

# SOCIETY FOR INDUSTRIAL ARCHEOLOGY

## NEWSLETTER

Volume Two Number 6

November 1973

### STEAM FOR VERMONT

The state of Vermont, long considered a fount of imaginative planning in the realm of historic preservation, has bolstered that reputation by approving a proposal to restore a statewide system of steam passenger trains. In June the VT Bicentennial Commn approved a basic plan submitted by Waitsfield architect Robert Burley, and hired his firm to investigate means of raising the \$8 million needed to finance it. Burley envisions the project not only as a reminder of Vermont life in the age of steam, but also as a way of inducing the citizenry to reconsider its everyday travel options.

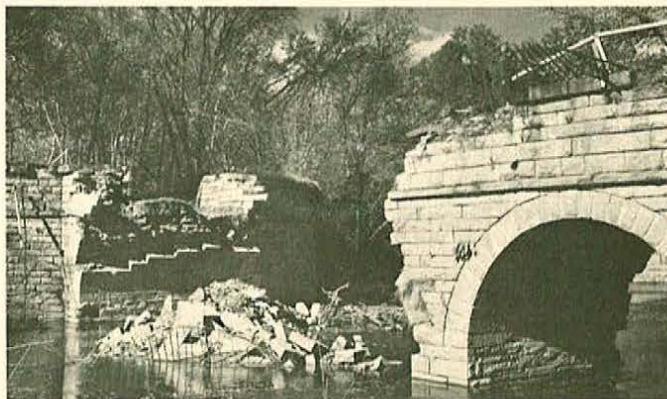
The system would comprise a loop connecting Windsor, Bellows Falls, Chester, Rutland, Burlington, Montpelier, Randolph, and White River Jct, with service also available north to St Johnsbury and St Albans and south to Manchester and Bennington. With no nighttime operation, passengers would have an opportunity to stay at old hotels and inns along the way.

Burley reports that all 6 RRs operating in VT are sold on the idea, as is Amtrack and Steamtown—the rail museum nr Bellows Falls that would furnish much of the necessary rolling stock. He has yet, however, to enlist the cooperation of the Lake Champlain Transp Co, which he hopes would provide service along the western—water—leg of the loop. In any event, there will be some form of boat transp (also steam, it is hoped) along the lake. In all, the system would constitute the most extensive operating museum in the country, and we hope the organizational and fund raising capabilities of its proponents match their ambitions. *Fuller acct: Preservation News, Sept.*

### RENAISSANCE OF THE OPEN HEARTH?

We reported in SIAN 2:3 the gradual demise of the open hearth furnace as the fundamental steel-producing unit. Maryland has rejected a Bethlehem Steel Corp application to re-open 4 idle 300-ton OHs (only 3 to run at a time) at its Sparrows Point, Baltimore, plant, contending that their smokiness would violate both visible-emission and particulate-matter regulations. Affected, though, are such other issues as jobs, steel imports, and balance of payments. The capacity of the units simply is lost at a time when steel is in great shortage. BSC was given permission to operate the OHs until July 1973; later only if proper gas cleaning equipment were installed. (about an 18-month process). Steel making—the heaviest of industries—is constantly subject to clean-air regs.

Bethlehem shut down the OH operation in the summer of 1971, discouraged by low demand for U S steel and in view of the great time and cost to install antipollution devices. But in the last 6 months the demand for U S steel has risen drastically and there is now a shortage, making reuse of the OHs a possibility since conversion to the Basic Oxygen Process is costly and would take years. BSC plans another appeal, to reinstate the OHs to meet immediate demands. *Dianne Newell Macdougall.*



*Dept of Interior photo*

### CATOCTIN CREEK AQUEDUCT COLLAPSES

The 134-ft, 3-arch span near Brunswick, MD, one of the C&O canal's 11 stone aqueducts built in the 1830s, and the second in a year to suffer partial collapse from flooding (SIAN 1:3 & 2:1), might cost \$½ million to restore. The 185-mi canal was to undergo restoration by the Park Service for the Bicentennial year, but extensive damage by Agnes, plus this setback, will extend both the time and cost.

### FOREIGN NOTES

**IA in Ireland.** The Irish Society for IA has outlined a 3-step program: an inventory of all sites of interest; graphically recording and possibly excavating the more important ones; preservation of significant railway stations, warehouses, viaducts, and mills. Irish IA has made its most noteworthy headway in the north where all 6 counties have been surveyed, a beetling mill preserved at Wellbrook, and a spade mill and scutch mill reconstructed at the Ulster Folk Museum, Cultra. In the Republic, 4 counties have been surveyed, a 4-sailed windmill at North Leverton preserved, a corn (flour) mill in Tuam restored; and in a joint town-county project at Robertstown, Co Kildare, the original character of this 18thC canal town is to be preserved. *Irish Times, 24 Oct.* Information: Kevin Mawhinney, Secy, Irish Soc for IA, An Fores Forbatha, Waterloo House, Waterloo Rd, Dublin 4.

