

# SOCIETY FOR INDUSTRIAL ARCHEOLOGY

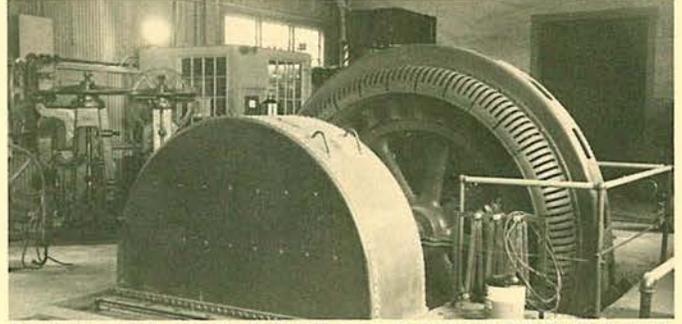
## NEWSLETTER

Volume Seven Number 4

July 1978



The ruins of the Alaska-Juneau mill hang above the southeastern end of Juneau. (R) Lower Salmon Creek powerhouse: 2500-HP impulse turbine by the Pelton Water Wheel Co. (San



Francisco) and G.E. alternator. To the left-rear are the Pelton-wheel needle-nozzle regulators, themselves powered by small impulse turbines. All photographs by Robert L. Johnson.

### I.A. IN ALASKA

#### HYDROELECTRIC PLANTS OF THE A-J MINE, JUNEAU

*The following is the first installment of two noting some of the IA observed by Robert L. Johnson, Rossville, Ga. during a consulting trip to the northernmost United State in the 1977 summer.*

In 1880 gold was discovered in Silver Bow Basin, behind the city of Juneau. The strike was the start of a gold-producing era that saw the beginning of two of the world's greatest gold mines: the A-J (Alaska-Juneau), in the Basin; and the Treadwell group of mines on Douglas Island, W. of Juneau. Over \$146 million in gold was produced by these mines up to their closing—the Treadwell in 1917 due to cave-ins; the A-J in 1944. The ruins of the A-J mill hang above Juneau and south of the town of Douglas are literally miles of interesting ruins from the Treadwell operation including the "glory hole," an early open-pit mine. All are well worth visiting. Considerable water power was developed for the mines and some of the installations remain, owned by Alaska Electric Light & Power Co., as marvelous, intact (two in operation) early-20thC hydroelectric plants. These developments consist of:

1) **The Gold Creek Plant**, c1912, located in Juneau, still runs two impulse water wheels (one of 400 H.P., with double runners; the other of 600-H.P., triple runners) driving the original 2,400-volt Westinghouse generators. The wheels have no governors, being regulated by the Salmon Creek plant (below). They are fed by a 3,000-ft., 4' x 4' wood flume taking water from Gold Creek in Silver Bow Basin, delivering it to a wooden pressure box and thence to a 2100-ft., 36" diam. steel penstock under 210-ft. head. In recent years the plant's capacity has been increased by installation of a Pelton vertical-shaft impulse wheel and generator. The powerhouse is intact with additions on the S. side.

2) **The Sheep Creek Plant**, at the mouth of that creek 4 miles SE of Juneau, built in 1906; a timber-frame structure covered with corrugated iron, containing three units. Two are 1,900-H.P., two-nozzle Pelton wheels direct connected to 2,300-volt, 60-cycle, 3-phase, 1,000kW G.E. generators. Separate exciters driven by 35-H.P. Pelton wheels supplied these. The third unit is a 225kW Westinghouse generator driven by twin Pelton-Doble wheels. The plant was closed in 1944 but

stands in splendid condition giving the appearance of being ready to start up—due doubtless to the presence nearby of a caretaker. It was supplied by 3' x 4' wooden flume 2,500 ft. long and a 36" riveted-steel penstock 2687 ft. long under 600-ft. head. The flume is deteriorating badly, sections having fallen out.

3) **The Annex Creek Plant**, built in 1905, accessible only by helicopter or a 200-mile boat trip, was not visited. Located at Taku Inlet, 11 air miles E. of Juneau, it contains two 2,500-H.P. Pelton-Doble impulse wheels driving 1,750-kva, 2,300-volt Allis-Chalmers generators. The power is stepped up to 24,000 volts and transmitted to Juneau by a 12-mile transmission line supported partly on steel and partly on wood towers. It operates today essentially unchanged from its original construction.

