged or ignored. The only alternative is photogrammetry, which because of the high cost of the field and plotting equipment and its use, traditionally has been limited to the recording of only the most important and elaborate structures, or where there are serious accessability problems. There have been experiments—mainly European—with various "poor man's" systems, but even these have been out of reach of most recording projects.

In the form of his doctoral thesis (Cornell): *A Photogrammetric System for Recording Historic Bldgs*, LTC Allan C Biggerstaff (SIA), on the staff of the US Military Academy, has developed



a cheap and thoroughly effective system based on a calibrated common press or view camera, and using ordinary sheet film. The resulting photographic and control data is translatable into dimensional and coordinate information and thence to finished elevations and plans by conventional computers using FORTRAN programming. Accuracy to within 1/8" in about 8' at a camera-subject distance of 100' is possible, entirely consistent with the inherent dimensional characteristics of most structures.

The field equipment is all standard; a comparator is required to measure image coordinates the components for which cost c\$60; and hardly any institution today is without some computer time available.

Col Biggerstaff will be pleased to provide further information to those seriously interested in employing this procedure: Dept of ES & GS, USMA, West Point, NY 10996.

## PROJECTS, SITES & STRUCTURES

### Threatened

Preservation not of a structure but of a system is the issue in historic Virginia City, Nev, site of the Comstock Lode. Comstock Historic Restoration Fndn with such allies as the Natl Trust are beseeching Bell of Nevada to leave in place what appears to be the **last magneto (hand crank for operator) telephone system in the entire far flung US Bell network**, rather than replace it with conventional dial instruments. Compatibility is clearly the problem: historical on one side; technological on the other.

What constitutes a Historic Site? **College Park (MD) Airport**, 1909, generally regarded as the first in the US, seat of early military aircraft and airmail activities but now private, is being threatened by general lack of need and by complaints of noise and hazard from local residents. The Natl Aerospace Educational Memorial Center is interested in its use for a museum of early aircraft, but is far short of the funds needed for purchase from its owner. Historically, we might question the significance of a site that functionally is no more than a piece of open ground, whose external environment has been drastically altered by suburbanization, and on which none of the original structures survive (the present hangars are of much later date).

### Potential

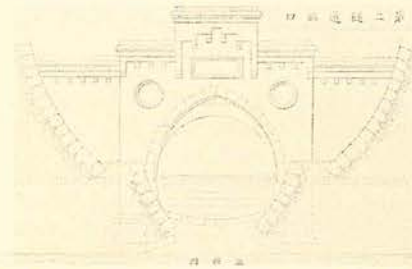
One of the more interesting industrial sites in Canada includes the remains of a once active **cement works near Marlbank, Ont**, about 15 miles NNW of Napanee (at E end of L Ontario), probably the first large scale Portland cement manufactory in Canada. Cement was produced in the area as early as 1867 from a deposit of hydraulic limestone. In 1885 production was greatly increased when absorbed by E W Rathbun's US/Canada RR-mining-lumber-mfg empire. Between then and c1910, Rathbun's and rival and successor firms erected processing works at various sites in the area, all of which were

## The Need for Balance

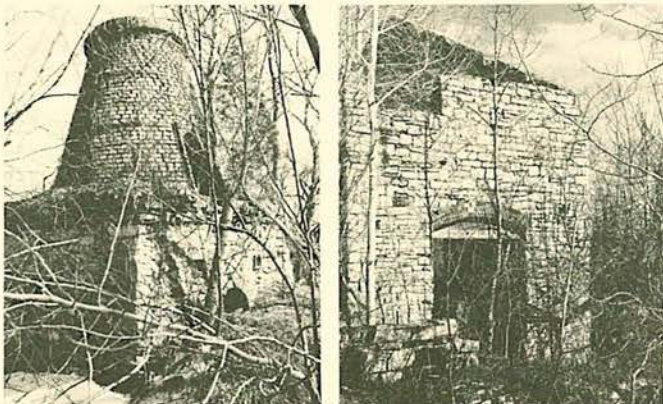
Because of their topographical accessibility, human scale, direct associations with the daily lives of our ancestors, or their manifest romantic appeal, there has been a traditional concentration of attention by historians and IAists on certain industries and structures: grist mills, railroads, steamboats, and more recently, textile mills. Well and good, but let us take care that this not be at the neglect of other industries, which though they may lack some of these qualities, are quite as fundamentally important: lumber, stone and iron come readily to mind. The physical plant left by these is often large, fragmented, and located in remote places. Convenience and quaintness ought not to determine our priorities for work in IA. (See Marlbank, below)

abandoned by 1914. Several rotary kilns were built but the most significant survival is an intact "bottle" kiln, erected probably c1891-98. A type always rare on this continent, several were built near Allentown, PA, 1875, to English designs, as was Marlbank's, which may be the sole survivor. Preservation is being attempted, and a great deal more research and field work is badly needed in the entire area of cement production. The recent inception of the Amer Concrete Inst's history committee may furnish the very inspiration. *R J Corby.*

**Visitors to Kyoto should not miss the Biwako Canal**, an 1890 Japanese version of NJ's Morris Canal, complete with a nearly operable inclined plane with rails and boat carriages. Designed by Sakuro Tanabe as a PhD thesis (see Nov 1896 *Scientific Amer*), the canal incorporated the latest electrical and hydroelectric technology, derived from a two-month US visit that included the Morris and C&O Canals; a hydroelectric plant in Aspen, CO; and an electric ry in Lynn, Mass. The 13-mile canal has 9 locks and 3 tunnels, one over 1 1/2 miles long, each portal carrying a Chinese, Japanese or Engl inscription. The



canal still is being used for water supply and power, but is no longer navigated. In the early 20thC it was a major tourist attraction. The Biwako Canal, remarkable in many ways, as a showcase of Amer technology deserves serious study by the Western World. *William E Trout III* (who would like to hear from anyone interested in the canal, especially who knows Japanese. City of Hope Medical Center, Duarte, Calif 91010).



Cement bottle-kiln and rotary-kiln building remains, Marlbank, Ont.

### Nascent Preservation Projects

The Jericho (VT) Historical Soc (05465) has launched **The Old Red Mill project**, to purchase and rehabilitate an 1854 grist mill. An attractive masonry and frame structure, plans call for its use as a recreation and arts & crafts center, the pond—if the dam can be rebuilt—to be used for swimming and skating.

**Canastota (NY) Canal Town Corp** has been organized to promote restoration of the part of the town as a "canal town." Canastota is at the center of the 40-mile Erie Canal State Park and to be its HQ. Eleven surviving original canal-related structures are to be restored: warehouses, taverns, bakery, canal

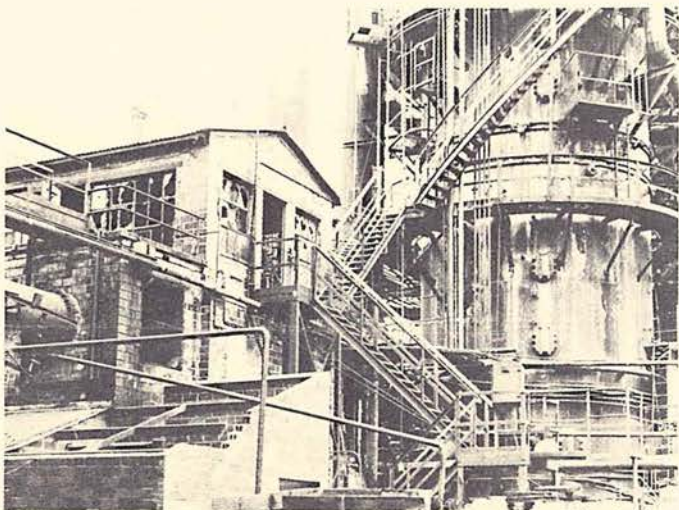


grocery, blacksmith shop, glass factory, carriage factory and boat works. The former turning basin is to be re-excavated and a mule-drawn packet boat ride to be instituted. Canal St, 13032.

How did we preserve our historic industrial structures before restaurants & boutiques? Historic Denver, Inc has recently obtained an option to purchase the **Tramway Cable Building**, built 1889 at the height of Amer cable-car fever as a combined power house-car barn-office. Recently, to avert demolition, the building was purchased by the private **Tramway Cable Building Venture**, which will rehabilitate it, using the 1st floor for small shops and a restaurant to be operated by the Spaghetti Factory, a West Coast chain; the 2nd for architectural and other offices; and the basement for parking. HDI may purchase the building from TCBV within 3-5 years.