**UK Preservation Fund.** A Fund for the Preservation of Technological and Scientific Material was established early this year by the British govt, aimed at assisting local museums in England and Wales in the purchase of "any kind of movable scientific, technological or natural history object, or group of closely related objects." The total available during the first year is \$400,000; individual grants may range from \$260 to 26,000. The fund is administered by the Science Museum, S Kensington, under Asst Keeper J C Robinson (SIA). A smaller sum for the same purpose is being administered by the Royal Scottish Museum, Edinburgh.

## EDUCATION

**TROY, MODEL OF THE 19th CENTURY INDUSTRIAL CITY**, is being offered by Thomas Phelan (SIA), Dean, Rensselaer Polytechnic Inst School of Humanities, dealing with the city that during the mid-19thC was one of the most important industrial cities in the US, by reason of its water power and its location for water transportation. Basic iron, textile and related industries grew and flourished. Phelan considers Troy not only as an innovative, creative center for industrial life, but also as a city plagued by social, political, economic, and ecological decay (which still affects and infects the life of the city). In his view, a large chunk of American cultural history developed in Troy, and today, when the process of industrial development has passed Troy by, the city and area remain a magnificent treasure trove for the historian interested in the making of a culture.

The course studies Troy firsthand, the city and area taken as a cultural, social, political, and intellectual laboratory for research. Each student is doing a specific research project, reporting his/her findings to the class. These, and Phelan's own research will be brought together in a comprehensive term paper.

**HISTORY OF STRUCTURE & CONSTRUCTION** will be offered in the Spring Term by Prof P McCleary (SIA), Dept of Architecture, Univ of PA. From the general theory of structural design of J Clerk Maxwell (1869), A G M Mitchell (1904), & H L Cox (1958), a number of optimal structural configurations will be proposed, and those limiting factors that led to the choice of a particular solution in the history of buildings and bridges identified. Among the limiting factors: building materials technology; construction practice (mfg, fabrication, assembly, and manual vs machine labor); concurrent concepts of force & energy, in general, and theories of structural analysis, design & strength of materials, in particular; &c.

While projects may vary in content (eg, the influence of either iron & steel technology or the science of mechanics on the development of structures), the emphasis is on the identification of those limiting factors that differentiate the *built* structure from the *theoretical optimum* structure.

### Not Dead—Only Sleeping

Toronto is rehabilitating about 150 street cars and expects to buy 200 *new ones* of improved design, and has re-built 150 of its trolley buses. Boston and San Francisco also are buying new cars. Urban rail transit, which declined during the post-war automobile boom, is enjoying a resurgence in NA as part of a growing concern over deteriorating environment, particularly in large cities. At the annual conference of the Canadian Road & Transp Assn, held in Halifax this fall, James H Kearns, Toronto Transit Commn operations mgr, predicted that streetcars will become more popular (are we surprised?). He said, "In general, passengers much prefer the riding stability of a rail vehicle as compared with a bus, and in Toronto public pressure influenced us in reversing our decision to phase out our streetcars."

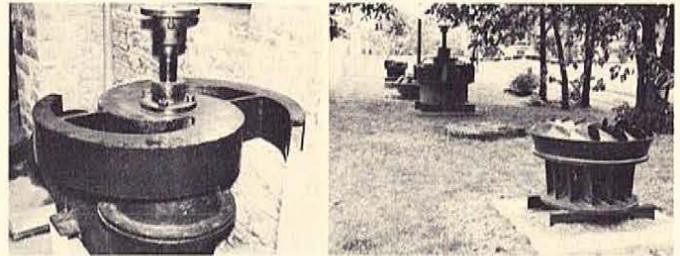
While just down the lake a group of Detroit buffs have obtained, are restoring, and proposing by June to operate for revenue on ½ mile of downtown river-front track a 1901 ex-Brooklyn car, as the van of a MI transit museum. This probably will be the first such operation actually in a city. Ultimately, serious service, beyond mere outings, is planned.

### History of Structural Engineering

A special study group by that name has been established by the Instn of Structural Engrs (London) with the goal of "promoting the study of the development of structural theory, materials and construction, as part of engineering education, and as an aid to practicing engineers in comprehending present techniques and future needs." Furthering these aims will be meetings, papers and publications, the

recording of structures an occasional but significant adjunct. Four coordinators have been appointed for timber, masonry, concrete and ferrous structures. General convener is R J M Sutherland, Harris & Sutherland, 34-42 Whitfield St, London W1P 5RF. Detailed acct: *The Structural Engr*, Mar 1973 p110.

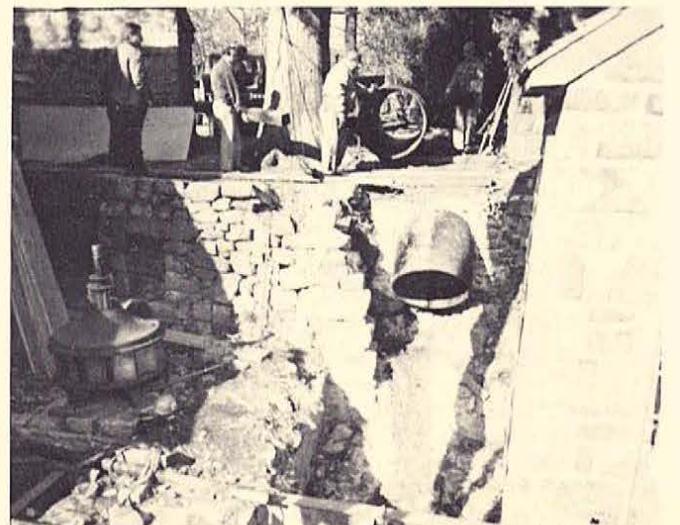
## THE MUSEUMS



The Kinne Collection. Scotch-type reaction turbine, 1844 (L) and a variety of runners and housings on the lawn.

**Lesser Known Collections.** The Jefferson County Historical Society, 228 Washington St, Watertown, NY, possesses a collection of water turbines that must be unique. Turbines are largely unloved and uncollected, being for the most part unsightly, under water or mud, and lacking the visibility and appeal of steam engines and other prime movers, despite their great importance and very real interest once understood. The JCHS collection, amassed by Clarence E Kinne c1920-40, contains 36 specimens representing all major types. Rarest is a Scotch reaction turbine of 1844 (see SIAN 2:1:2). Most of the collection is displayed in the Society's fine Centennial-period mansion; the larger pieces on the lawn. Joining the wheels are an early metal planer, box-bed steam engine and early cylinder printing press. Margaret W M Shaeffer, Dir, anxious to more appropriately exhibit and interpret the Kinne Colln, intends to apply to the NEH for funding.

**Hagley Museum** nr Wilmington, DE, is expanding its exhibits of prime movers and related machinery. Most spectacular of the exhibits will, when complete in early 1974, be the operating rolling mill used until 1921 for incorporating the ingredients in manufacturing du Pont black powder. The original stone building, cast-iron edge-runner rollers, and some of the power transmission were intact; completing the restoration are a Fitz 30" water turbine (c30 years old, unused, unsold), a new wooden staved tub to house it, and a new 36" cast-iron penstock. Additionally, a steam plant of the 1880s upstream from the museum site is being renovated for display of industrial power machinery of the Brandywine Region, 1800-1900. (Hagley: SIAN 2:2:2).



Hagley Museum photo

**The Museum of Man & Industry** was opened at Creusot (Saône et Loire) last Feb. In a heavily industrialized region of France, the museum includes such elements as a mine shaft and machine shops, and attempts to trace man's relationship to his natural environment, art, and industry.

**Slater Mill (SIA)** has received a \$9000 grant from the RI Comm for the Humanities to prepare and circulate, and evaluate the effectiveness of, a traveling exhibit on the human side of the textile industry, essentially for exhibit in factories. It will be the first extension of the museum's activities beyond its own walls.

### THE WORK OF IA

The site of the former **Glendon (PA) Iron Works** (1843-c1893) on the Lehigh River nr Easton was excavated last summer by archeologist J C Fisher Motz of Havre de Grace, MD, under sponsorship of the Hugh Moore Pkwy Commn, using a team of paid and volunteer students and Youth Corps youths. Although there were in its brief history 5 separate charcoal and, later, anthracite, furnace stacks on the site, little remained above ground. The project was important less for furnishing new information on iron industry technology than for providing archeological experience and inspiration to the team members, and adding some additional elements to the area's rich IA. A number of the furnace and adjunct foundations were exposed and stabilized in the course of the work.

The Commn has also extensive plans to restore and exploit the Lehigh Canal, beyond the present Canal Museum in Easton, including restoration of 2½ miles of its course and 3 locks, and replication of a packet boat, plans for which are being prepared by Motz. The master plan is described in *Hugh Moore Parkway*, by Wallace, McHarg, Roberts & Todd, Phila. HMPC, Canal Museum, Box 877, Easton, PA 18042.

### MISC SITES & STRUCTURES

**A 17thC kiln** that produced glazed earthenware has been excavated in VA by archeologists of the VA Landmarks Commn. The Colonial kiln's remains, found along the shore of Lower Machodoc Creek in Westmoreland Co, are the first discovered from the period.