4) **The A-J built an 8,000-kW steam station** at their mill at the S. end of Juneau, consisting of one 2,000-kW and one 6,000-kW unit. It was a standby plant and rarely used. The building stands today near the AEL&P offices, in use as a warehouse, the machinery removed.

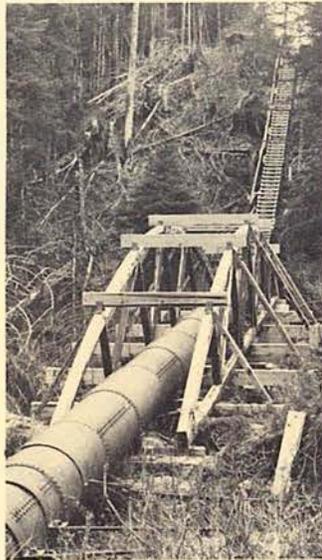
5) **On Douglas Island an elaborate hydraulic system** was developed to bring water to a powerhouse on Bullion Creek. Fish Creek and Bullion Creek were given reservoirs; water was brought from these through a 12-mile covered ditch to a forebay 570 ft. above the powerhouse, and from there through a penstock to the Bullion Creek plant and to the various air compressors and stamps at the adjacent Treadwell Mines. The plant stands badly vandalized. The Pelton wheels are intact but the generators and switchgear have been smashed for their copper and vandals have broken what they could not remove.

6 and 7) Perhaps the most interesting of the developments are **the two power plants on Salmon Creek**, 6 miles NW of Juneau. The first seen is the **Lower Salmon Creek Plant**, alongside the highway connecting Juneau with the airport. The plant burned in 1922 but the machinery was not damaged and immediately it was rebuilt. It contains two units, each a double overhung 2,500-H.P. impulse wheel pair driving G.E. 1400-kW, 3-phase generators at 2,300 volts. One unit was built by the Yuba Construction Co., the other by Pelton. Additionally, there are two exciter sets. The plant is closed but maintained in mint condition: neat,

clean, recently repainted, and apparently out of service only a short time due to penstock problems. It is supplied by a two-mile 5' x 6' covered wooden flume which begins just below the Upper Salmon Creek Plant, and two 1,625-ft. riveted-steel penstocks of 40" and 42" diameter. A narrow-gauge incline parallels the penstocks and terminates below the wood pressure box and its gatehouse. It is built on timber trestling and still is serviceable but falling into disrepair. It serves as the "stairway" to the flume. Below the flume and paralleling it a 2-mile tramroad connects the incline and upper power plant. It has been out of service for some time and sections are intact, but many bridges are collapsed.

It is possible that AEL&P will recondition the line and operate it in summer for tourists if funds can be found for the considerable restoration this would require.

**Upper Salmon Creek Powerhouse** is about a mile below Salmon Dam and receives water through a 30-40" penstock of 4,400 ft. Like the other A-J hydroplants, it is timber framed with concrete floor and foundation, sheathed in corrugated iron. There are two 2,500-H.P. Joshua Hendy single-overhung impulse wheels, driving G.E. 1,400-kW, 2,300-volt generators. Lombard type "M" oil-pressure governors control the deflectors and needle nozzles. Hendy also furnished the impulse wheels driving the G.E. exciter sets. This plant is in daily operation; the power is transformed to 23,000 volts for transmission to Juneau. The Salmon Creek Dam is a massive structure with 650-ft. crest, 165 ft. high, of constant-angle concrete-arch type. Atop the dam crest are the remains of the contractor's steam locomotives used in construction of the dam and power plants. The plant operators work in week-long relays, arriving by hiking up the incline and atop the flume. Supplies are flown in by helicopter!