### The Future of Lowell

**Better-late-than-never.** Although the best of the 1822-30 cotton mills and corporation housing has been mindlessly bulldozed in the name of urban renewal over the past six years, the **City of Lowell (MA) Historic Sites Study Committee** (89 Appleton St) happily has set itself the task of preserving what remains of the works forming the basis of America's first successful planned industrial city. The most vital element of the Lowell complex, and which fortunately survives almost intact, was the famed system of hydraulic canals, dams, gates and locks that furnished the bulk of the mills' power (and does still to a limited extent, hydroelectrically). Despite the vast literature on Lowell's social, industrial, planning, technological and economic significance, until now far too little attention has been devoted to its IA. The CLHSSC's efforts have begun to show results in the form of a pending bill (HR 14629) introduced by former Rep Bradford Morse to establish under Natl Park Svc a **Lowell Historic Canal District National Cultural Park**, for "...preserving and interpreting for the educational and inspirational benefit of present and future generations the unique and significant contribution to our national heritage of certain historic and cultural lands, waterways, and edifices in the City of Lowell, the cradle of the industrial revolution in America..." Planning, restoration and administration of the cultural park—a new concept in NPS holdings—would be under a Lowell Historic Canal District Commission. Although NPS has given some thought to establishing a cultural park based on the development of the textile industry in a different city, which has had less of its IA decimated, because of the driving force from within and its historical pre-eminence, Lowell will probably be it.



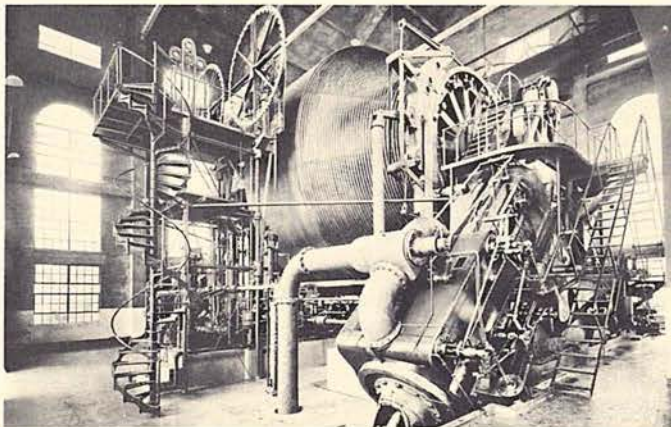
Seattle Gasworks Towers—1906

Richard Adatta

**A Gasworks Park.** And yet another, perhaps more surprising, scheme for a park based on an industrial remain: the *Seattle (Wash) Flag* reports the likelihood, despite some popular resistance, that a new park designed by acht Richard Haag, to be built on the site of an abandoned gasworks, will incorporate 6 great gas refining towers of 1906. What controversy there was revolved wholly about aesthetics, not historical significance, some believing the steel towers to be visually "life enhancing" (right on) and others not. The *Flag's* DJ Chasan speculates that we're in the first stages of a post-industrial age, and that those favoring such preservation are thoroughly post-industrial people who can divorce structures of the industrial age from their intended functions, appreciating them purely as objects: "found sculpture," or simply are latter-day Romantics, exhibiting a traditional fondness for ruins. Whatever the motive—conscious or subconscious—there is good reason to see the Lowell and Seattle cases as portents.

### Stable & Accessible, But Obscure

*In addition to reporting sites & structures in work, in danger, or which otherwise are immediately newsworthy, we shall henceforth note a selection of those that are more or less established, stable and publicly accessible, but that are apt not to be widely known because of their remoteness or for other reasons. Information on others is, of course, sought.*



**QUINCY HOIST.** Any number of transportation "machines" and countless small machines in museum environments have been preserved on the basis of their historical worth, but extremely few *stationary* machines *in situ*. The problem invariably is one of land values and other practical considerations. Surely the largest and one of the most interesting of this elite group is the great Nordberg (Milwaukee) hoisting engine built in 1920 for the Quincy copper mine, Hancock, (Upper) Mich. The largest steam hoist ever built, it was powered by 4 compounded Corliss cylinders in inverted V arrangement, 2 acting directly on each end of the drum shaft, developing c2500 HP. The drum, 30-ft diam at center, carried 13,000 ft of 1½-in cable, hoisting from a depth of 9260 ft on an incline, raising 10 tons of ore at 36 mph. The hoist was derelict from 1931 until 1966 when it was leased for preservation and exhibition to the nonprofit Quincy Mine Hoist Assn, composed of interested firms, individuals and institutions. It is on the Natl Register.

**THE SPEEDWELL VILLAGE.** During the first three quarters of the 19thC, the Vail family operated the prosperous Speedwell Iron Works on the Whippany River near Morristown, NJ, routinely producing saw, coffee and sugar mills, steam engines, and locomotive parts. In 1819 they built the machinery for the *S. S. Savannah*, the first steam ship to cross the Atlantic, and here in 1838 in an empty factory building young Alfred Vail worked with his friend Samuel F B Morse to perfect the electromagnetic telegraph. The 7½-acre site, including the Vail Homestead and Factory Building, on the Natl Register, has



been owned since 1967 by TSV, a non-profit historical foundation. TSV has landscaped the grounds, reclaimed the old ice pond—to be used later to power a water wheel, set up an exhibit of wooden patterns from the iron works, and repaired the Homestead and Factory that was Morse's and Vail's laboratory. Further restoration is in progress, to include a recreation of the laboratory to its appearance in 1838, and repair and reactivation of the iron water wheel, a grist mill and other machinery. TSV, 333 Speedwell Ave, Morristown, NJ 07960. *Isabel A Bartenstein.*

### OFFICIALS BOOST RESTORATION OF OLD MIDDLESEX CANAL

Restoration of the Middlesex Canal, which linked Lowell and Boston, Mass from 1803 to 1853, was discussed at an open meeting of the Middlesex Canal Assn (see Notes), April 8, at the Lowell Technological Inst, where the canal archives are housed.

Rep Morse announced that the Cultural Park of his legislation (above) would be centered in Lowell and "include a 30-mile recreational corridor along the route of the canal to Boston" . . . Dr Richard W Hale, Jr, acting chrmn, Mass Hist Commn, said the state has submitted for entry on the Natl Register "all remaining open stretches of the canal" . . . Robert Gagnon, environmental engr, Mass Dept of Public Wks, described a 1300-ft portion of the canal in Wilmington which DPW will restore during relocation of Rt 129 this year at a cost of \$100,000 . . . Robert Joseph, planner, Metro Area Planning Commn, urged use of the canal bed as a conduit for diverting water from the Merrimack to the Ipswich River between Billerica and Burlington . . . John Richardson, planner, Dept of Natural Resources, spoke of DNR's recent study regarding acquisition of land along the canal for conservation and recreation. Other agencies represented included the Metro Dist Commn, Northern Middlesex Area Commn, Lowell Model Cities Education Component, Natl Park Svc, and Woburn Hist Commn.

In 1967 the canal was designated a Natl Historic Civil Engineering Landmark by the ASCE. It follows a 27-mile route from Charlestown to Middlesex Village in Lowell. Open stretches remain in Woburn, Wilmington, Billerica, Chelmsford and Lowell. September 10 has been proclaimed Middlesex Canal Day by the Middlesex Co Commrs. On that date, with appropriate ceremonies, the commrs will present to the Middlesex Canal Assn records of the canal that have been in their custody for over 100 years. *Mary Stetson Clarke*

### SIA AFFAIRS

#### APPOINTMENT OF STANDING COMMITTEES

At its May meeting, the Board established several standing committees. They are, with their chairmen: Membership, Paul E Rivard; Field Trips & Conferences, Richard M Candee; Preservation, Chester H Liebs; Fund Raising, Edward S Rutsch; and Nominations, Richard L Deily. All have begun work. The *Newsletter* will keep you informed of their activities. We encourage those interested in serving on one of these committees to contact the chairman directly (see membership list). SIA depends upon the voluntary support of its members for carrying out its aims. Committee service is one of the most productive ways in which you can demonstrate your concern for the Society and Industrial Archeology generally.

And here we made you an offer that you couldn't refuse. Response to the **Special Offer for reruns of the First Annual Conference Poster** has been absolutely underwhelming. If more orders are not in hand by mid-Aug, the offer will have to be voided, and checks returned. Order: Edw S Rutsch, Fairleigh Dickinson Univ, Madison, NJ 07940. \$3.50 members; \$4.00 non.

### NEW ENGLAND I A TOUR

The joint SIA-Soc of Arch Historians Boston Chap tour: **The IA of the Quinebaug & Blackstone Valleys of Mass, Conn & RI**, will be run on Sat 21 Oct. Those wanting to join what will be an exceptionally interesting trip, should save that date. Full schedule, price & other information: next Newsletter.

### MISC NOTES

The 2nd biennial conference: **Civil Engineering: History, Heritage & the Humanities**, will be held at Princeton U 4-6 Oct, commemorating the 100th birthday of Robert Maillart, Swiss engr who revolutionized the use of concrete in bridge and building construction. A brilliant program is projected. Details: Prof David P Billington, Princeton U, Princeton, NJ 08540.

**Steam Up!** Steam (and gasoline and hot-air) Meet: 19 Aug. **New Engl Wireless & Steam Museum**, Frenchtown & Tillinghast Rds, E Greenwich, RI. (401)884-1710. Live steam, a launch, engines of all types, and (even) a hot-air balloon. Small engines etc. welcome. Coal, wood, steam & hilarity-furnished. Rain date: 20th.

**GREAT STEAM EXCURSIONS.** Cincinnati to Williamstown, WV- 19 Aug & W'town to Roanoke, VA- 20 Aug; and Roanoke to Glade Spring, VA & return- 26 Aug & Roanoke to Winston-Salem, NC & return- 27 Aug. All behind ex-Southern Ry Mikado (2-8-2) *No 4501*. Details: Roanoke Chap, Natl Ry Hist Soc, Box 681, Roanoke, VA 24004. Phones: (703) 366-5211 or 774-6438.

**SIA Pres Ted Sande** has accepted a Lectureship in Art (in charge of the advanced design studio in architecture and teaching history of architecture) at Williams College, starting Sept. He is now completing his dissertation at U PA on the architecture of the Rhode Island textile mill from 1790 to 1860. **James C Massey**, who as Chief of the Historic Amer Buildings Survey, NPS was influential in introducing pure IA recording to that venerable body and almost alone caused the Historic Amer Engineering Record to be formed from one of its ribs, has resigned to become Director of Properties for the Natl Trust. In his new post—if the past is any indication—we anticipate his encouraging the selection of worthwhile industrial properties for addition to the Trust's (now exclusively residential) stable. (Much of the wealth that built the Mansions came, recall, from the Mills and Factories. *Why are we doing our preservation all backward?*)

**Paul J F Schumacher**, Chief of Archeological Investigations, Western Region, Natl Pk Svc, San Francisco, has retired to enter consulting historical archeology: 200 Pinehill Rd, Hillsborough, Cal 94010.

One of the most important collections of RR history documents: 10,000 glass negatives of locomotives built c1880-1929 by **Schenectady (NY) Locomotive Co** and its successors, has been indefinitely loaned to Union College by the City of Schenectady. Contact: Prof Edwin K Tolan.

New address for the **RR Station Hist Soc** (SIAN No 1): Janet L C Rapp, Business Mgr, 430 Ivy Ave, Crete, Neb 68333.

**The Middlesex Canal Assn**, Box 333, Billerica, MA 01821 was organized in 1962 to publicize the canal's history, promote preservation and restoration of its remains, and preserve its documentation. Memberships welcome. A handsome 20 pp detailed *Guide* to the canal is published.



The Smithsonian and the Natl Trust are compiling a list of **Anachronistic Industries** in the US & Canada. Readers knowing of firms using **19thC machinery and/or methods** are asked to notify Danny A Morris, c/o the Editor.

Continuing information on what might be one of the most promising modes of urban rapid transit, despite the present decline in its use, may be obtained by joining the **North Amer Trackless Trolley Assn**, PO Box 565, Oshawa, Ontario, Canada.

**Impact of Technology on the Environment Dept.** *Newsweek* recently reported that in NYC, at the turn of the century, there were deposited on the streets by its equine prime-movers 2½ million lbs of manure and 60,000 gals of urine, daily. At least the pollutants were visible and avoidable then (and partially recyclable).

### PUBLICATIONS OF INTEREST

Harry P. Albrecht (ed & publ), *Broad St Station 1881-1952*. 1972. Avail: E T Mitchell, 107 W Circular Ave, Paoli, PA 19301. 52 pp. \$3.50 pp. paper. A photographic history of the PRR's famed Phila depot, with introduction and minimal captions, emphasizing the great 306-ft-span train shed (1893-1923) and train operations. Fan literature, not architectural history, but the train shed construction photos alone are worth the price.

John Betjeman, *London's Historic Railway Stations*. John Murray, London, 1972. \$9.25.

Alan A Jackson, *London's Termini*. David & Charles, Newton Abbot, Engl, 1969. \$10.50. A combination architectural and RR history of London's numerous terminal stations, from London Bridge, 1836, to Marylebone, 1899.

Kent Druyvesteyn, "With Great Vision—the James River & Kanawha Canal," in *Virginia Cavalcade*, Winter 1972, pp 22-47. Excellent, thorough, well illus art on the Canal's history & prospects (see Mar SIAN- p 3).

Henry J Kauffman, *American Axes—a Survey of their Development and their Makers*. Stephen Greene Press, Brattleboro, VT 05301, 1972. 150 pp. \$12.50. Heavily illus treatment of "the first wood-working tool," historically and typologically, with good discussion of manufacturing methods. Extensive list of Amer makers; glossary of terms; index.

Edward J Lenik, *Booth Brothers Knife Factory*. North Jersey Highlands Hist Society, 1969. \$2. Based on archeological study of a small knife factory site that was to be obliterated by a highway. Remains of the works and artifacts are described and illus. Avail: Author, 100 Deerfield Rd, Wayne, NJ 07470.

Bryant F Tolles, Jr. "Textile Mill Architecture in East Central New England: An Analysis of Pre-Civil War Design," in *Essex Institute Historical Collections*, July 1971, pp 221-53.

*A Guide to State Programs*, Natl Trust for Hist Preservation (bookstore) 740 Jackson Pl, NW, Wash DC, 20006. 200 pp. \$5. The first of its kind, describes and lists historic preservation legislations, agencies and programs in all US states and territories. To be updated biennially.

Stanley D Chapman (Ed) *The History of Working Class Housing. A Symposium*. Totowa, NJ: Rowman & Littlefield (81 Adams Drive 07512), 1971. \$16.50. And —

J N Tarn, *Working Class Housing in 19th Century Great Britain*. Lond: Lund Humphries, 1971. \$9.50.

Harold K Skramstad, "The Engineer as Architect in Washington: the Contribution of Montgomery Meigs," *Records of the Columbia Historical Society*, 1969-70. Wash: 1971, pp 266-84.

Heather S Hatch, "RR Stations & Roundhouses," *The Journal of Arizona History*, Vol 12 No 2, Summer 1971, pp 102-11. David J. Jeremy (comp) *A Check List of Artifacts (Implements, Machines & Related Objects)*. 19 pp (from the collections of the) Merrimack Valley Textile Museum, N Andover, MA 01845. Mar 1972 50¢.

James C Massey, *How to Organize an Architectural Survey*. Wash: Natl Trust for Historic Preservation (748 Jackson Pl NW, 20006). Free. Much here is translatable to IA monument surveys.

### REVIEWS

W H Bunting, *Portrait of a Port: Boston, 1852-1914*. Cambridge: Bel Knap Press of Harvard Univ Press, 1971. 519 pp. \$20.00.

A comprehensive overview of all Port of Boston activities including a short history of the Port, shipbuilding, fishing, coastal and deep water sail and steam, and Naval activity. The book could stand on its own on the basis of its illustrations. Mr. Bunting's special skill is weaving a highly readable and relaxed text with hundreds of excellent photographs (most work-a-day) introducing the men and women of the time in a manner not found in most marine-related books. With the usual ship portraits are many unusual and highly interesting views. A somewhat haunting volume on a port that, to a great extent, has disappeared. Mr Bunting, a 1969 graduate of Harvard, has produced what would be for most, a lifetime work. This is a must for those who love the sea and ships, and the people who sailed and steamed. *Edward D. Galvin, Maine Dept of Econ Development*

Roger L Grindle, *Quarry and Kiln, The Story of Maine's Lime Industry*. Rockland, ME: The Currier-Gazette, Inc, 1971. 331 pp. \$12.50.

Maine's Lime Industry is centered around Rockland and Thomaston. Prof Grindle has assembled a readable and complete study, describing not only the technology of lime manufacturing but also the economics, methods of transport (including schooner and rail), and the related social history. Little is left to the imagination by 64 pages of photographs, many unique, of an exciting period of coastal Maine's often overlooked past. *EDG*

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William Duck, The Cupola, Belmont Road, Hastings, Sussex.

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Charles B Wood, III, Inc, Antiquarian Booksellers, The Green, S Woodstock, CT 06267 deals principally in architectural works, but frequently as well in history of technology, engineering and allied subjects of IA interest. Catalogs.

Good listings of old maps of all types, at excellent prices, are available from L S Straight, PO Box 106, NYC 10016.

**STOP PRESS.** The superb Victorian Gothic **Starrucca House**, the Erie's ex-station/hotel at Susquehanna, PA, last of the type extant, through the efforts of publ'r Wm S Young, (SIA) (*Railroading*- see SIAN No 1) has just been placed on the Natl Register of Historic Places, making it eligible for various preservation funds, immeasurably increasing its lease on life.