**CT covered bridge** fitted with new, specially designed steel deck. The 1841, 172-ft bridge spanning the Housatonic nr Cornwall, showing such signs of deterioration that it became almost useless, was not replaced, but restored. An "orthotropic" steel deck, the top plate of which acts as both floor and top flange of the ribbed stiffening system, was installed, increasing the bridge's carrying capacity, yet respecting its original appearance. *Civil Engineering*, July.

**Restored Iron Furnace** nr Elizabethtown, IL. The "Illinois" furnace, 1840-80, has been restored by the US Dept of Agriculture and may be visited.

**Chessman Dam**, SE of Denver, CO, when completed in 1905 the world's highest gravity-arch stone-masonry dam, has been named a Natl Hist Civil Eng Landmark by the ASCE.

**NY's Cooper Union**, whose Great Hall was the location of the SIA's First Annual Conference, is presently the scene of extensive renovation. Only the famed round elevator shaft and the Great Hall itself remain in the gutted interior. *Soc. of Arch Historians Newsletter*, Oct.

In early 1971 the Michigan State Univ RR Club began restoring **ex-Pere Marquette 2-8-4 locomotive No 1225**, built by Lima in 1941, financing the work through membership fees and contributions totaling \$7,500 to date. Now, it appears that much refluening will be necessary, and the club is seeking to make the Berkshire-type eligible for a matching grant-in-aid by having it placed on the Natl Register. There are various water-borne vehicles and a cable-car system on the Register, and the 1225 would be the 3rd locomotive.

**The Warren (ME) Barrel Co** is still turning out more than 20,000 barrels annually. While not the only surviving wooden barrel mfr. (See Oxner, SIAN 1:6) WBC's owner, Josef Vinal, does claim to be "the only *lobster* barrel-maker in the world." The barrels, which embody a special ice-packing compartment, are sold mainly to Boston seafood merchants. In the mid-1950s, Vinal expected soon to go out of business, but hung on and now reports that his company is flourishing. He figures that most other mfrs did give up, while, as it turned out, even the advent of fibre barrels could not completely discourage the demand for traditional cooperage. *Boston Globe*.

**Whitewater Canal**, Metamora, IN. Years ago the state revived a 15-mi stretch of the canal (1836-47) and now pioneer aspects of the town have been recreated: canal boat, gristmill, craft shops, and a spectacular covered wood-truss aqueduct, 1843 (restored).

**Joseph Knoble's Brewery**, Ft. Smith, AK has been restored to the 1848 period by Wortz [cracker] Co. The stone structure, including masonry underground vaults, is open for visitors.

**American Smelting & Refining Co's 605-ft chimney** at Selby, CA, on the Carquinez Straits, tallest in the world when built in 1937, was toppled by 87 lbs of dynamite in June to clear the site for port facilities. *San Francisco Chronicle*.

Bulgarian archeologists have located near Ayi-Bounar remains of over **100 prehistoric copper mines** that were not worked at later periods. Traces of the original work thus have not been obliterated, making them unique as documents of stone and bronze-age mining in Europe. It is believed that many of the ancient bronze tools found throughout Central Europe came from this area. *Compressed Air*.

**Highland Park—half a loaf.** One of the major structures at Ford Motor Company's famed Highland Park (MI) plant (SIAN 1:3:3) will be converted into a modern trim plant initially employing 500. Ford previously had proposed razing the entire 20-building factory. Trim production will make use of 200,000 sq ft of floor space on the 103-acre site. The remainder of the complex will be demolished and replaced with landscaping. At present part of the factory is used by Ford Tractor Operations, scheduled to move next August to Romeo, MI. The Highland Park plant, designed by the great industrial architect Albert Kahn and the world's largest auto factory from 1910 until superseded by Ford's River Rouge plant in the mid-1920s, was the focal point of Model T production and Ford's pioneering work on moving assembly lines. There Ford also introduced his celebrated \$5 Day in 1914. *David L. Lewis, Univ of Michigan, School of Bus Adm.*

### STATIONS & DEPOTS

**New Haven's Union Station**, c1918, modeled by Cass Gilbert on the designs of Henry Hobson Richardson, the annual upkeep of which had reached \$1 million, has been closed by the Penn Central. *Yale Alumni Mag*, Nov.

**Omaha (NB) Union Station**, 1931, Art Deco contemporary of Cincinnati Union Terminal, will be adaptively used. This handsome station, with terra cotta exterior and sculpted figures (depicting a builder, brakeman, and civil & locomotive engineers) over the entrances, was shut down in 1971 by the Union Pacific. Since then the community, its mayor in the lead, has been working on plans to convert the station to multi-purpose museum use. The RR offered the building to the city and 30 local groups expressed willingness to use it. A convincing argument was made on behalf of the project: the structure sitting unused had a tax value of \$738,000; used as a museum it will be worth an estimated \$3.4 million; to build new would cost \$5 million, excluding the land. Expected opening data for the "Nebraska Heritage Center" is spring, 1974. *Museum News*, Nov.