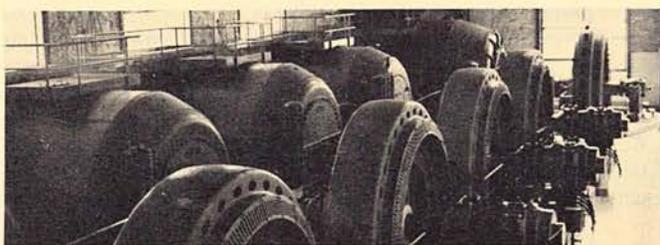
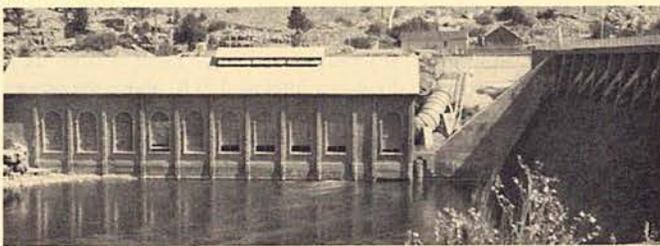


The Upper Salmon Creek plant receives water through this 30 to 40-inch, 4400-foot penstock. Small timber bowstring trusses carry the pipe across creeks. Stairs and handrail are provided on the steeper sections for the penstock is the path to the dam.

## HYDROPOWER—SURVIVAL & REVIVAL

### EARLY HARNESSING OF THE MISSOURI

The harnessing of the upper Missouri River for its hydroelectric power was begun in the late 19th and early 20thCs on the stretch between Helena and Great Falls, Mont. One of the more historically interesting hydro structures still in operation is Hauser Dam, 20 miles N. of Helena.



Richard E. Alberts photographs.

The dam and powerhouse were started in 1905 by Mont. Power Co. and completed in 1907. In May, 1908 the dam washed out resulting in extensive flooding downstream and complete swamping of the powerhouse. The present dam was constructed 1909-11. The original turbines and generators were disassembled, cleaned, reassembled and have been in almost continuous operation since.

The generating units consist of five S. Morgan Smith (now Allis-Chalmers Co.) horizontal turbines on 2800 kW Westinghouse generators. In 1914 a 6th Smith turbine, and 4000 kW General Electric generator, were installed. The powerhouse contains most of the original transformer and distribution equipment and provides an interesting example of early-20thC hydroelectric technology. *R.E.A.*

### 1907 HOUSATONIC RIVER STATION TO GO BACK ON LINE

With a premium being placed on new sources of electric power generation, the old mill sites of the Northeast are looking increasingly attractive. A number of sites that provided natural sources of power to 19thC industries are again being used to generate electricity. Many of these sites saw earlier use around the turn of this century when small hydroelectric plants dotted the major rivers of New England supplying small utilities and manufactories with cheap electricity.



Peter H. Stott photograph.

One such plant was the Monument Power Plant in the Glendale section of Stockbridge, Berkshire Co., Mass. (STOCKBRIDGE 358820). The powerhouse, a square single-story ashlar granite building, was constructed to generate power for the Monument Mills, 1 3/4 miles downstream in the village of Housatonic. With two 750-H.P. turbines fed by the waters of the Housatonic through a 1600-ft. canal, the station provided the mills with 1,120 kW. The textile mills ceased operations c1956, the power station closed down about 5 years later, and most of the equipment—including the original generators, one each from Stanley Electric and Westinghouse—was sold for scrap.

The station, long neglected and subject to vandalism, is about to see a rebirth. Mary C. Heather of Stockbridge and her brother Joseph Guerrieri, a retired civil and electrical engineer in California, have formed the Housatonic Energy Conservation Assn. (HECA), whose first project is to restore the power plant to operation, with sale of the expected 250-300 kW to Mass. Electric. HECA expects to operate the plant on a non-profit basis. "The plant," Guerrieri says, "would probably make just enough money to pay for its restoration and operating cost. But it would provide employment for laborers and one maintenance man."

With new gates, generators, and turbines expected momentarily, Mrs. Heather said, she hoped that the power station would be in operation by this summer. National Register status for the 71-year old station is pending. *P.H.S.*

## THE WORK OF IA

**BALTIMORE CITY SURVEY.** A thematic survey of historic engineering and industrial sites has been initiated by the Baltimore City Dept. of Planning under a federal matching Survey Planning grant administered by the Md. Historical Trust. The \$26,000, one-year project, to be conducted by Dennis Zembala [SIA], includes basic recording of manufacturing, transportation, and utilities sites in the Harbor areas, Jones Falls Valley, and various other sections of the city. Studies leading to possible adaptive re-uses are being incorporated, as is research into the history of associated industrial activities and firms. The Baltimore Industrial Museum is cooperating. Information: Mark E. Edwards, MHT, State Circle, Annapolis, MD 21401.

## HUDSON-MOHAWK URBAN CULTURAL PARK

Traditionally, urban parks have provided green breathing space for large cities lacking ready access to the park lands of more rural areas. A new concern with environmental quality has, in recent years, allowed the expansion of the concept of urban parks to embrace the total surroundings — cultural as well as natural. Lowell, Mass., with the guidance of a Congressional study [SIAN July 77:2], has developed this concept further, weaving the rich industrial fabric of the textile mills and canal system into a detailed plan for the preservation, interpretation, development, and use of the city's natural and cultural resources.

In 1977 the N. Y. State Legislature approved, and the Governor signed into law, an act creating a similar urban cultural park in the five towns at the confluence of the Mohawk and Hudson Rivers — Troy, Waterford, Cohoes, Green Island, and Watervliet. SIA veterans will remember the area as the scene of the 1969 pilot HAER survey, and in 1973, the site of the SIA's 2nd Annual Conference.

Passage of the act was assisted by the Hudson-Mohawk Urban Cultural Park Commn., an intergovernmental body whose members included staff people from the several communities as well as from the Hudson-Mohawk Industrial Gateway, the group perhaps most instrumental in formulating the concept here. As defined by the Commn., the urban cultural park concept calls for a comprehensive redevelopment plan based on the area's resources — natural, man-made, and cultural. The Commn. hopes that in the process the plan may serve as a demonstrable breakthrough in community development planning.

The H-MUCP act, recognizing both the importance of the area's industrial history and the work of the Commn., designated that body as the appropriate entity to coordinate the interpretation and development of the park, and called for a "heritage trail" to link the significant urban resources of the region. In January, the NYS Office of Parks & Recreation, to whom the plan was assigned, announced the selected consultants: the Preservation/Design Group of Albany, and Reimann, Beuchner, Crandall Partnership, landscape architects of Syracuse. In addition to designing a trail system to link major resources, the study team also will examine funding and legislative tools for the preservation and development of various aspects of the trail. P.H.S.

## VIRGINIA'S REMARKABLE ROADS & BRIDGES SURVEY

In December 1972 the Va. Highway & Transportation Research Council presented to the Commonwealth "A Proposal for Initiating Research on History of Road and Bridge Building Technology in Va.," and in August 1973 an advisory committee was formed to guide the work, composed of persons from pertinent divisions of the Dept. of Highways & Transportation and representatives of the universities of Va. and W.V., the Va. Historic Landmarks Commn., the Historic American Engineering Record, and the History & Heritage Comm. of the A.S.C.E.

Research has progressed along two broad lines: a study of roads and a study of structures. The first project was a statewide state-financed survey of metal-truss bridges conducted by Dan G. Deibler. Reports have appeared for four districts (Staunton, Culpeper, Richmond, and Fredericksburg) — in addition to a general report — and field surveys for the remaining districts have been completed, their reports expected out this September. Surveys of the Lynchburg and Bristol districts were included in the Commonwealth's "Project 1388", *Criteria for the Preservation & Adaptive Use of Historic Highway Structures*. This project also provides for a statewide survey of masonry and concrete-arch bridges and the development of criteria for determining their historic significance.

A third study, *Modifying Historic Bridges for Contemporary Use*, was started in January 1978 to explore ways of adapting 22 historically significant metal trusses for contemporary purposes. This should be completed by Dec. 1980.

The road-history studies, funded from Commonwealth research funds, have been carried out by N.M. Pawlett [SIA]. A major work has been the *Pilot Study of Albemarle County Roads*, in preparation for a guidebook for writing county road histories. Seven road-history reports have been published, and a related study, *A Brief History of the Staunton and James River Turnpike*. Response has been extremely good, with a total of 6000 copies of the eight publications distributed.

This project also inspired the Univ. of Va's. School of Architecture to offer a course titled: "Architectural Development Along Virginia Road Traces", under Prof. K.E. Lay, leading to the completion thusfar of surveys of architecture along: 1) Three Notch'd Road from Blue Ridge to the Goochland Co. Line, 2) Buck Mountain Road from Stony Point to Crozet, and 3) Secretary's Road from Bremono to Charlottesville.

The immediate benefits derived from these studies have been their practical use to the Environmental Quality Division of DH&T in the preparation of environmental impact statements, and to the Commonwealth's Public Information Office in answering public requests for information. Future emphasis will be on road studies with the goal of providing sufficient background for the designation of a statewide system of historic highways that can be interpreted for tourists and to assist county historians in preparing county road histories. A second project will be the compilation of road orders from selected early-18thC antecedent counties from which numerous other counties were separated as settlement continued westward during the remainder of the century. H.H.N.

## MINNESOTA ICE CUTTING

The last known ice-cutting operation in Minn. has described in a partially published manuscript by writer Michael Kopp who visited and photographed the process last winter [see "Echo of the Past on Northwest Angle," *Minneapolis Tribune Picture Magazine*, Mar. 5, 1978]. The ice has been harvested for 40 years by commercial fishermen on Lake of the Woods in the Northwest Angle. (The Angle is that peculiar point of northern Minn. that juts into Canada as the result of early-19thC diplomatic blundering in Europe, making it the northernmost point in the lower 48.)



Ed Vickaryous, commercial fisherman and owner of the ice house, places bridles on ice blocks for hauling into house. *Minneapolis Tribune Picture Magazine photograph by Michael Kopp.*

A portable circular saw is used to score the 22x44-inch, thousand-pound ice blocks which then are sawn by hand. The blocks are maneuvered by gaffs and peavies through an open-water channel to the foot of a wood ramp built over the frozen lake into the ice house.

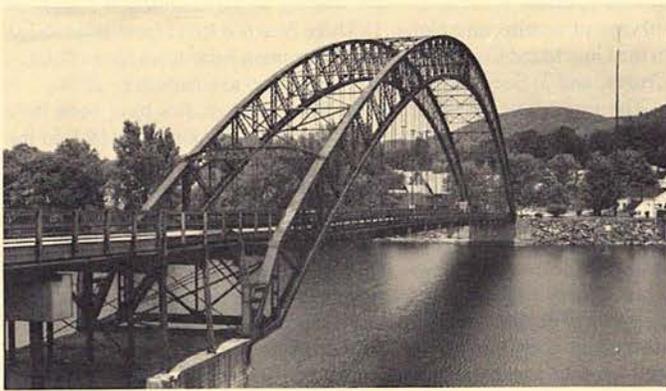
On the ramp the blocks are fitted with a "bridle" connected to a rope leading to the ice house entrance. Power is supplied via a pulley system from a 4-wheel-drive truck on the ice. At the top of the ramp the blocks are slid into the corrugated metal ice house where old tires keep them from crashing into each other and breaking. Here several men shove them into rows and then layers, with each layer separated by sawdust.

At one time about 500 to 600 blocks were stored in the house. Word since Kopp's visit is that ice might not be cut again and the 1977-78 natural ice harvest may have been Minnesota's last. R.M.F.

## CONTRIBUTORS TO THIS ISSUE

Richard E. Alberts, Seattle; Robert M. Frame II & John Wickre, Minn. Historical Soc.; Laurence F. Gross, Merrimack Valley Textile Museum; Howard H. Newlon, Va. Highway & Transp. Research Council; Theodore A. Sande, Natl. Trust; Peter H. Stott, Preservation Design Group, Albany. With thanks.

## BRIDGES

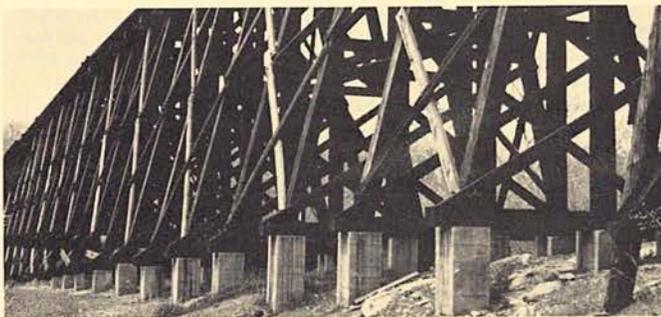


Bellow Falls Bridge — view from Vermont side. *New Hampshire Department of Public Works & Highways photograph.*

**STEEL ARCH.** The future looks bleak for America's first long-span (540 ft.) arch bridge with a suspended floor. The bridge was built in 1905, crossing the Connecticut River joining Bellows Falls, Vt. and N. Walpole, N.H. It was closed in 1971 when an engineering study reported it might be unable to bear its own weight. The bridge has levitated these seven years. On the Historic American Engineering Record's inventory, the bridge cannot be replaced through federally funded programs until Natl. Historic Preservation Act procedures are fulfilled. While N.H., owner of the river bed, is responsible for replacement and eager to proceed, William Pinney, Vt. State Historic Preservation Officer feels the bridge is of such significance as to preclude its destruction. With figures of \$2-4 million being bandied about, the penurious N.H. government wants no part of historical considerations and hopes to replace the bridge at its present site as soon as possible.

**TIMBER TRUSS.** The Ala. Historical Commn., on the other hand, wants the U.S. to give it an old bridge—the Kymulga Covered Bridge in Talladega Co. In the Natl. Register, the 105-ft. Town truss, built in the 1860s, lies on federal land once part of the Army Ammunition Plant at Childersburg. The site is the only one in Ala. where a covered bridge and grist mill remain on their original site. Both structures would be preserved and restored by county or state agencies if declared surplus by the GSA.

**TIMBER TRESTLE.** A c1867 timber trestle in Md. has been added to



*John C. Frye photograph.*

the Natl. Register. The 400-ft. B&O bridge over Antietam Creek at Keedysville is believed to be the only "western type" trestle in Maryland and one of few in the eastern U.S.

**VERTICAL LIFT.** A 50-year-old lift bridge carrying RR traffic across Newark Bay (N.J.) has attained worldwide notoriety for the difficulties it presents to ship traffic in and out of Port Newark. The drawbridge carries 300-400 passengers a day, but has stymied further development of the port. Although valued as a connection for Bayonne commuters, the bridge often is difficult for ships to pass through, and on 28 days last year impossible, while the lift machinery was out of order. A \$14-million channel widening or \$12-million dismantling must be weighed against the conflicting demands of mass transit and shipping. *L.F.G.*

## DEER ISLAND QUARRY AGAIN ACTIVE



Operations have resumed at Maine's famous Deer Island granite quarry, after a brief hiatus. The new owner and manager is Island Resources, Inc., whose president is Robert Bornn.

The Quarry is located on Crotch Island, off Stonington, where quarrying was begun c1871 by Job Grant Saunders Goss, Sr. Over the intervening century and more it supplied stone for a vast array of important projects, including bridges for Connecticut's Wilbur Cross and Merritt parkways, the Cape Code Canal, and Drydock No. 2 of the Portsmouth (N.H.) Naval Shipyard. Other impressive sites using this granite are: the Art Institute of Chicago, the U.S. Naval Academy's Bancroft Hall, and, finally, the John F. Kennedy Memorial at Arlington Cemetery.

Classified as biotite granite, the coarse-grained stone extracted from the quarry is gray with a pink to lavender tint, weighing c163 lbs/ft<sup>3</sup> with a compressive strength of 25,700 lbs/in<sup>2</sup>. Wharfstone, sawblocks, and rip-rap are now available on a special-order basis. Currently the firm is supplying stone for a Rockefeller Center renovation and anticipates supplying 1500 tons of 20 to 30-ton blocks for the Portland (Maine) Public Library. For further information: Island Resources, Inc., Box 726, Camden, ME 04843. *T.A.S.*

## MAN BITES DOG — Conversion Into a Station.



*When was a station not a station? Theodore D.R. Vogel photograph.*

A new commuter station on the B&O's Metropolitan Branch at Barnesville, Montgomery Co., Md. (N.W. of Washington) was dedicated last Oct. A new station anywhere is something of a breather in N. America these days, and the Barnesville structure indeed is new to the use and the site, but it is, in fact, an adaptively re-used industrial building. It started life in 1933 as a small metering station of the Washington Gas Light Co. in suburban Rockville, Md. When WGL proposed demolition late in 1976, a citizens group raised the cry and undertook to obtain it as a logical replacement for the original Barnesville depot that had been demolished some years ago.

All public and private entities involved saw the scheme's merit and cooperated with cash or kind — the Chessie System (owners of the B&O); the County; WGL; the Town of Barnesville; the Montgomery Co. Committee of the Md. Historical Trust; the Chesapeake & Potomac Telephone Co. (which raised wires along the route of march); and according to the dedicatory plaque, a body of nameless "Commuters, Townspeople, [and] RR enthusiasts."

The small brick structure was trundled 23 miles by road in Feb. 1977, (although it was only 15 rail miles) and tastefully set on a new foundation. There it not only serves its new function splendidly, but except for the fact that the door is on the end and the roof overhangs are a trifle rudimentary, it almost *looks* like a railroad station.

## A Steel At Any Price or, the perils of the open hearth policy

A Commentary by Russell I. Fries, Univ. of Maine

The American steel industry is in trouble. Whether you pin the blame on somnolent management, high-rolling union labor, subsidized foreign imports (dumping), or excessive capital costs attributable to environmental laws the result is the same: steel plants are closing across the nation. Off hand this might seem to have little relation to industrial archeology as such, but it represents some of the economic facts of life that help to create new problems or opportunities for those concerned with the N. American industrial heritage. The result will depend upon whether IA strategies are drawn up now, or whether IA responds passively in this industry and others.

The problem for IA is the fact that the closing mills are not the modern facilities, but rather the antiquated ones which harbor all of the IA goodies. As we've observed earlier, open hearths are being eliminated at a frightening rate, and the beehive coke oven and Bessemer converter are but two of the technologies that have virtually disappeared in the face of environmental regulations or new technologies. Plant closings help to preserve the older equipment intact, since the cumulative process of repair, modernization, and replacement that kept plants going up to the present, but which altered them until they may be unrecognizable compared to the original configuration, stops the moment a plant is out of service. In essence, the closed plant becomes the sabre-tooth tiger caught in the tar pit at a certain moment of time, rather than the constantly mutating flu germ that changes almost as one watches. If there was a hope of saving some of the most important of these examples of earlier plants and technologies then the closing might in some sense be viewed as an enormous boon to the field of IA, providing monuments enabling future generations to view and appreciate the raw power, unbearable heat, and amazing productivity of the plant of the late 19th and 20thC steel industry.

However, this result seems unlikely since the costs of preserving a steel mill in any semblance of its original shape and complexity staggers the imagination of most IA forces, still struggling to find the \$5,000 to repair the gristmill roof. Unless a far more massive effort at federal funding for the preservation of IA *per se*, takes place, it seems likely that any attempt to preserve such single-purpose structures intact will fail. It should be added that the scrap value of steel these days makes

preservation even less likely, since the tax benefits of donating a plant might be even less than the salvage value of the plant, or at least the most easily portable parts (steam blowing engines, rolling mills, etc.)

What, then, should we be doing? One factor is clear — the cost of IA increases and the accuracy of the results decreases with every year the structure is allowed to remain idle. The workers move on, memories grow hazy (Was it '42 or '52 when they relined the converter?), the plant moulders, important parts are scrapped or vandalized, and the very documents that might help to interpret details are lost to the next flood or corporate efficiency drive. The time to record these structures is now, but the problem may be even greater than with normal preservation efforts. Usually there are forces (citizens' groups, local politicians, or philanthropists) that are proud of and trying to save the endangered building or site. But the negative spinoffs from these plant closings — such as the recent loss of 5,000 jobs with the shut-down of Youngstown Sheet & Tube's Campbell, Ohio plant — may make this impossible. In the case of the steel mills, typically the town is already in severe economic trouble and the workers and local politicians are more concerned with job losses than with preservation.

It is doubtful if anything except a large and nebulous IA group would have any concern for preservation. How should this effort be focused? Perhaps the best way is to try to change some of the traditional policies that HAER has followed, which generally require local initiative and some local funding. A portion of the HAER budget should be dedicated to non-matching programs if the resource is important enough and the chance of significant local funding is poor. An SIA Consulting Committee could advise on allocating such funds. Industrial archeology might lose some of its glamour but gain in accuracy if the steel works were recorded not by excavating its rotting site in the future, but by making movies of its operation, measured drawings of its facilities, and recordings of the workers and management discussing its hazards and accomplishments now.

The money saved (and excavating archeology is very expensive) could then be made available for other projects, or, perhaps, even reconstruction where warranted. However, until such changes take place, my own view is that the best hope of preservation is to have a healthy steel industry that can support some tax write-offs for historic preservation, even if that means that the tiger escapes the tar.

### DAN PATCH LINE'S NO. 100



Dan Patch Lines No. 100 returned to glory. Minnesota Transportation Museum photograph by Frank E. Sandberg, Jr.

The Minnesota Transportation Museum (MTM), the same folks who gave us Twin City Lines streetcar 1300 [SIAN May 77:6] and Russell L. Olson's *Electric Railways of Minnesota* [SIAN Sept. 77:6], have completed their 4-year, 9,600-manhour restoration of gas-electric locomotive Dan Patch No. 100. Erected by General Electric Co. in June 1913, it is believed to have been the first internal-combustion electric-drive locomotive on a common carrier RR in the world. The Minneapolis Service Shop of the GE Apparatus Service Div. donated help in rebuilding the trucks, traction motors, and generator.

No. 100 was built for the Minneapolis, St. Paul, Rochester & Dubuque Electric Traction Co., which began operating in 1910 between Minneapolis and Northfield, Minn. It was nicknamed "Dan Patch Electric Lines" after the famous trotting horse owned by the line's chief

promoter, Col. Marion Savage. Originally, No. 100 had two 175 H.P. GM V-8 gasoline engines. With her arrival in 1913 the line became the first U.S. RR operated exclusively with gas-electric motive power. The trackage today is owned and operated by the Minneapolis, Northfield & Southern Ry.

By 1914 the GM engines were undergoing revision and when No. 100 was bought by Central Warehouse Co. of St. Paul 1917 it was rebuilt for straight electric operation over their industrial trackage. In 1922 the locomotive was re-sold to the Minneapolis, Anoka & Cuyuna Range Ry., a now-abandoned electric RR once operated just north of Minneapolis. The MA&CR was acquired by the Northern Pump Co. during WWI and reduced to a few miles of switching track in Minneapolis. During 1957 Northern Pump rebuilt No. 100 into a diesel-electric by installing a single 250-H.P. Waukesha diesel, the configuration of today. The Burlington Northern Ry. acquired the MA&CR in 1967 and donated No. 100 to the MTM.

When No. 100 had its debut this spring it was accompanied by two of the original Dan Patch locomotive engineers, ages 85 and 90, who had been located for the occasion. *R.M.F., J.W.*

### RESPONSES

In answer to the query: "How many other bridges successively have carried a steam RR &c, &c?" (SIAN Jan. 78:4), we can point out that the Rochester (NY) Aqueduct, 1837, that carried the Erie Canal across the Genesee River also was used, with an upper deck added, to carry a trolley line and currently — with canal and trolleys removed — serves as a street bridge. *Gerald R. Anderson, The Canal Museum, Syracuse, N.Y.*

## WHAT-IS-IT? DEPARTMENT

This long-neglected structure is located on the extreme southern tip of Sapelo Island, Ga., within a few hundred feet of an abandoned and much older typical brick lighthouse. The fluted columns, steps, and framing all are cast-iron, as are the decorative rosettes at the tie-rod intersections. Some type of beacon or range light? Information concerning the history or the use of this structure, or other surviving examples, is requested by David M. Sherman, c/o SIAN.

Ga. Dept. of Natural Resources,  
Historic Pres. Section photograph  
by David J. Kaminsky.



## MISCELLANEOUS NOTES

### ARCHIVAL MATTERS

**CALUMET & HECLA MACHINERY.** Between 1874 and 1905 the celebrated M.E. Erasmus D. Leavitt designed for the equally celebrated Calumet & Hecla copper mining co. in Upper Mich. a family of some 40 great steam engines for pumping, hoisting, generating, and machinery driving — the most remarkable aggregate of high-quality, high-efficiency prime movers assembled anywhere in the steam era. They and their associated machinery were concentrated mainly in a two-mile strip along the axis of the mine's principal vein. Although the drawings of most of the engines survive, and there was a good bit of engineering press at the time, all of the machinery has been gone since the 30s so it has not been clear just how everything related to the site. It now is. Wm. D. Sawyer [SIA] has at great pains gathered all available data and on a single long site plan shown the location of all engine and boiler houses, shafts, RRs, and related features; and in insets the machinery arrangement in plan and elevation in all buildings. There is extensive historical and physical annotation. Copies of this impressive document are available: 10 ft. x 30 in., sent rolled. Ozalid, \$7., blueprint (longer life), \$9., PpD. William D. Sawyer, 1010 Bush St., San Francisco, CA 94109.

**MINNESOTA HIST. SOC.** has opened for research two collections of IA interest. First is the **Vice Pres., Operating Dept. Files**, another section of the massive Great Northern Ry. Co. Archives. Subjects range widely, from labor matters and "handling Chinese on passenger trains," to silk trains, J.B. