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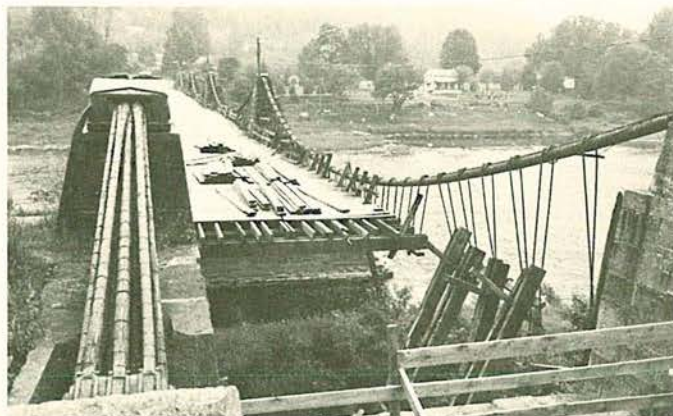
July 1977

DELAWARE AQUEDUCT DECK FAILS UNDER GROSS OVERLOAD

Roebbling's suspension aqueduct built in 1848 to carry the Delaware & Hudson Canal over the Delaware between Lackawaxen, Pa. and Minisink Ford, N.Y. handily carried 490 tons of water in the timber trunk of each of its four spans, or about 3.5 tons per lineal foot of span, to the cessation of canal service in 1898. When converted to a highway bridge shortly thereafter, the walls of the trunk, acting as beams, continued in their original function of distributing the load over long sections of the structure

permitting the accommodation of considerable concentrated loads. That feature of the structure was lost, unfortunately, when a fire in 1932 destroyed part of the trunk. The deck was rebuilt in timber as a simple system of transverse floorbeams hung from the suspender rods, longitudinal stringers bearing on them, and transverse planking for the wearing surface. This became the structure's weak link, with capacity vastly below that of the suspension system. But it was adequate for the moderate local traffic crossing the earliest standing suspension bridge in the Western Hemisphere, a private toll span owned and operated by Albert Kraft [SIA] [SIAN July 73:1]. The six-ton restriction—posted by the two state highway authorities, not Kraft—routinely was ignored, both by the drivers of the trucks that used the bridge regularly, and the toll takers, all well aware that the limit was far more conservative than necessary. Up to a point, that is.

On 23 June a flatbed truck loaded with used railroad ties went through the deck just beyond the N.Y. abutment, falling 30 feet and landing on its back in a vestigial canal bed on the bank, a survival of the D&H's original alignment prior to the aqueduct crossing. Neither driver nor helper was seriously hurt. Nor was the bridge's original fabric. Cables and suspenders weren't fazed and the only real casualty, aside from the truck, was about half the deck system of the first span, which Kraft proposes to have replaced by October, when the legal aspects of the episode are unravelled. To this end he has permitted the errant truck to be hauled out and away but not the guilty ties, which remain *in situ* as hostages in evidence of someone's misjudgment. Meanwhile, John A. Roebbling observes it all with total lack of surprise; perhaps mild amusement.



The damaged aqueduct—looking toward Penna. from the N.Y. abutment. On left are the cable strands, attached to the links of the anchor chains (bottom) and covering at the first tower saddle, just beyond which they are bundled into the characteristic cylindrical form as seen on the right.

VANDALISM AT SCHOHARIE CREEK

And as though the accidental damage to our industrial archeology weren't sufficiently tragic, what is to be said of the creatures who deliberately destroy? The Erie Canal's Schoharie Creek Aqueduct remains were outraged for the second time in four months [SIAN May 77:4] when over the Fourth of July vandals prized 16 of the coping stones from the towpath wall and dumped them into the creek below. Funds for the aqueduct's restoration have been refused by the state legislature for years. Whether this incident coupled with the recent arch collapse finally will stir the gang in Albany to apply aid here, where so badly needed, is unknown.

THE AUGUSTA CANAL

On 1 March 1976, Ernie Holz, southeastern representative for the (federal) Advisory Council on Historic Preservation, chaired a hearing in Augusta, Ga. on the proposed extension of the John C. Calhoun Expressway which would bridge the historic Augusta Canal. The canal and adjacent textile mills (mentioned by Pres. Carter in his *Why Not the Best?* as an area of unusual historic interest) date from the 1840s, though most of the extant factories date from the 1870s when the canal was enlarged. Although no structures are scheduled to be razed in the present plan, the expressway would tie into a street that is the center of an area

eligible for the National Register.

The initial damage to the canal will be from the highway's visual impact and the intrusion of traffic noise and air pollution. The real threat from this project will be the changing land-use patterns that invariably follow highway construction. It is not at all unlikely that once the highway is in operation, the historical aspects of the area could be viewed as expendable and the old buildings destroyed to make way for gas stations and fast-food operations.

Although the hearing was well attended, only a few voices were raised in opposition to the expressway extension. For the most part, excluding representatives of the Dept. of Transportation and a few businessmen, the speakers had confused opinions. Some thought the expressway might be routed another way; some wondered about an expressway that does not link up with another expressway; there was not a solid consensus that facilitating traffic to the downtown area would revitalize Augusta's central business district; the city engineer even spoke against the Canal itself for all the trouble there is in its maintenance. But even for the lip service paid to Historic Augusta by the local citizens, the expressway is synonymous with progress in their minds and they appear to want it.

On the brighter side are two developments: first, the Augusta Canal and adjacent mills are the subject of a HAER survey this summer. Second, there is a plan to make a state park out of much of

the land adjacent to the canal, to include a museum that will interpret the industrial history of the area, bike paths, and other, mostly day-use, facilities. Unfortunately, lack of funds, compounded by differences between the city—which owns the Canal—and the state have prevented much forward motion on this project. As for the expressway extension, it will go before the full Advisory Council sometime in the fall. *S.J.G.*

THE INDUSTRIAL LANDSCAPE: LAWRENCE, MASS.

Industrial landscape preservation, once a no-no, attracted a new source of support this spring. At the suggestion of Thomas W. Leavitt, Director of the Merrimack Valley Textile Museum, Dr Peter Hornbeck of Harvard Univ's. Graduate School of Design assigned fifteen students to prepare proposals for enhancing and preserving the land immediately surrounding Lawrence's Great Stone Dam and the North Canal (1845). Both engineering monuments were added to the Natl. Register in 1976 on the initiative of the Museum. Hornbeck, a resident of nearby N. Andover, and prof. of landscape architecture and city planning, said later the project was so successful that he and his colleagues hope to study a series of similar landscape preservation problems in

Contributors to this issue: Paul M. Bray, Hudson-Mohawk Urb. Cult. Pk. Commn.; Richard M. Candee, Portsmouth, N.H.; Field Curry, Pittsburgh; Eric N. DeLony, HAER; Robt. M. Frame, Minn. Hist. Soc.; Brent D. Glass, N.C. Divn. of Archives & Hist.; Stephen J. Goldfarb, Spelman Coll.; Thos. W. Leavitt, Merrimack Valley Textile Mus.; Carol Poh Miller, Cleveland; Bruce E. Seely, Hagley/Univ. of Del.; Raymond W. Smith, N.Y.S. Off. of Parks & Rec. *With thanks.*

other New England mill towns.

In addition to "improving" the area around the North Canal—a municipal/state partnership project—local private interests are now studying the possibility of erecting a hydroelectric station near the dam, the power to be purchased by the Mass. Electric Co.

Student proposals included a scheme for developing a public exhibit area in or near the Canal gatehouse; landscaping the Canal borders for park-pedestrian purposes; restoring the remaining boarding houses which face the Canal; and "opening up" the area around the locks and spillway at the Canal's end. The prospective hydroelectric developers pronounced themselves pleased with the possibilities.

Museum staff members who assisted the students included Laurence F. Gross, Curator; Helena Wright, Librarian; and Betsy Bahr, Ast. Curator of Education. *T.W.L.*

THE URBAN CULTURAL PARK

Special Report on a Special Report

Lowell, Massachusetts. Report of the Lowell Historic Canal District Commn. to the 95th Congress of the U.S. U.S. Govt. Printing Office. (Stock No. 022-001-00070-1) \$4.15.

Some years ago the Natl. Park Service realized that its historic sites did not reflect the ethnic, urban, and industrial contributions to our national history. This new plan, created by The Lowell Team of planners and architects, gives specific recommendations for a Lowell National Cultural Park within the NPS. It is a mark of how far an IA consciousness has pervaded the Park Service and the preservation movement in recent years, that the Report addresses several complex issues (governmental incentive for private investment, shared ownership, and the public purposes of preservation), advocating urban redevelopment through industrial rehabilitation.

The Report identifies the historical significance of Lowell and shows prior governmental commitments to preservation of the city's heritage. What is now proposed is a highly concentrated scheme for large-scale development in three adjacent sections of the downtown. Near the junction of the Pawtucket and Merrimack canals, the Lowell Mfg. Co. complex is seen as a Visitor Center (with parking, hotel, retail, and exhibit functions). From here both barge and train services could carry a large (anticipated) tourist population through the earliest remaining commercial and industrial sections of the city where public improvements and NPS exhibits would be mixed with adaptive uses of the Boott Mill complex by private developers. Visitors also could encircle the downtown by barge via the Eastern Canal and a state park to be developed at its junction with the Lower Pawtucket Canal. A secondary canal loop to outlying recreational areas (including a stop at the Francis Gate) also is proposed.

The Report also provides some very informative appendices: a summary of the Mass. State Park plans; an inventory of physical resources in Lowell; and six alternative concepts the Commn. considered for creating an urban cultural park. The recommended plan is the most costly; \$40 million federal in two five-year phases beyond the \$26 million already spent or committed to date from local, state, and federal agencies. Envisioned are up to 750,000 new tourists per year, 1200 person-years of construction, and untold spin-offs in the private sector.