**Mt Royal Train Shed Appeal.** One of the boldest and most successful adaptive uses of an industrial building in the US is the occupation and reworking of the interior of the B&O's magnificent Mt Royal Station (1894), Baltimore, by the Maryland Institute, College of Art. Characteristically, the Romanesque station is architecturally and structurally separate from its train shed, to the rear, although visually an integral part of it. Beloved by the Institute quite as much as the station itself, the shed is used as a sculpture studio and sometime exhibition gallery, despite the fact that B&O trains still traverse its several through tracks. It has become raggedy with time, however, and badly needs repair. MICA and friends are formulating an active funding campaign aimed at RR operators and enthusiasts, local philanthropy, and various governments. The station is, fortunately, on the Natl Register.

**Alabama**—The Talladega Chamber of Commerce will preserve the Louisville & Nashville's 1906 depot for its offices, while the Southern's depot in Belle Mina, c1900, has been moved 1500 ft and converted into apartments.

**The Wantagh Preservation Soc.** Long Island, NY, has taken into custody the LIRR's Wantagh depot, moved and restored it, and placed on track in front of it the RR's *Jamaica* of 1912, in its time, variously, a parlor, business and observation car.

The planners of a \$200-million development that is to be a "city within a city," on the site of Nashville's former RR yards don't impress us with their interest in the **Union Station & train shed**, included in the site, when "The station's future," they tell us, "will depend on an economic feasibility study." What doesn't today?

**The ex-Providence & Worcester freight house** in Providence, RI, 1847, sole survivor, with the Cannelton (IN) Cotton Mill, of Prov architect Thomas Tefft's fine and once fairly numerous industrial structures, is being proposed by a local group as an element in the Bicentennial Commn's "Meeting-house" program, under which obsolete structures, on the Natl Register, may be adapted as information centers-cum-museums for Bicentennial activities. Special restoration funds are available through the Commn for this purpose.



After a 10-year struggle to prevent demolition, there now appears some hope for **Union Station, New London, CT (1885)**. In mid-Sept the city council rejected a last-ditch proposal by a Groton developer to convert it into a shopping complex and submarine museum. (The location is directly across the Thames from Electric Boat, submarine builders.) Demolition proponents such as Mayor Richard Martin—who fought unsuccessfully to keep the station off the Natl Register

in 1971—contend it blocks a view of the river from the new State St mall; that destruction would be preferable to turning it over "to somebody who just might be a speculator;" and that the city must act before its HUD urban renewal contract expires next June. The station's partisans point out that the 1966 Hist Preservation Act forbids use of fedl funds to destroy a building on the Register, and that the city sorely needs the tax revenue commercial utilization would yield. At press time a possible savior has appeared in a newly formed local, non-profit group: Union Railroad Station Trust, Inc., who along with Anderson Notter Associates, Boston (SIAN Troy Suppl), are preparing an adaptive re-use proposal (incl use as an Amtrak RR station, restaurant, and related commercial facilities) for the local re-development agency. URST wants the Romanesque landmark, one of H H Richardson's last commissions, to become part of the urban renewal scheme.

**Windsor Station not of "National Significance?"** Natl Historic Sites Service announced its decision 2 Oct not to declare the 85-year old HQ of the CPR a Historic Site, yet another blow to the work of the newly formed Save Montreal and 3-year-old Friends of Windsor Station (SIAN 1:6), who just this fall produced *Windsor Station* (SIAN 2:5) in support of the station's preservation. For several years the CPR has planned to demolish the structure and redevelop the site with a high-rise complex. It would also seem that even the memory of William Van Horne, directing force of Windsor Station and the CPR itself, is to be obliterated. Save Montreal was unable to prevent demolition of Van Horne's house. Questioned by the *Montreal Gazette*, Peter Bennett, NHSS director, made it clear that Van Horne *was* being honored. "We put up a plaque on the wall of Windsor Station commemorating him."

#### MISC NOTES

**Budd Wilson and Edward Rutsch** (both SIA) currently working on the Salvage Archeology Project in Paterson, NJ's Historic Industrial District (SIAN 2:5) gave papers at the combined Eastern States Archeological Fedn and Council for Northeast Historical Archeology meeting in Newark, DE on 3 Nov. Wilson, on **Industrial Archeological Reconnaissance**, dealt with methods and procedures for locating industrial sites having few surface indications, including surveying, map reading, ethnobotanical clues, surface collecting and use of oral history and documentary sources. Rutsch, on **Salvage Archeology in Paterson's Historic Industrial District 1973**, reviewed the excavations in the 19thC locomotive mfg complex for which Paterson was famous.

**Position Available. American Society of Mechanical Engineers, Administrator of Special Programs.**

Principal Assignments: 1) Administer the ASME natl prog of individual recognition, 2) Provide staff support to the History & Heritage Comm, incl liaison with SIA, SHOT and similar orgs, 3) Provide staff support to Centennial Comm, incl development of 1980 observance prog, ASME participation in Bicentennial, 4) Carry out other special assignments requiring imagination and creativity.

Education/experience in IA and history of technology or equivalent desirable. Recent graduate preferred. Asst Exec Director, ASME, 345 E 47th St, NYC 10017. (212) 752-6800.

**Position Available. Historic American Engineering Record. An engineer** capable of analysing historic 19th-early 20thC structures such as truss bridges, building framing systems, hydropower & water-supply systems, &c, &c. Resumes: Chief, HAER, Natl Park Service, Wash, DC 20240.

**Salt Mines.** Genesee Valley Historical Collection, Milne Library, State Univ Coll of Arts & Science, Geneseo, NY. Material on the Retsof salt mine and other industries; documents & reports on the Genesee Valley Canal and RRs.

**Research Inquiry. Thomas Paine & Iron Bridges.** Emory Kemp, Dept of CE, W Va U, is making a new, far more

searching appraisal of the subject than has been done heretofore. Untapped and obscure sources sought. Morgantown, 26506.

**Research Inquiry. Bricks.** Information on the decorative pressed bricks found in the Conn R valley, especially Holyoke, MA but as far S as NYC. Mfgs, designers, etc. Constance B Barone, 11 Allyn St, Holyoke 01040.

### SIA AFFAIRS

**Editorial comment at conclusion of SIAN Volume Two.** The *Newsletter* has now gone through 12 issues totalling 62 pages (excluding Supplements). While it also has gone through some changes, these have been minor, and the format is essentially the same now as in 1:1. We (the truly plural we of the Board, who act also as the editorial review board) wish now to offer our heartfelt thanks to all of you who have supported the effort through membership, and especially, those who have been *Newsletter* contributors, whether by advising of publications and topics of interest or submitting articles, photographs, reviews and the like. Please do keep it up—send the lesser along with the greater.

Without having any real evidence to support it, we harbor a powerful belief that quantities of two sorts of material *don't* reach us: 1) articles and short notes of IA pertinence in local newspapers and specialized publications that must be seen by many of you ("Warren Barrel Co," above, eg); and 2) reports of your own doings. No undue modesty, please. Of general interest are not only the mammoth 50-man, federally-supported, summer-long, projects, but just as well your own lecture or exhibit (with plenty of lead notice), research or recording project, dig, restoration, preservation, or what have you. Of particular interest would be more news from places other than the NE & Middle-Atlantic US.

To restate from 1:1: the *Newsletter* and the SIA depend for their effectiveness on the support of the reader/membership. If in doubt, send it along—with your news, your comments on content, emphasis, policy, etc. With thanks.

**Advertising.** Beginning with the next issue, the *Newsletter* will accept advertising from firms and individuals offering publications, reproductions, prints and other matter of interest to its readers. Schedule of rates and policy: Editor.

### NOMINATION CALL

The offices of President and VP (1-year terms), and two Directors (3-yr terms), will be filled by vote of the membership at the business meeting to be held Sat, 27 April, during the Annual Conference, Pittsburgh. The Nominating Comm will propose a slate to members at least 30 days prior to that. Suggestions for this slate are welcome—by 1 March to: Eric N DeLony, HAER, Natl Park Service, Wash, DC 20240. Nominations also may be made from the floor (See *Constitution*, Art VII & *Bylaws*, Art III, IV & V (Sect 2) for details). It should be noted that the Board meets about 6 times per year, usually in NYC, and that the SIA cannot pay expenses.

### PUBLICATIONS OF INTEREST

#### REVIEW



B&O RR Collection, Natl Museum of History & Technology

Wm S Young (SIA), **The Starrucca Viaduct**, (the major part of) *Railroading*, No. 48, 4th quarter 1973. Lanesboro Rd, Starrucca, PA 18462. 32 pp. \$2.50.

Like the hero of Hawthorne's *The Great Stone Face*, Wm Young lives and works within the shadow of a brooding monument. That the Starrucca Viaduct is a product of man, rather than nature, has not lessened its spell. Mr Young has written an elegant tribute to commemorate the bridge's one hundred and twenty-fifth anniversary that combines a solid factual history with just the right accent of poetry (a companion to his superb monograph on Tunkhannock Viaduct: "The Great White Bridge," in *Steam Locomotive & RR Tradition*, Aug 1967).

The slender 17-arch viaduct formed a major portage in the NY & Erie Ry's original mainline between the Hudson and Dunkirk, NY. In 1040 ft it spanned the greatest natural barrier encountered in this fledgling ocean-to-the-lakes railway, the Starrucca Valley. In the isolation of NE PA, its Roman grandeur is hidden from the daily view that would memorialize it as those inspired pathways spanning the East River or the Golden Gate. Yet while it predates these marvels by many generations, it remains an obscure, virtually unknown engineering landmark.

Construction began in the spring of 1847. To preserve the line's charter it was necessary to open the road to Binghamton before the end of 1848. In a heroic effort, a work that might have required years was finished in just over 18 months.

Considerable space has been given to the men responsible for its design and construction, principally engineers Julius W Adams (the designer) and James P Kirkwood (traditionally cited for the design but actually the builder).

This study is well researched and written. The illustrations are abundant. The printing and reproduction are excellent. On all counts, it is first-rate.

John H White

Natl Museum of Hist & Tech.

*NOTE: in the interest of legibility, henceforth the titles of all books AND articles in this section will be in boldface.*

Sonja & Will Anderson, **The Beer Book**. Princeton: Pyne Press (distr Scribner's), 9 x 10½, hard, 224 pp illus. \$17.50 (14.95 from authors, Possum Ridge Rd, Newtown, CT 06470). Some brewery history but mostly breweriana.

Robert G Baxter, **USA Train Travel Guide**. Rail-Europe, Box 355, Alexandria, VA 22302. \$3.95. Author of 10 European rail guides describes hundreds of Amtrak service details, incl station facilities & Canadian and Mexican connections.

Ian Bradley, **A History of Machine Tools**. 224 pp, illus. London, 1972. \$9.50.

Carl W Condit (SIA), **Chicago, 1910-29: Building, Planning and Urban Technology**. Chicago: Univ of Chicago Press. \$12.50.

John Farey, **A Treatise on the Steam Engine**, 2 vols. xiv + 728 pp. XXV Pls; 320 pp. 1st publ 1827, reprint by David & Charles, Newton Abbot, Devon, Engl, 1971. \$38.50. A classic of techn writing incl probably the best introd to the mechanics of the Newcomen and Watt engines ever. Splendid plates by Farey.

John Hall, **You might get arrested for a thing like that. .**, in *Yankee*, Nov, pp 124-31. Bureaucratic difficulties encountered in attempting to restore the Kingston, RI station.

Harold D Kalman, **The Railway Hotels and the Development of the Chateau Style in Canada**. Inst for the Study of Universal History Through Arts & Artifacts. (Can) Box 1891, Victoria, BC; (US) Box 363, Watkins Glen, NY 14891. 1968. 8½ x 11, 64 pp, illus, paper. \$3.

Emory Kemp (SIA), **Industrial Archeology—An Avocation for Engineers**, in *Engineering Issues* (ASCE), October 1973, pp 481-98. General comments and some examples of field recording by W Va Univ teams.

Larry D Lankton & Patrick M Malone (both SIA), photos by Lyn Van Buskirk, **The Power Canals of Lowell, MA.** Occasional Paper of the Lowell Urban Natl Park Proj. Human Services Corp, 154 Moody St, 01852. Oct 1973. 35 pp, diagrams, maps. \$1.50. Expansion of LDL's paper, 1973 SIAN Annual Conf, Troy.

John Maass, **The Glorious Enterprise: The Centennial Exhibition of 1876 in Philadelphia**, and H. J. Schwarzmann, **Architect-in-Chief.** Inst for the Study of Universal History. (see Kalman abv). 8½ x 11, 200 pp, illus. \$15.

K G Ponting ed, **The IA of Wiltshire.** Wiltshire Archaeological Soc, "Wyndhams," Schrewton, Wilts, Engl. 28 pp, illus. \$1. Well-organized collection of articles: canals, textiles, housing, railways, roads, wind & water power, quarries.

Carolyn Smyly, **Keremeos Grist Mill**, in the *Beaver*, Autumn 1973, pp 28-33, \$1; Hudson's Bay Co. quarterly, Winnipeg R3C 2R1. Well illus description of the history and operation of extant mill, 1867-92, of hewn log constr, with original English and American equipment, at Keremeos on central portion of the BC-Washington border.

**Bulletin of the Historical Metallurgy Group.** The most sophisticated and scholarly attempt to apply scientific research to IA in GB, and a model of what can be achieved. Vol 6 No 2, (1972) eg: Condensing systems used in lead smelting; Iron & steel mfg on the Dee Estuary in N Wales; the Redesdale Ironstone Beds; Metallographic examination of 16thC armour; Excavations at Chingley Furnace; etc. Hon Editor: Dr R F Tylecote, Dept of Metallurgy, Univ of Newcastle upon Tyne; subscriptions: C R Blick, 147 Whirlowdale Rd, Sheffield S7 2NG, Engl. \$4 annually.

Peter Larkin, ed, with Wm Naftel & Martin Weil (SIA), et al. *Windsor Station.* Handsome report on the present threat to the station and its history from 1887. Fine early photos; developmental site maps. Bilingual. \$1.50 from Friends of Windsor Station, 4920 Boul de Maissonneuve #303, Montreal 215, Quebec.

Victor Morse, *36 Miles of Trouble.* New edn, new illus, maps (1st publ 1959). Brattleboro, VT: Stephen Greene Press. \$2.95 paper. Saga of the West River RR, Windham Co, VT.

## VIEWPOINTS

### The Envelope vs the Letter

*Editor:* I find the current discussions about the purpose and philosophy of IA somewhat worrying. What concerns me is that the great majority of serious practitioners seem preoccupied with the surviving material structures—the mills, canals, furnaces, etc. While not decrying the importance of this aspect of the subject, I would urge members of this society, which is in its formative years and so can decide its area of influence and activity, not to lose sight of the importance of the technologies that were carried out within these surviving structures. To record only the building in which an industrial activity was carried out and to gloss over, or even worse, ignore the industrial activity itself, is to my mind indefensible, and for the future of archeological work in general is near-criminal.

I would urge that the serious and committed practitioner of IA become interested and informed about the growth and development of technology, for without this kind of knowledge, the work he is doing on the material structures cannot be fully comprehensive. I am well aware of the existence of societies concerned with the history of various technologies, but it is my experience that in England many people who express an interest in IA neither support these societies nor make very much use of their expertise when working on an IA site.

To my mind, IA over here is in the same stage as traditional archeology was in the middle of the last century. How soon we can drag ourselves into the 20thC remains to be seen.

A P Woolrich

Bristol, England.

*The SIA has always strongly supported the view of IA as a field that, if not fully committed to interdisciplinary cooperation, has no business existing. There are many reasons that buildings have received more attention from recorders than the contents, and a certain amount of such imbalance probably is inevitable. It is indisputable, though, that the traditional historian of technology has much to teach these of us who don't look beyond the sheathing.*

*Editor:* In SIAN 2:4 I requested titles of IA interest for inclusion in a film catalog I am preparing. The response has been appalling. Only four titles have been submitted, yet many SIA members requested the compiled list. This confirms my fear that there is either a general ignorance or apathy about the utility of the motion picture in IA-related activities. The film can be an extremely profitable and powerful tool for professionals, amateurs, and other enthusiasts of IA, used both as primary research material and for recording and documenting sites and processes. Of additional importance to those seeking support for their activities is the educational potential of films. I would like to outline briefly what has, has not, and can be done with films and IA:

Surprising to many, motion picture footage is a valuable primary resource. For instance, films recovered from copyrighted paper stock at the Library of Congress include a 1903 Edison production, made to promote commuter traffic on the Lackawanna RR. Another, 1906, treats tunnel workers and skyscrapers. American newsreels, available at various film archives, also contain footage germane to IA. The British Film Inst has compiled a catalog of films, 1895-1934, in the Natl Film Archive which includes numerous films on industries and industrial processes such as glass, locomotive, textile, and iron and steel mfg. The catalog contains many films of interest to NA IAists, for instance: *The Building of a Transcontinental Ry in Canada*, 1910, and *The Story of Oil*, an early film showing one of Esso's refineries and its processes.

Although the potential of the motion picture camera as an IA recording technique is enormous, it has been little used. Film can be one of the best ways to record a site and, even more importantly, any processes that go on there. Perhaps HAER reflects most accurately the general attitudes of practising IAists. Much of their survey time has been spent making detailed measured drawings of buildings, with little attention given to documenting processes. No doubt some of these processes will be lost forever because of this emphasis. I submit that these drawings are useful to architectural historians and people with special interests, but are not generally educational. This is where the motion picture can answer two important needs in IA: It can record sites and processes while because of the medium, having entertainment and educational value.

The British were the first to realize the educational potential of IA films. Since 1966, for example, the Salisbury & South Wilts IA Soc has presented film programs and have assembled a list of over 150 films covering the mineral industries and building materials, iron & steel, engineering, power, textiles, transportation, crafts, industrial housing, etc. Some of these are professional films, but many were made by amateurs. Kenneth Hudson has produced a series of ten-minute films with BBC, to advertise historical-industrial sites and museums open to the public. The response—increased site visitation—has been very favorable.

If IA in NA is to prosper significantly, I feel that it must consider seriously the use of motion pictures to record, to educate, and to popularize. Perhaps a session at your annual meeting on motion picture techniques would be profitable.

David Hounshell      National Museum of History & Technology

*Some purely IA films have been made in the US: Hagley and Smithsonian recorded Hoopes, Bro & Darlington's wood-wheel works, 1969; and the HAER has recently filmed the Bretz, WVA coking process (SIAN 1:4) and glassmaking at Morgantown, WVA. Jan 1974 SIAN will contain details.*