While one may question whether a tourist industry of this scope actually will develop (such plans often are highly optimistic) the impact on the depressed economy of the whole region obviously would be positive.

Of the three appended statements of Lowell's historical significance, my own favorite is that of Paul Rivard. He sees the

importance of creating this Natl. Park not only in preservation and economic terms, but as helping introduce factory work to a central place in the national historical consciousness. This, it seems to me, is a far sounder rationale than those stressing the social or technological achievements of Lowell's Golden Era (before c1850). The unity of that planned town as first built is gone; later industrial expansion and modern urban renewal have combined to isolate what remains of that early period. Unlike Manchester, N.H. (where mills, boarding houses, and related growth can be visually understood) Lowell needs this kind of formal structure to highlight remnants of its beginnings among the physical presence of that which made it a late-19thC immigrant city. Despite efforts by historians of the Golden Age, the lack of real physical remains for this period in Lowell has helped foster an interest in the ethnic communities and unplanned growth that supplanted it. If Congress and the Park Service listen closely to Rivard's ideas, Lowell's experiment for a Natl. Cultural Park addressing its genuine assets, could give meaning to today's factory worker about the roles of capitalism, industrialization, technology, and immigration in transforming American life. *R.M.C.*

N.Y. Cultural Park Legislation

The cultural park model for management and enhancement of urban resources as it has evolved mainly in Lowell is being applied in N.Y. State. The neighboring municipalities of Troy, Waterford, Cohoes, Watervliet, and Green Island at the confluence of the Hudson and Mohawk rivers have established an urban cultural park commn. to cooperatively develop and implement a comprehensive program. Its focus includes conservation and recreational use of the river frontage, adaptive reuse of older buildings, associating the area's attractions into a regional tourway program, and utilizing the cultural heritage of this 19thC industrial area for its educational value.

Two bills have passed the state legislature this year, confirming and advancing the concept. One designates the area an Urban Cultural Park and establishes a partnership between the state and the local commn. to plan for the development of a Hudson-Mohawk heritage trail. The legislature also set in motion the planning for the enjoyment and revitalization of urban areas through the management of natural and cultural resources. This is to become the basis for a statewide system of urban cultural parks.

Planning is to be done by the state office of Parks & Recreation assisted by an intergovernmental advisory council. Study areas with a special coherence, and distinguished by physical and cultural resources are to be designated by 1978 and the plan submitted to the legislature and governor by 1980. *P.M.B.*

THE WORK OF IA

Although it is, of course, also "the work of IA," preservation occupies so large a segment of the spectrum of IA activities that generally we report it elsewhere. Herein, as a rule, are described the activities of recording, excavation, courses, and other forms of field work and education. It seems likely that more of this is going on out there than we hear of. Reporting on one's own activities should never be taken as a form of self promotion—if that's what's causing the silence—rather it is a legitimate means of "diffusing knowledge among men and women . . ." as James Smithson once so nearly put it. First or third person, share with the world the news of your own and other IA projects.

RECORDING—HAER

The Summer High Season at the Historic American Engineering Record is, as traditional, alive with activity this year. There are eight "straight" recording projects afoot:

Augusta, Ga.—a wide variety of sites, most centered on the Augusta (power) Canal, including the canal itself (1847 & 1875), the Enterprise, Sibley, and King textile mills (1877, 1881, 1882), the Granite Flour Mill (1848), and others.

Columbus, Ga.—a group of industries established at the Falls of the Chattahoochee River in the late 19th and early 20thCs, several with early hydroelectric equipment still in place. A HAER preservation planning team also is conducting feasibility studies of potential adaptive use schemes for some of these properties as made possible under the 1976 Tax Reform Act.

Long Island, N.Y.—the third summer of recording the region's wind and tide mills. The Gardiners Island Windmill of 1795 will be recorded and Natl. Register nominations and research reports on all windmills and the two surviving tide mills will be prepared.

Lynchburg, Va.—a special project combining both inventorying and preservation planning, focusing on the downtown industrial area.

North Carolina—the second summer. (See report below.)

Puerto Rico—continuing last year's work, to record two sugar mills; a water-powered coffee mill and plantation; and a corn mill with a rare Scotch-type hydraulic turbine. A major inventory of the island's IA also is being conducted.

Virgin Islands—recording four sugar plantations and a boatyard, with the exception of one plantation all housing 19thC steam machinery.

Old Schwamb Mill (Arlington, Mass.)—recording the plant, process, and four generations of power machinery at one of the earliest—and sole surviving—factories producing elliptical picture frames.

In addition to these eight in the field, several projects are being carried out at the HAER offices: the field and historical data from two earlier undertakings—the **Erie Railway Survey** (1971) and the **Indiana Survey** (1972-73)—are being correlated and put into final written form; the entire **HAER inventory file** is being prepared for computer access; two inventory publications—**Cleveland** and **Rhode Island**—are in preparation; several state-wide inventory projects are in planning (**Calif., Kansas, S.C., Wash., and Ohio**); and the HAER "Emergency Recording Team" documented several sites, including the mid-19thC **steam pumping station of the Chesapeake & Delaware Canal** at Chesapeake City, Md. (seen during the 1977 SIA Annual Conf.), and **Grant's Saw & Grist Mill** in R.I.

Two inventory projects are being conducted in addition to that on Puerto Rico: **Michigan's Upper Peninsula** and **Oneida Co., N.Y.**

A pamphlet more fully describing the 1977 work is available from HAER, Natl. Park Service, Wash, DC 20240.

NORTH CAROLINA

Progress in identifying, protecting, and enhancing the state's industrial and engineering heritage can be reported on several fronts:

Recording Projects: Last summer (1976), three sites were recorded by architects James Vaseff and John Davis, and the writer

as historian. These included a horse-powered cotton press (c1835) in Anson Co.; a "bee hive" kiln (c1890) at the Pomona Terra Cotta Mfg. Co. in Greensboro; and the Salem Mfg. Co./Arista Cotton Mill complex (1837; 1881) in Winston-Salem. The sites were selected because they were threatened either by deterioration or proposed demolition. The project was sponsored by the N.C. Divn. of Archives & History (DA&H) and a report on the project was published by HAER.

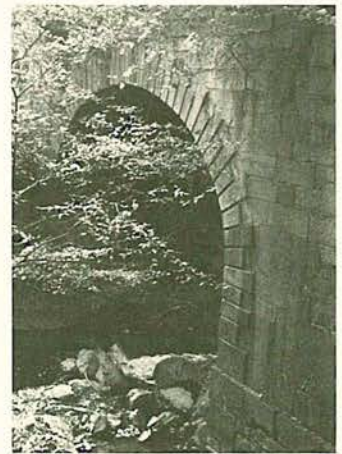
An intensive summer recording project will be underway in 1977 to include a horse-powered cider mill; a tobacco warehouse in Durham; a textile mill village and water power system near Burlington; the Coggins Gold Mine (1882) and its c1913 stamp mill in Montgomery Co.; and the Southern Ry's: repair shops at Spencer. Three student architects and three student historians will spend twelve weeks on the project, co-sponsored by DA&H and HAER.

National Register: Within the past year several IA sites have been nominated to and listed in the NR. Most notable was the nine-mile Roanoke Canal, construction by the Roanoke Navigation Co. 1819-23 around the Great Falls of the Roanoke. The most significant remains include a double lock system, each lock 100 ft. long and 16 ft. wide with a lift of 9 ft., and a stone aqueduct over Chockoyotte Creek, a beautiful structure 110 ft. long with a clear span of 30 ft. The canal, locks, and aqueduct were designed by Hamilton Fulton, a Scottish engineer. The canal was in use until the 1840s when rail competition overtook the navigation company. In the 1890s a new company tried to develop the canal as a power source, erecting generating stations at the lock site and at flour mill near the basin at Weldon. The Halifax Co. Arts Council now plans to use the locks and generating plant as an arts center. No plans have been announced for the aqueduct.

Other recent NR entries include the Columbia Mfg Co. (1850), Oakdale Mfg. Co. (1865; 1889), and the Coleridge Mill complex (1882), all textile mills. Nominated are the Salem Mfg. Co./Arista Mills complex (1837; 1881), Falls-Neuse Mfg. Co. (1854), and the Shamrock Hosiery Co. (1911).

Historic Sites: The DA&H opened two state-owned historic sites and visitors' centers this spring, designed to interpret two important industries in the state—gold mining and tobacco "manufacturing." The **Reed Gold Mine** in Cabarrus Co. (NHL) is the site of the first recorded discovery of gold in the U.S. This discovery and the subsequent opening of surface and vein mines in the western Piedmont triggered the first American gold rush and led to the establishment of a branch U.S. Mint at Charlotte in 1837. The Reed Mine has been the subject of extensive historical and archeological research concentrated especially upon the technical operations used. The site includes a pictorial review of N.C. gold mining history, a tour of the underground section, exhibits of steam engines and mining machinery (including a 10-stamp mill, manufactured by the Mecklenburg Iron Works of Charlotte), and the remains of an engine house and Chilian ore mill (c1855).

The tobacco industry, one of the major factors in N.C.'s economy, is commemorated at **Duke Homestead** (NHL) north of Durham. It was the homeplace of Washington Duke and his sons Ben, James B., and Brodie. The manufacture of tobacco products in the 19thC was an extension of agriculture in the state's northern Piedmont counties. The Dukes developed a very successful smoking tobacco, "Pro Bono Publico," following the Civil War. Later they moved to Durham and, after the introduction of the Bonsack cigarette machine in 1884, expanded rapidly as Washington Duke & Sons, becoming the parent company to the American Tobacco Co. The historic site consists of the Duke home,



M. Southern photograph.

Duke's third "factory," and a visitors' center and museum with exhibits on the history of tobacco cultivation, processing, manufacturing, and marketing.

Recycling: One of the more notable private preservation efforts has taken place in the former mill village of Carrboro. There the **Alberta Mill complex** (NR) once a transportation, commercial, and industrial center of local importance, has been revived to serve residents and the burgeoning university population from Chapel Hill. The railroad depot (c1913) has been tastefully transformed into a restaurant. The Alberta Mill itself, an 1898 structure once slated for demolition, received an infusion of local interest and capital and opened in May as a "shopping village." The basic features of the brick building—the tall, arched windows and timber beams—have been retained. The spacious lawn and oak trees also were saved and give a "town square" effect to the new marketplace. The ample interior provides additional space for offices, medical facilities, and a public library. The developers, Southern Real Estate, and the architects, Miller, Steever & Finch, both of Charlotte, encouraged by the possibilities of industrial structures, by the enthusiastic public response, and by the incentives for rehabilitation provided by the Tax Reform Act of 1976, are looking for new projects around the state. Due to a special appropriation, HAER has been able to field a three-person team (an architect and two planners) to study the possible tax advantages for rehabilitation of railroad repair shops in Spencer and the Arista Mills complex in Winston-Salem, where Community Development money is being committed for the project. *B.G.*

EDUCATION

OKEMOS MILLS. During the 1976 summer the Mich. State Univ. Dept. of Anthropology Summer Field School was conducted at the site of a series of 19thC grist and saw mills in Okemos, Mich. Test excavations were made, locating the sites of one mill and two dams, and a wide range of documentary evidence was gathered.*

ARCHEOLOGISTS CONFRONT THE INDUSTRIAL PAST, a five-week course for Smithsonian Institution Resident Associates this spring, introduced its participants to IA, dealing separately and sequentially with investigating, surveying, recording, preserving, and interpreting industrial sites. The course was organized by Theodore A. Sande, with lectures also by Robert M. Vogel and Eric N. DeLony [all SIA].

THE IA INSTITUTE: University of Vermont, 17-22 July. The enthusiasm among both students and instructors was as high as the temperature; the week was the hottest recorded in recent years not only for Burlington but the rest of the nation as well. Everyone got dirty hands and worked up a good sweat recording the Champlain Woolen Mill (1912) at Winooski, a mill typical of hundreds erected in New England during the early decades of the 20thC.

In addition to field recording, participants were introduced to the diversity of resources that constitute the historic industrial landscape. Dianne Newell [SIA Pres.] went beyond the recognition and appreciation of the industrial artifact and demonstrated what historical inferences and conclusions one could develop from IA site investigations. Russell Fries [SIA Secy.], using Paterson, N.J.'s National Historic Industrial District as a case, discussed the 20thC trials and tribulations usually encountered in preserving an industrial resource (for example, when decay, local ambivalence, and the often conflicting aims of state and federal public works projects gang up to threaten a site.) Jane McLuckie, Vt. Div. for Historic Preservation, explained how IA may be integrated into the preservation mainstream through state and national registration, a procedure that often opens the doors to funding sources and provides protection through state and federal environmental statutes and review processes. Jack E. Boucher [SIA], Supervisor, Photography & Pictorial Records, Natl. Park Service, demonstrated the use of large- and small-format photography and explained what is meant by records of "archival" quality. David Schaaf [SIA], veteran of many HAER summer recording projects, revealed the secrets of architectural delineation when students attempted (quite successfully) to translate field notes into hard-line measured drawings.

Factors that enhanced the institute were the low cost (\$140 for

Vt. residents, \$170 for non-residents) of the two-credit course, which included room and board; and the fact that all participating were involved in some capacity with the preservation of the built environment.

Especial thanks are due to Chester H. Liebs [SIA], Dir. of the Univ. of Vermont's Historic Preservation Graduate Program, and the Dept. for Continuing Education for sponsoring the course. It is hoped that it will continue, as there are no other known opportunities in North America to gain practical experiences in IA at the university level. *E.N.D.*

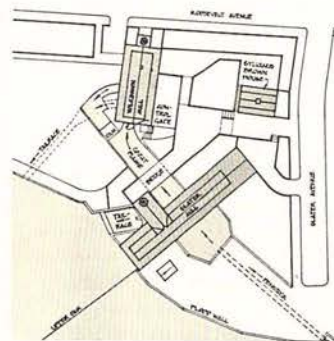
EXCAVATION

HARMONY BORAX WORKS. Last Oct. and Nov. the Western Archeological Center, Natl. Park Service, conducted limited excavations at the Harmony ruins in Death Valley, Calif. Surviving is a four-level ruin built against a hillside, with remains of buildings, machinery, piping, and waste tailings. In addition there is an associated townsite containing remnants of buildings and trash dumps relating to the company settlement at Harmony. The purpose of the excavation was to obtain clearance for stabilization operations. Detailed records were made of above-ground features, and below-ground features likely to be disturbed by stabilization were excavated. The research design centered on reconstruction of the refining process, on processes of trade and communication, and on interaction of Chinese and non-Chinese at the plant.*

WILKINSON MILL. Without any question the most significant, not to say interesting restoration project underway in the U.S. is that of the original waterpower system and equipment of the Wilkinson Mill (1810) at Pawtucket, R.I., adjacent to the Slater Mill. The early stages of the mill's wheel pit excavation were seen as long ago as Oct. 1972 during the SIA Quinebaug (& Blackstone) Valley Field Trip, and the work has continued off and on since, under the direction of Albert Bartovics [SIA], of Brown Univ. and North Adams (Mass.) State College. The deliberate pace has ensured that the work is conducted with extreme care, every bit of evidence turned up being carefully examined in the light of what is known about the means of harnessing the power of the Blackstone to drive the mill. Early in the work the timber breast of the wide breast wheel was located in place, and more recently bits of wood possibly from the wheel itself have been exhumed.

The excavation is specifically directed at the restoration of the wheel and its entire drive to the mill's machinery, which when completed will be the only example of an early 19thC breast wheel driving a textile mill in N. America. The detailed architectural planning for the project is being carried out for Slater Mill Historic Site by John Milner Assoc., Charles A. Parrott [SIA], project director. Parrott's general plan for the site is shown here, reproduced from SMHS's bimonthly *The Flyer*, in which the project's progress periodically is reported. (Available gratis: SMHS, Pawtucket, RI 02865.)

The Natl. Endowment for the Humanities recently awarded SMHS \$3286 for planning for interpretation of industrial power production in the 19thC in conjunction with the power project, to be based on the water-wheel restoration, and future exhibits of the turbine in the Slater Mill and a Harris-Corliss steam engine now in storage. The grant will support a planning team of historians, archeologists, and designers who will examine the social, economic, and technological implications of water and steam power, and plan an exhibit to interpret these in the context of the museum's own holdings of artifacts.



Slater-Wilkinson Mill Site showing hydraulic races to be reconstructed. John Milner Assoc. drawing.

*Abstracted from report by Paul J. F. Schumacher [SIA], in the Newsletter of the Soc. for Historical Archaeology, March 1977.

SAVED: THE LAST SURVIVING BESSEMER CONVERTER IN PITTSBURGH—AT LEAST MOST OF IT.



The Byers converter before disassembly, sole remnant of the plant which was leveled around it. *John Kotsch photograph.*

Thanks to the historical awareness and generosity of the Assn. of Iron & Steel Engineers (who donated \$25,000 for the purpose) the converter was disassembled and moved from the former A. M. Byers Co. plant in Ambridge, Pa. to be reassembled, perhaps this fall, for display at the Station Square project at the P & LE RR complex [SIAN May 77:3] on Pittsburgh's South Side.

The small, 10-ton vessel, built by Pa. Engineering Corp., of New Castle, was one of two installed in 1929 at a new plant Byers was building to exploit a revolutionary process for the large-scale production of wrought iron, invented in 1925 by James Aston, metallurgy prof. at Carnegie Inst. of Technology. The key feature of the process was formation of the wrought-iron-sponge ball by pouring a stream of highly-refined steel into a cup of molten slag. Notable in its day, the plant included pipe, bar, and plate mills and had a capacity of 1000+ tons/day. Due to reduced demand for wrought-iron products following WW-II, the plant gradually was shut down in the 1950s and 60s and finally scrapped in 1974. Other than a few reusable buildings, nothing remains but the converter.

Unfortunately the converter is bottomless; no bottoms survived the scrapping process. The quick-detachable bottom, consisting of tuyere plate, wind box, elbow pipe, and cover, was one of Alexander L. Holley's (1832-1882) many contributions to the early and rapid development of Bessemer steel-making in this country. Since the converter bottom lasted for only 25-35 blows, a continuous supply of rebuilt bottoms was required to keep the plant operating at maximum capacity. Bottoms could be changed in about 1/2 hour.

It had been hoped that the second converter of the pair would be saved and reerected at the Henry Ford Museum, Dearborn, Mich., but the scrap dealer got there first—which proves not that the Ford folks were slow but that when competing with the metal scrappers one must be faster than a speeding bullet. *F.C.*

VIADUCT REMNANT RESTORATION



Carol Poh Miller photograph.

A remnant of Cleveland's Superior Ave. Viaduct, on the west bank of the Cuyahoga in the area known as the "Flats," has always been a magnet for artists and historians. It provides an excellent vantage point for a panorama of this city's industrial and engineering heritage, with a particularly fine view of some half dozen movable bridges that service river, road, and rail traffic. The stone-arch viaduct, constructed 1874-78 as a major link between Cleveland's West Side and downtown commercial center, was replaced in 1917 by the Detroit-Superior High-Level Bridge (NR) and eventually was dismantled. Its western approach, however,—about 1/3 of the original length of 3,211 ft.—somehow survived.

Cleveland businesswoman Isabel Tener has proposed a plan to restore the weedy, neglected viaduct and develop it as a park feature. The Cleveland chapters of Altrusa Intl. and Soroptomist Intl., service organizations of area businesswomen, are sponsoring Tener's project, which she has named "Viaduct View." Other civic organizations have joined the campaign, which still awaits funding. Cleveland's Building Trades Council has promised to provide the necessary labor, much of it free.

Plans, conceived by Martin Linsey of the Cleveland Museum of Art and made specific by local architect David Lehmer, call for restoration of the masonry and ornamental iron railing, grading and surfacing for parking, landscaping, park benches, and plaques to inform visitors of the important structures nearby. "Viaduct View" coincides with a general renewal of local interest in the Cleveland Flats, one of the most exciting industrial landscapes anywhere. *C.P.M.*

IA IN ART

While untitled, this set of three figures could be called "The Miller's Progress." Created by sculptor John Karl Daniels of Minneapolis (born 1875; still alive and sculpting) they are mounted atop the 12-story Utility Building erected 1914 by the Washburn Crosby Co. (now General Mills). Contiguous with Minneapolis' famous 1879 Washburn "A" Mill (not to be confused with the perhaps more famous Pillsbury "A" Mill across the river), the Utility Building originally housed several shops along with packing and loading equipment designed for compliance with new federal weight-labeling requirements. The sculpture was executed



Robert M. Frame III photographs for Minnesota Historical Society.

during the city's peak years of flour production, 1912-1916, coinciding with the high water mark of the Progressive Era in milling. The glazed terra-cotta figures, six to eight ft. tall, depict primitive mortar-and-pestle grain pounding (R) and a rotary quern (L). Standing (C) is the modern, self-styled "progressive miller," adjusting a belt-driven roller mill of the type which quickly replaced the millstone after its introduction c1880. The Utility Building is next to the site of the Washburn experimental "C" mill (1878-79), the first complete, automatic, all-roller, gradual reduction mill. It was destroyed in 1960. *R.M.F.*

NOTICE

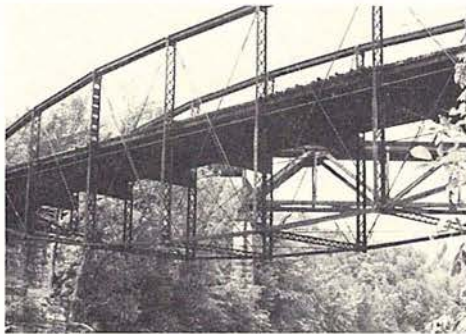
RENTALS of the Society's film WORKING PLACES now are being handled by the Natl. Trust. The price still is \$15—postpaid out; user pays return. Contact: Education Dept., Natl. Trust for Historic Preservation, 740 Jackson Pl. N.W., Washington, DC 20006. (202) 638-5200

MISC. SITES & STRUCTURES

BETHLEHEM WATERWORKS. The first pumped municipal water system in the American colonies—installed in Bethlehem, Pa. in 1754 and enlarged in 1762—has been restored to its appearance at the latter date. Designed by a local millwright, the enlarged system employed an undershot waterwheel to drive three force pumps. Water was pumped from a spring on the flood plain of Monocacy Creek, 320 ft. diagonally (94 vertical ft.) to a collecting tower in the hilltop town, then flowed by gravity to four community cisterns. Wood and lead pipes were used. Because of changes in the water course, the present system is powered by electricity but has been engineered to allow future use of water power.

The two-story limestone pump house with its restored mechanism was opened on 22 May 1976. Brook Hindle [SIA], Director of the Natl. Museum of History & Technology, delivered the dedication address.

The Hindle address, *"The Meaning of the Bethlehem Waterworks,"* and *The Bethlehem Waterworks, an analysis of the system's history and operation* by Karen Z. Huetter, Historic Bethlehem, Inc. historian, are available from HBI, 516 Main St. 18018.



Hadley Bridge, main span. Raymond W. Smith photograph.

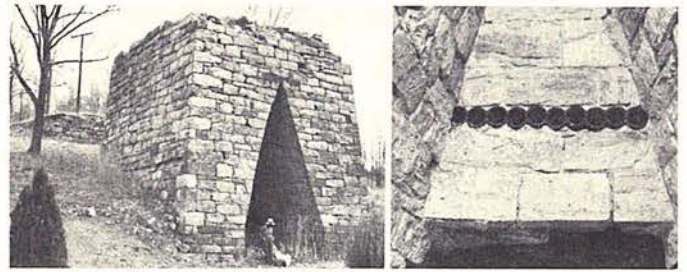
HADLEY (N.Y.) "PARABOLIC" BRIDGE (LAKE LUZERNE 936961), erected in 1895 to span the Sacandaga River, has been placed on the Natl. Register. This is the only known semi-deck lenticular iron truss bridge surviving in N.Y. State. Typical of the highway bridges manufactured by the Berlin Iron Bridge Co. between 1880 and 1900, the Hadley Bridge incorporates design elements patented by William O. Douglas of Binghamton in 1878 and 1885. The semi-deck version always was rare however, and this may be a unique survivor. Repaired in 1972, the two-span structure with an overall length of 181 ft. continues in use on its original site. R.W.S.

BLUFF FURNACE THREAT

ABATES. Consideration of alternative sites for bridge construction and the preparation of compatible on-site design have, apparently, saved the historic Bluff Furnace in Chattanooga, Tenn. from destruction [SIAN May 76:5]. A pamphlet outlining recent exploratory archeological work is available from Jeffrey L. Brown, Inst. of Archaeology, Univ. of Tenn. at Chattanooga, Chattanooga, TN 37401.



Chattanooga Iron Works, 1858. Harper's Magazine, Vol. 17.



Michael W. Robbins photographs.

AN EARNEST WHATSIT. No trick this time—not only we, but the finder hasn't any idea what it is. Again, it is Michael Robbins [SIA Bd.], who found this curious feature on an otherwise thoroughly typical stone blast furnace in Short Gap, W.Va. The ganged pipes set into the masonry above the casting arch are formed of a single iron casting. The back of the arch and the stack interior were inaccessible so nothing could be learned from that vantage. Some form of blast-air preheater? Something else to do with the introduction of the blast? (Seems to be in the wrong place for anything of the sort.) What have we here?

Meanwhile, Robbins has let us in on the masonry curiosity run last issue. Obscure to the point of total bafflement, no one came forward with even a stab. No wonder: it is the base for the top pulley and brake of a balanced-type inclined railway, built to lower sand down Hawk Mountain, Pa. from a pit at the top, in use from the 1890s only for a short time. The right-of-way is discernable. On the base are remains of the hold-down boltage and misc. fittings. What is described as tar probably is solidified grease.

MISC. NOTES

INDUSTRIAL & HUMAN PRESERVATION. Charles E. MacArthur [SIA], inventor and administrator of the already legendary Mt. Washington Alternative Vehicle Regatta, has embarked on a promising scheme that will at once preserve a substantial brick ex-woolen mill in Dover-Foxcroft, Maine, conserve fossil fuel by recommissioning the mill's 650-KW worth of hydroelectric capacity, and perhaps most important, deliver a group of retirees from enforced idleness by providing a practical means for them to conduct small businesses. The imaginative MacArthur plans to lease part of the mill to conventional small business enterprises, while one floor will be subdivided into 9-ft square blocks, renting at \$1. per day, aimed at the elderly interested in starting very small businesses. An attractive feature of the plan will be the cooperative pooling of all record keeping, sales, and other administrative functions, minimizing overhead and non-productive effort. C.E.M., 18 Vaughn St., Dover, ME 04426.

TOURS

THE HUDSON-MOHAWK INDUSTRIAL GATEWAY (5 First St., Troy, NY 12180. (518) 274-5267) has prepared a series of summer & fall tours of the region's bountiful IA, by bus and foot, featuring RRs, ironworks, &c. (Here is the ideal way to make a community aware of its industrial heritage, and is the sort of thing that any and all local chapters ought to be undertaking.) Flyer with schedules available.

CAST IRON. The Friends of Cast-Iron Architecture are at it again, with their series of sparkling Fall Tours that have become famed in their own time, aimed at "acquainting natives and visitors with Manhattan's historic iron architecture." 9 & 23 Oct.; 6 Nov. Schedule: 44 W. 9th St., NYC 10011. (212) 477-2124.

STEAM TRAINS. Chessie System, in celebration of the sesquicentennial of its oldest component, the Baltimore & Ohio—chartered 28 February 1827—is operating a grand schedule of one-day steam trips over its system, 40 in all. They started last spring and continue into October, those in the fall centering on Richmond and Baltimore. The power is the redoubtable 2101, ex-Reading system 4-8-4 built in 1946. Information: Steam Special, Dept C-J, Chessie System, 2 N. Charles St., Baltimore, MD 21201. (301) 237-3737.

MEETINGS & CONFERENCES

REGIONAL POTTERY MAKING TRADITIONS IN EASTERN N. AMERICA. Conference, 15-16 Oct. Rochester Museum & Science Center, co-sponsored by Royal Ontario Museum and Council for Northeast Historical Archaeology. While mainly decorative stuff, a certain number of papers will treat of the technology of ceramics manufacture. Announcement; information; Geo. Hamell, RMSC, 657 East Ave., Rochester, NY 14603.

11th ANNUAL CONFERENCE, SOC. FOR HISTORICAL ARCHAEOLOGY and 9th Advisory Council (formerly Intl. Conf.) on Underwater Archaeology. St. Anthony Hotel, San Antonio, Texas, 4-7 Jan. 1978. General Chairman: Kathleen Gilmore, North Texas State Univ., Inst. of Applied Sciences, N. T. Box 5057, Denton, TX 76203; SHA Program Chairman: Dan Scurlock, Texas Hist. Commn., Box 12276, Austin, TX 78711; ACUA Program Chairman: Barto Arnold, Texas Hist. Commn.

LINEAR IA. At the annual meeting of the Soc. for Calif. Archaeology in San Diego, Susan Lindstrom of the U.S. Natl. Forest Service-Tahoe District, gave an excellent overview of the evidence of the mining period to be found in the National Forests of the Sierras. She discussed the RR grades, ditches, trails, and other linear historic site phenomena which pose special management problems to the archeologist and project planner, as these networks can stretch for hundreds of miles within a relatively small project area. The prevalence of this resource, combined with its vulnerability to logging and construction projects, can subject these fragile historic sites to substantial impact. The old RR grades make excellent modern logging roads. The question is: how does one manage a seemingly endless cultural feature such as one of these networks? *P.J.F.S.*

THE BROOKLYN BRIDGE IN AMERICAN CULTURE, joint exhibitions in conjunction with a symposium (30 Sept-1 Oct) of that title. Scribner Library, Skidmore College, Saratoga Springs, N.Y. To 25 Oct., M-F 8:30 AM-11 PM; Sat. 10-5; Sun. 1-11. Also Folsom Library, Rensselaer Polytechnic Inst., Troy, N.Y. (Check hours). Original drawings and other documents, and some artifacts.

ARCHIVAL MATTERS

ARCHITECTURAL RESEARCH MATERIALS IN N.Y. CITY: *A Guide to Resources in All Five Boroughs* has been published by the Committee for the Preservation of Architectural Records (Natl. Arts Club, 15 Gramercy Park S., 10003). Loose-leaf form, gratis with addressed envelope to accommodate 8½ x 11, bearing \$1.45 in postage.

200 YEARS OF ARCHITECTURAL DRAWINGS. Exhibition of over 200: working drawings; sketches; presentation drawings, by 80 architects including Furness, Kahn, and others of the industrial scene. To visit Jacksonville, Fla., Cranbrook, Mich., and Chicago. Other bookings available: Susan D'Alton, American Fedn. of Arts, 41 E. 65th St., N.Y.C. 10021. (212) 988-7700.

INQUIRIES

CPR's WINDSOR STATION, Montreal. General information and, especially, location of Bruce Price's letters, particularly to W. Van Horne, pres. of the CPR 1885-90, sought. Phyllis Lambert, 418 Rue Bonsecours, Montreal H2Y 3C4.

MICHIGAN CENTRAL'S DETROIT UNION STATION, 1912. Information sought on designs by Warren & Wetmore and Reed & Stem (of Grand Central fame). Thos. Holleman, c/o Smith, Hinchman & Grylls, 455 W. Fort St., Detroit, MI 48226.

ORGANIZATIONS

THE BUILT ENVIRONMENT EDUCATION CENTER (BEEC), an adjunct of Educational Futures, Inc., has begun publication of the quarterly *BEEC Report*, to bridge the gaps between the worlds of the educator, and of the architect, designer, preservationist, and environmentalist. The *Report* will encourage the continued growth of the built environment in all of its various forms, and on all levels, by fostering communication between

professionals in all the concerned fields. Annual subscription: \$10. Box 13507, Philadelphia, PA 19101. (215) 387-5712.

CHANGES

NATIONAL HERITAGE has changed its style to John Milner Assoc., at the same address: 309 N. Matlack St., West Chester, Pa. 19380. (215) 436-9000.

JOHN L. COTTER has retired after 37 years as archeologist for the National Park Service. He will continue his association with the Univ. of Penna. as Adjunct Assoc. Prof. of American Civilization, and with the Univ. Museum as Assoc. Curator for N. American Historical Archeology.

JOHN BOWDITCH, recently appointed Assoc. Curator of Power & Shop Machinery at the Henry Ford Museum, has been succeeded in the directorship of the Lowell Museum (see Museums, above) by LEWIS T. KARABATSOS.

LEE JUSKALIAN has resigned from his post as information specialist with the Colo. Division of Planning, having accepted the position of architectural historian in the Office of the Mayor of Providence, R.I., where he will coordinate, among others, the Historic Building Improvement Program.

RAYMOND H. MERRITT, director of the Cultural & Technological Studies Program at Univ. of Wisc., Milwaukee, has been nominated to the vice presidency of the Public Works Historical Soc.

POSITION AVAIL.: Director for newly established city museum. Responsible for general operation and programming. Opportunity for creative person with knowledge of funding, PR, and educational programs. Experience necess. Ca\$15,000. Resume to Trenton City Museum Commn., Box 1034, Trenton, NJ 08606. (609) 393-9800.

COMPANY TOWN FILM. The Merrimack Valley Textile Museum with a grant from the Natl. Endowment for the Humanities has produced *Hopedale: Reflections on the Past*, a 28-minute film detailing the town's growth from 1890. The Mass. village's principal industry, the Draper Co., became the largest textile machinery manufacturer in the U.S. on the basis of its introduction in 1894 of the famed "Model A" loom, the first commercially successful automatic loom, in which the bobbin carrying the filler yarn automatically was changed when exhausted, with the shuttle in full flight and the loom missing not a pick. The impact of this on company and town is registered in the film, as is the radical change in Hopedale's paternalistic style following Draper's absorption by a conglomerate in 1967. The film was coordinated by MVTM Director Thomas W. Leavitt. (MVTM: N. Andover, MA 01845. (617) 686-0191. NEH: Wash., DC 20506. (202) 382-7465.)

SIA AFFAIRS

THE ROEBLING CHAPTER is undertaking an industrial inventory project, the ultimate objective being the creation of a series of field guides. Three inventories are underway: The Passaic River Valley; The Hudson River Valley; and the New York Waterfront. The projects are being assisted by a number of state, county and local agencies, as well as numerous individual volunteers. If you are interested in participating, or if you just have a favorite site in the areas about which you can contribute information, please contact any of the following: *Project Coordinator:* David V. Abramson [Chap. Pres.], Dept. of Planning & Devel., 10 Capitol St., Trenton, N.J. 08618. (609) 989-3590. *Hudson Valley:* Richard P. O'Connor, Dutchess Community College, Poughkeepsie, N.Y. 12601. (914) 883-7472. *Passaic Valley:* Edw. & Mary Jane Rutsch, 17 Van Houten St., Paterson, N.J. 07505. (H) (201) 345-6215, (O) 278-2800. *N.Y. Waterfront:* Theo Prudon, Ehrenkranz & Assoc., 19 W. 44th St., N.Y.C. (212) 730-1950; Tom Flagg, 306 W. 180th St., N.Y.C. 10025. (H) (212) 865-8765, (O) 477-7189.

As a preliminary venture in this work, on 4 June a group of 15

members toured sites associated with the cement industry around Kingston, N.Y.

Coming Activities. Lecture by Dr. Henri Busignies, Chief Scientist Emeritus of ITT Laboratories: "Progress in Telecommunications in the last 50 Years — and Expected Future Progress." 19 Nov. at the ITT plant, Nutley, NJ., 2:00 p.m. Details from M. J. Rutsch, above.

ANNUAL CONFERENCES. 1978. Breaking new ground, next year's SIA Conference will be in the North South: CINCINNATI & LOUISVILLE, 23-26 March. The event will commence in The Queen City of the Ohio Valley, based at the magnificent New Netherlands Hotel, and in the course of the weekend move inexorably downriver to Loo'v'l. A stunning program of papers and trips is planned. (If you are asking yourself, "where's the IA in those places?", we can reply only, "You'll be surprised and amazed!")

Conference Chairman: Courtney Fisher, Blair House, Warren, VT 05674.

Local Arrangements: (L) Wendy Nicholas, Preservation Alliance, Louisville, KY; (C) Phillip D. Spiess, National Trust for Historic Preservation, 740 Jackson Pl., NW, Wash., DC 20006.

Program Chairwoman: Merrill Wilson, 3425 Lowell Blvd., Denver, CO 80211.

1979. With our feet thus wetted, the following year will see the Society in the Middle South, in Augusta and other Georgia points, and in keeping with our tradition of long-range planning, the Annual Conference in . . .

1980 will be in the international twin cities of Detroit & Windsor.

POSITION AVAILABLE

With the continuing growth of the Society's publications and other programs it has been found that costs often exceed the income generated by membership dues and the existing gifts and grants structure. A special goal is the publication of *IA* on a semi-annual basis, the moment the budget permits. The Board believes that the financial situation could be considerably brightened under the occasional ministration of a capable, (ideally) experienced, combined fund raiser-advertising (in *IA* & the *SIAN*) mgr. A volunteer for this crucial post is sought. Please contact Dianne Newell, Pres., SIA, 97 Euclid Ave., London, Ontario N6C 1C3, Canada.

FIELD TRIPS. There has been no formal Fall Trip this year, although colossal events for Spring and Fall 1978 already are on the boards. The locations cannot yet be divulged, but we have been given permission to note that the former will have much to do with a particular hard solid fuel that currently is having something of a renaissance, and the latter with a distinguished region of the East North South.

Puerto Rico. The proposed trip scheduled for 23-27 Sept. had with real regret to be canceled, because only 15 of the required 40 seats were booked. We may have another go at it later.

East Broad Top RR. A summer trip to this remarkable 19thC railroad survival in S. Central Penna. was made by the Montgomery C. Meigs Original Chapter, the full details of which will be revealed in the Sept. issue. In the meantime, the trip organizer has with extreme generosity expressed willingness to guide other chapters along the line, which includes the RR's shops which are in an unbelievable state of preservation, and other IA of far more than passing interest. Wayne Laepple, 347 Fair Street, Bloomsburg, PA 17815.

SIAN INDEX

Not to beat a dead horse, but there still is desperate need for a volunteer to index the *Newsletter*, from its inception in 1972 to date, for immediate editorial purposes and possible publication in due course. An admittedly fussy job, but a vital one. Contact the editor if interested.

IA—PATIENCE REWARDED

We trust that by now you will have observed that the journal does live, Vols. 2 and 3 (i.e., issues 2 and 3) have been dispatched, almost simultaneously, 2 from Morgantown, 3 from Washington. Have you received both? If not, advise, to Room 5020.

MEMBERSHIP BROCHURE for BROADCAST

A combined brochure-poster has just been prepared, principally for large-scale distribution at the conferences and meetings of appropriate organizations. We hope you will help to swell our rolls by requesting and setting these about at such affairs. Advise the editorial office of quantities required.

THE 1977 ANNUAL CONFERENCE

WILMINGTON

As has every one before been, this was the biggest, the best, and the most heavily trafficked. Heaven knows, it was the most exquisitely organized, the instruction sheets to trip guides and like matter swirling about like a blizzard. The Hagley Museum was host and planner, and it is tempting to draw a hypothesis from the experience about the optimum size of the organization that ought to undertake such exercises. Hagley appeared to be large enough to muster a cadre of adequate size, but not so large that details got lost amongst the supernumeraries. In other words, just right.

For the first time in the Society's recorded history the week-day "process-tour" field trip took place on the Friday before rather than the Monday after, which seemed to go down well. There wasn't a dull spot in the entire group of plants visited (although the tannery may have turned the odd stomach, it wasn't dull).

Friday night was the scene of a wine & cheese reception at Hagley featuring lanternlight touring of the DuPont powder mills, the recently recommissioned New Century Hydroelectric Plant that now is furnishing all of Hagley's power, and a newly installed steam engine of the mid-19thC. The stillness of the scene broken only by the natural sounds of the various machines, and the appropriately dim lighting together produced an atmosphere wonderfully, almost eerily, 19th-century.

Saturday's scholarly sessions, assembled by HAER's T. Allan

Comp and Larry D. Lankton, attained the customary high level of variety and interest, here too with a new twist. This year, after much soul searching, it was decided finally to resort to the controversial practice of concurrent sessions. Running simultaneously with the afternoon regular session was a special workshop on the Federal Bridge Replacement Program—that scheme that threatens so many early iron truss bridges—organized and chaired by Eric N. DeLony of HAER. The rationale for the arrangement was an assumption that the workshop would attract a group with a particular highly specialized interest. The plan appeared to work, although there were some who did find it difficult to choose, and as a result shuttled endlessly back and forth between the two events in search of the truth.

The people principally responsible for the Conference's organization were Hagley staffers Frank J. McKelvey, Jr., and Robert A. Howard, with full assistance from Hagley Fellow Bruce E. Seely. To them and the entire Hagley administration and staff, all of whom were involved more or less for what must have seemed an endless period of time, the SIA offers deepest appreciation.

BRIDGE PRESERVATION WORKSHOP

The special Bridge Preservation Workshop was organized because of the growing alarm of industrial archeologists over the

loss of historically significant bridges through the Federal Bridge Replacement Program. (See SIAN Nov. 75:4). The session's aims were: 1) to illustrate what certain state transportation departments have accomplished towards fostering an internal awareness and appreciation of such structures; 2) to determine whether effective measures to ward off structural deterioration and to repair deficiencies exist; 3) to learn of any empathy on FHWA's part toward preserving historically significant bridges; and 4) to discover whether individuals and preservation groups have any redress for the destruction of such bridges through the courts. These aims were advanced by a variety of government and private experts in various aspects of the field.

One of the most important points brought out during the session was the fact that several new bills have been introduced in Congress to amend the current program, emphasizing *repairs* rather than across-the-board replacement. Under existing law, bridge

replacement funds cannot be used for strengthening a structure. It was suggested that the new legislation include specific measures for preserving historically significant bridges.

The legislation known as "The Bridge Safety Act of 1977" demonstrates that repairs are a viable alternative to replacement. It was pointed out, however, that repairs often are not sympathetic to the aesthetics or integrity of a historic bridge, and that existing national bridge codes and standards, derived from the construction of the interstate system, are not necessarily applicable to all bridges. Old bridges often have the best safety records in a community.

We would hope that those attending did appreciate the highway engineer's concern for avoiding the tragedy of bridge failures. On the other hand, we hope also that the word gets to Congress and bridge engineers that there is a strong interest on the public's part in saving historically significant and environmentally necessary bridges. *E.N.D.*



One of the five roller mills (1933) at the Dayette Mills, Newark.

THE FIELD TRIPS

The Conference had as one of its themes a concern for processes as well as structures. This was most strongly high-lighted by the Friday tours. Five industries in the Wilmington area graciously opened their doors to the conferees, permitting an inside look at their production processes. A group of Univ. of Delaware graduate students, many of them Hagley fellows, had taken the time to learn the background of the firms and the steps of production so that they were able to serve as fully informed guides.

Visited were the **Curtis Paper Co.** which manufactures a high-quality rag-content paper using two late-19thC Fourdrinier papermaking machines; the **Dayett Flour Mill** where a gradual-reduction steel-roller system was seen in use; the **Allied Leather Co.** which uses a chrome tan process to turn out some 4,000 sides daily for shoes, handbags, and coats; the **DuPont Experimental Weaving Laboratory**, where nearly every conceivable type of textile machinery can be found, including a Japanese high-speed water-jet loom and an equally fast rapier loom that were seen in operation. The fifth site, and apparently many people's favorite, was the **Delaware Brick Co.** A small brickworks with its own clay pit. DBC produces daily some 15,000 bricks in its 150-ft. tunnel kiln. The SIA expresses its thanks to all of these companies, without whose cooperation the tours would not have been possible.

The **Sunday tours** lapsed into the traditional annual conference format, based on a frenetic pace. Northern Delaware boasts a wide variety of significant industrial and engineering sites, and the tour took in as many as these as possible. Among the high points were



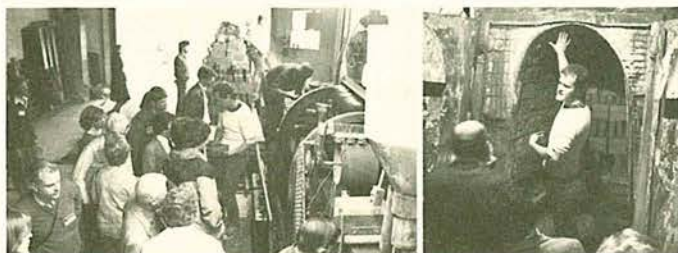
Organic 1A: chrome tanning at Allied Leather Co., Wilmington.

three of the best preserved steam pumping engines in the country: the triple-expansion Holly of 1908 at the Wilmington Water Works; and the pair of Merrick engines installed at the Chesapeake City (Md.) pumping station of the Chesapeake & Delaware Canal in 1851 and 1855 [SIAN Jan. 76:1]. Other sites included a 120-ft-high wrought-iron range light of 1876 marking the channel of the Delaware River, a large number of bridges in and around Wilmington, various local mills, and the most impressive site seen, the Amtrak shops, late of the Pennsylvania RR, built c1905. The tour of this facility included not only a walk-through of the main erecting and machine shop, blacksmith shop, and car repair shops, but also a close-up view of GG-1 locomotive 4935 being restored to its original Raymond Loewy paint scheme [SIAN May 77:8]. *B.E.S.*

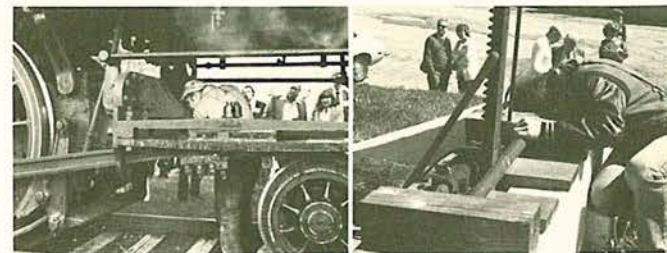
THE ANNUAL MEETING—30 April 1977

An Abstracted Report

After lunch Pres. Candee opened the Meeting and presented his report of the year's activities. He felt that the single most important accomplishment of the Board this year was the establishment of a Finance Committee and the preparation and acceptance of the Society's first Budget. He presented a brief version of the Treasurer's Report (below), highlighting the 1977 Budget. He reported that the conversion of the slide film "Working Places" into a 16mm movie had been completed, and that the 26 copies first prepared were nearly sold out. He welcomed the formation of the Southern New England Chapter, and reported that all local-chapter presidents had been invited to attend Board meetings. He



The brick machine and tunnel kiln at Delaware Brick Co.



In the valve gears and headgates shall ye find the truth.



Thank God it wasn't one number lower or we'd have a famous wreck! The conferees were hauled to dinner Saturday night by Wilmington & Western RR No. 98, a handsome late example of the American Standard type built 1909 by American Locomotive Works at Schenectady.

reported that the Board was forming a standing committee on Local Chapters to deal with some of the questions and problems posed. Candee felt that the greatest problem facing the Society at the moment was its failure to get out issues of the journal *IA* originally hoped for. Faced with the problems of publication by West Virginia Univ., the Society had decided to contract for publication itself.

Election of officers. The nominating committee's slate was read, and nominations were then opened to the floor. No new ones made, the given slate was seconded and approved.

Candee then presented the two Constitutional Amendments: one requesting a change in the term of the treasurer to coincide with the fiscal year, rather than with the annual meetings; the other making the presidents of local chapters *ex-officio*, no-voting members of the Board. Both were approved.

Reports were received from the three local chapters: Roebeling; Meigs; Southern New England, describing their activities during the year.

New Business. A resolution was presented from the floor calling for a change in the nominating procedure to add the nomination of more than one candidate for each office. The Resolution was approved by a vote, directing the Board to establish a procedure that would provide a slate of officers with a choice for each position. The meeting adjourned at 1:20 PM. *Russell I. Fries, Secretary.*

A MESSAGE FROM THE NEW PRESIDENT

With great pleasure the Society's Board of Directors announces the appointment of Michael W. Robbins as Editor of the *SIA* journal *IA*. He will be responsible for the 4th and succeeding issues. Robbins is a former editor of *Museum News*, organ of the American Assn. of Museums, and has freelanced over the past five years, contributing to the *Washington Post*, *Natl. Geographic*, and other publications of consequence. His interest in *IA* is of long standing; his doctoral dissertation dealt with Maryland's Colonial iron industry. He is Director of Research for Jos. A. Wetzel Assoc., exhibits consultants.

Several significant new projects are being developed for the next year, including preparation of a companion volume to *Working Places*, to deal with the *continuing*, as opposed to the *adaptive* use of industrial buildings. A guide to the identification and recording of industrial sites also is in work.

The Society's Marthas Vineyard symposium on *IA* & the Human Sciences will be taking place in October, our first undertaking of the kind. The proceedings are to be published.

In view of the considerable activity and interest in the establishment of local chapters, the Board felt that a special committee to coordinate these matters should be established. It has been, chaired by Mary Jane Rutsch, first pres. of the Roebeling Chapter. Please contact her if you are interested in establishing a local chapter: 17 Van Houten St., Paterson, N.J. 07505.

The coming year promises to be one of fruitful activity, in which the participation of all members of the Society is invited. *Dianne Newell, President.*

TREASURER'S REPORT (As of 31st December 1976)

ASSETS		
Cash		\$12,488
LIABILITIES & FUND BALANCES		
Accounts payable	0	
Fund balances	8,381	
Less: Special project: slide-film conversion	-8,000	381
General: Balance 1 January 1976	8,972	
Add: Net increase, period ended 31 December 1976	+3,135	12,107
Total liabilities & fund balances		\$12,488
INCOME		
Membership dues	12,694	
Publications, conference, royalties	1,480	
Interest	500	\$14,674
OPERATING EXPENSES		
Newsletter publication	3,244	
Journal publication	3,619	
Postage	2,559	
Advertising	257	
Audit fees	475	
Directors meeting expenses	237	
Office expenses	577	
Other expenses	571	-11,539
Increase in general fund		\$ 3,135
		<i>Courtney Fisher, Treasurer</i>

SIA OFFICERS AND DIRECTORS—1977-78

President—Dianne Newell, London, Ontario. Historical Researcher; PhD candidate, Univ. of Western Ontario. (to 1978)

Vice President—George M. Notter, Boston, Principal, Anderson Notter Assoc. (architects). (to 1978)

Secretary—Russell I. Fries, Old Town, Maine. Assoc. Prof. of History, Univ. of Maine. (to 1978)

Treasurer—Courtney Fisher, Warren, Vt. Historic Preservation Consultant. (to 1978)

Past President—Richard M. Candee, Portsmouth, N.H. Historic Preservation Consultant. (to 1978)

Standing Directors

James C. Massey, Alexandria, Va. Director of Properties, Natl. Trust for Historic Pres. (to 1978)

Michael W. Robbins, N.Y.C. Director of Research, Joseph A. Wetzel Assoc. (museum consultants). (to 1979)

Peter H. Stott, Troy, N.Y. Historic Pres. Programs Asst., N.Y. State Divn. for Historic Preservation. (to 1979)

New Directors

Robert M. Frame III, St. Paul, Research Historian, Minn. Historical Society. (to 1978)

Mary Jane Rutsch, Paterson, N.J. Principal, Historic Conservation & Interpretation, Inc. (archeological consultants). (to 1980)

David M. Sherman, Atlanta. Director, Office of Planning & Research, Ga. Dept. of Natural Resources. (to 1980)

Editors

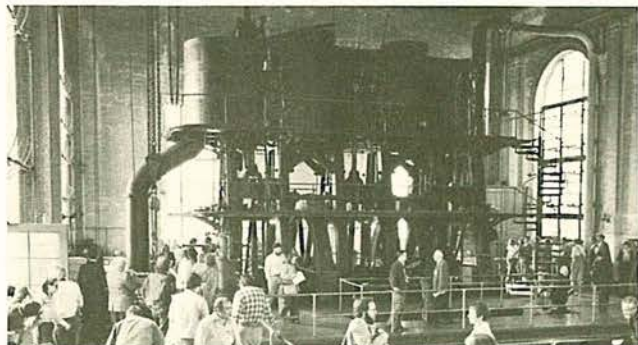
(serving indefinite terms, at the Board's discretion)

IA—Michael W. Robbins.

Newsletter—Robert M. Vogel, Washington, Curator, Divn. of Mechanical & Civil Engineering, Natl. Museum of History & Technology.

MISC. CONFERENCE NOTES—Available from the SIAN Editorial Office are: Abstracts of the Conference papers (1 sheet), for stamped envelope; and the extraordinarily fine guide prepared for the Friday and Sunday tours by F. McKelvey & B. Seely: *IA of Wilmington, Del. & Vicinity*. This 24-pp. pamphlet describes no less than 75 sites & structures, 54 of them illustrated. Location map. \$1., stamps acceptable.

The Saturday sessions were taped, with the exception of the first of the afternoon. Has anyone a tape of that to loan for copying? Ed.



A classic of the waterworks industry, a Holly tripple-expansion steam pumping engine of 1908, 12 million gallons/day capacity, Corliss valve gear, 20-24 rpm, 550 hp. Wilmington Water System, Brandywine Pumping Station. A companion was scrapped when the station was decommissioned in 1969.

PUBLICATIONS OF INTEREST

David McCullough [SIA]. **The Path Between the Seas**. NY: Simon & Schuster. 698 pp. \$14.95. With a 19-foot shelf of writings on one of the greatest engineering projects in the world's history, everything should have been said heretofore. McCullough, as he did in the case of Brooklyn Bridge (*The Great Bridge*, SIAN Nov. 72), has shown how far from the truth that turns out to be. The real story—and one fully as dramatic as the physical accomplishment itself—is the one of the people behind the conceptions, the French's ill-starred 19thC efforts, and the ultimately successful American project. It is McCullough's uncanny ability to interpret and interrelate the secondary material and a mass of previously untitled primary documentation, that has enabled him to produce here not only a historical document itself of incalculable worth but an account of an engineering and historical event that is nothing less than great literature. The final word is in.

Albro Martin, **James J. Hill & the Opening of the Northwest**. NY: Oxford Univ. Press, 1976. \$19.50. (Highly favorable review: *Fortune*, Jan., pp. 63 & 66.)

Clifton Paisley, **Madison County's Sea Island Cotton Industry, 1870-1916**. In *Florida Historical Quarterly*, Jan., pp. 285-305.

Frances Pratt, **Canal Architecture in Britain**. London: British Waterways Board (Melbury House, Melbury Terr., NW 16JX). 40 pp. \$4. History of canal locks, bridges, aqueducts, and other structures over the last 200 years, and their preservation today; 60 color photos & engravings and drawings.

Terry S. Reynolds, **Using Simulated Debates to Teach History of Engineering Advances**. In *Engineering Education*, Nov. 1976., pp. 184-87. A possibly useful teaching tool. The writer has used, i.e.: the Canal vs RR: AC vs DC; and English vs Metric controversies. Discusses techniques. Bibliogs.

MSS for IA Solicited

With the Society's journal *IA* back on a regular publishing schedule, we would like to remind all that manuscripts are solicited for both articles and shorter features. Illustrations are, of course, welcome . . . expected. Michael W. Robbins, *IA*. (c/o Jos. A. Wetzel Assoc., Cummings Pt. Rd., Stamford, CT 06902.)

J. B. Richardson, **Metal Mining**. London: Allen Lane (Longmans IA Series), 1974. 207 pp., illus. \$10. Location, history, and technology, in the U.K.

E. Graeme & Joan Robertson, **Cast Iron Decoration**. NY: Whitney Library of Design. 336 pp. 521 b&w illus. \$27.50. Worldwide. (Avail.: Friends of Cast-Iron Architecture, 44 W. 9th St. Rm. 20, NYC 10011.)

Sidney Robin (Ed.), **The History of Civil Engineering & Construction in the Delaware Valley**. Phila. Section, American Soc. of Civil Engineers, 1976. 164 pp. \$10. (Avail.: Ted Davis, Rothbaum & Davis, 215 S. Broad St., Phila., PA 19107.)

K.H. Rogers, **The Newcomen Engine in the West of England**. Moonraker Press, 26 S. Margaret's St., Bradford-on-Avon, Wilts, England, 1976. 63 pp. \$5.35 surface/\$7.25 air.

L.T.C. Rolt & J.S. Allen, **The Steam Engine of Thomas Newcomen**. Moorland Publ. Co., The Market Pl., Hartington, Buxton, Derbys SK17 0AL, Engl. 160 pp., illus. \$14.

Eric Schenker, H. Mayer, H. Brockl, **The Great Lakes Transportation System**. Madison: Univ. of Wisconsin Sea Grant College Program, 1976. 292 pp.

Cyril Stanley Smith (Ed.), **Sources for the History of the Science of Steel, 1532-1786**. Cambridge: MIT Press, 1968. 357 pp. \$13.20.

Carl Solberg, **Oil Power**. N.Y.: Mason/Charter, 1976. 299 pp. \$12.50. History of petroleum in the U.S.; how it became the most important energy source; how it is about to be dethroned.#

Miriam Trementozi [SIA], **Building Technology: Turned Granite**. In *Possibilities*, 4th Quart., 1976, p. 2. The basic process of lathe-turning granite as carried on at one of the three U.S. works left, at Barre, Vt.

Spencer C. Tucker, **Cannon Founders of the American Revolution**. In *National Defense*, July-August 1975, pp. 33-37.

Donald L. Tuttle, **Shades of Adirondack Iron**. In *The Conservationist* (N.Y.S. Dept. of Environmental Conservation), March-April, pp. 33-35. The abandoned Salisbury mine.

Robert I. Vexler, **Baltimore: A Chronological & Documentary History, 1632-1970**. *American Cities Chronological Series*. Dobbs Ferry, N.Y.: Oceana Press, 1975. 156 pp.

Martha Vicinus, **The Industrial Muse: A Study of 19thC British Working-Class Literature**. N.Y.: Barnes & Noble, 1975. 357 pp.

G. Walker, **Stirling-Cycle Machines**. N.Y.: Oxford Univ. Press, 1973. \$15.50. A definitive study on the hot-air engine and what it's grown into today.

Peter C. Wendt, Jr., **Boonton Was an Iron Town**. Boonton (N.J.) Historical Soc. Avail.: Boonton Chamber of Commerce, 618 Main St., Boonton, N.J. 07005. 173 pp. \$10.50. The iron industry to the time of its closure in 1906. Much of this ground was covered on the SIA Fall Tour, 1976.

Elizabeth A. Willmot, **Meet Me at the Station**. Toronto: Gage publ. 1976. \$15. Account of 53 Ontario stations; some gone, many surviving in service and adapted. Photos by the author.

Frank Woodall, **Steam Engines & Waterwheels**. Mooreland Publ. Co. (see Rolt, above). \$9. Heavily pictorial study of pumping engines and other English mining machinery. Early photos + the author's, mostly of the 1930s-40s, when much still survived.

Igor L. Znachko-Iavorskii (tr. by Henry M. Leicester), **New Methods for the Study & Contemporary Aspects of the History of Cementing Materials**. In *Technology & Culture*, Jan., pp. 25-42. New Look at mortars, cements, &c.

New & Improved: **Inventors & Inventions that have Changed the Modern World**. British Library Bd. & British Museum Publs., Ltd., 1976. 168 pp., illus. \$9.

Underground Slate Quarry. In *Compressed Air*, March 1972, pp. 10-13. Oakeley Quarries, Blaenau Festiniog, worked since c1800, one of the few in Wales still operating.

Edward C. Carter II, **Benjamin Henry Latrobe & Public Works: Professionalism, Private Interest, & Public Policy in the Age of Jefferson**. Wash.: Public Works Historical Soc. (now 1313 E. 60th St., Chicago 60637), 1976. 30 pp., illus. Gratis. Brief description of some of his canals and the Philadelphia waterworks.

Robert G. Dunbar. **The Arizona Groundwater Controversy at Mid-Century**. In *Arizona and the West* (Spring) pp. 5-24.

William Coles Finch. **Watermills & Windmills: a Historical Survey of Their Rise, Decline and Fall as Portrayed by Those of Kent**. (1976 Reprint of 1933 ed.) Avail. A. J. Cassell Ltd., 31 Broadway, Sheerness, Kent, England. \$18.

Laurie Gordon & John Salkin. "Eat Me and Grow Young": **Orange Crate Art in the Golden State**. In *Calif. Hist. Q.* (Spring), pp. 52-71. Early 20thC gaudy litho labels often feature IA, especially transportation.

Larry D. Lankton [SIA]. **The "Practicable" Engineer: John B. Jervis & the Old Croton Aqueduct**. Chicago: Public Works Historical Society (1313 E. 60th St., 60637). 30 pp., illus. Gratis. Splendid summary of this important early American public project.

Bruce R. Leisy. **A History of the Leisy Brewing Companies**. Avail.: The author, 928 Longford, Wichita, KA 67206. \$6. A Cleveland brewery.

Robert L. Schuyler [SIA]. **Archeology of the N.Y. Metropolis**. In *The Bulletin of the N.Y. State Archeological Assn.*, "Special Issue on Historical Archeology," No. 69, March 1977, pp. 1-19.

———. **Images of America: the Contribution of Historical Archaeology to National Identity**. In *Southwestern Lore*, Dec, 1976, pp. 27-39. How historical archeology and IA are maturing and becoming independent of historic restoration domination—recounts anecdotes of nasty political interference in archeological projects.

Volta Torrey [SIA]. **Speaking of Windmills**. In *Prairie Schooner*, Spring, pp. 89-93.

GUIDES & INVENTORIES

Robert B. Belfield (comp.). **Relics of the Electrical Age: A Directory of Public & Private Repositories in the U.S. & Canada Containing Artifacts Associated with the History of Electric (sic) Technology & Science**. Wash.: Natl Museum of History & Technology. 48 pp. (Gratis from Divn. of Electricity & Nuclear Energy, 20560.) Good resource: all museums and many private collections, arranged geographically, with subject and name indexes.

T. Allan Comp & Donald Jackson [both SIA]. **Bridge Truss Types: A Guide to Dating & Identifying**. Nashville: American Assn. for State & Local History (1315 8th Ave. S, 37203). Technical leaflet 95. 12 pp. \$.50. A useful field guide to both the nomenclature of timber & metal trusses and the wide variety of arrangements and styles. Photos, description, and diagrams. Companion to the Bridge Truss Poster.

Elaine Freed [SIA] & David Barber. **Historic Sites & Structures, El Paso County, Colorado**. Colorado Springs: El Paso Co. Land Use Dept. 56 pp. illus. Sites around Colorado Springs.

Stephen P. Hall & David A. Walker. **Duluth-Superior Harbor Cultural Resources Study**. Prepared by Minn. Historical Soc. for the Army Corps of Engineers, August 1976. 151 pp., 27 figs., map. Extensive survey of shipping facilities for lumber, grain, ore, coal, &c. (Avail.: Robert F. Post, St. Paul Dist., U.S.A.C. of E., Post Office Bldg., St. Paul, MN 55101.)

Donald E. Sackheim [SIA] (Comp.), **Historic American Engineering Record Catalog, 1976**. Wash.: HAER, National Park Service, 1976. (Avail.: Supt. of Documents, USGPO, Washington 20402. \$3.50.) The long awaited catalog of HAER's works, from the beginning—1 January 1969—to 31 December 1975, covering both the material already housed in the HAER archive at Library of Congress and that still in work at HAER HQ. Sackheim has performed an extremely valuable—and complex—task in ordering the enormous amount of data produced in these seven busy years, and arranging it in so useful a fashion. Classification is geographic

(state, town), but structures can be located by type, name, or owner via the index. A brief description is given of each major project and all available material is listed following: measured drawings, HAER photos, data sheets, and early documentation. the catalog is well illustrated with examples of all (except data sheets). A model of its type. HAER now must give consideration to the means for systematic updating, for a vital reason for its existence is the widest dissemination of knowledge of its holdings, as current as possible. Since such catalogs are ponderous in gestation, annual supplements, in uniform format with the master, might be the answer, with, say, quintennial all-inclusive offerings.

The National Register of Historic Places in New York State. The First Five Years 1969 - 1973. Albany: NYS OPR. Divn. for Historic Preservation, June 1976. Avail.: NYS DHP, Empire State Plaza, 12238. 169 pp. (paper), illus., Index, appendices. Includes photographs and description for each site and historic district placed in the NR between 1969 and 1973. Natl. Historic Landmarks and Natl. Register properties included in separate list only.

T. Allan Comp & Kathleen S. Hoeft [both SIA] (eds.), **Long Island Wind & Tide Mills. An Interim Report of a study conducted by the Historic American Engineering Record and the Society for the Preservation of Long Island Antiquities**. Wash.: Hist. American Engineering Record, Natl. Park Service. 1976. 19 pp., illus. Gratis: HAER, 20240.

SPECIAL PUBLICATIONS

W. P. Cole [SIA]. **Using the UTM Grid System to Record Historic Sites** (Advance Edition). Wash.: (20240): Office of Archeology & Historic Preservation, Natl. Park Service. March. 44 pp., 20 figs. The definitive guide.

Joseph Crea & Elwood Bell. **Structures of the Early West**. Silverton, Colo.: Sundance Publs. Ltd. \$4.95. Scale plans and photos of RR bldgs.

Ann Falkner. **Without our Past: A Handbook for the Preservation of Canada's Architectural Heritage**. Toronto: Univ. of Toronto Press, 1976. \$15./5.

Delaware & Raritan Canal Historic Map. 1976, based on 1866 geological map, 20"x30". \$3.00. (Avail.: Bureau of Geology & Topography, Dept. of Environmental Protection, Map & Publ. Sales, Box 2809, Trenton, NJ 08625.)

The Records of the Committee on Science & the Arts of the Franklin Institute 1824-1900. 28 rolls of microfilm with printed guide, including Technology in Industrial America (A. Michael McMahon and Stephanie A. Morris, with Foreword by Bruce Sinclair [SIA]. 400 pp., avail. separately \$40.) \$980. Avail.: Scholarly Resources Inc., 1508 Penna. Ave., Wilmington, DE 19806.

Preservation Training for the Building Trades. A *Preservation News* Supplement. June Natl. Trust for Hist. Pres., 748 Jackson Pl. N.W., Wash. DC 20006. 4 pp. \$.15. Articles on trade crafts training and apprentice programs.

Information (A series of fact sheets on rehabilitation, prepared by the Urban Land Inst.) Available are: **Long Wharf** (19thC Boston); **Stanford Court** (c1900 San Francisco); **Trolley Square** (barns and shops converted to shopping center). Single copies free from Mid-Atlantic Field Office, National Trust, as above.

American Preservation. A new magazine that proposes to pull together the many activities in the preservation movement, providing a forum for ideas and debate, cover new developments, describe projects, funding, sources. Presumably industrial preservation will receive a reasonable share of attention. Bimonthly, starting Sept. \$9. per year charter. Box 2451, Little Rock, AR 72203.

The Mill: Another View.

In *SIAN* Jan, 77:8 we ran a somewhat effusive note on the New York Graphic Society's **The Mill** by Fox, Brooks, & Tyrwitt. A review by Martin Weaver in the *APT Bulletin*, No. 1, 1977, probably ought to be read by potential purchasers, for Weaver views the effort with considerably less enthusiasm. He follows with a review of Carol Primo's **Mills of Canada** that nicely correlates the two works.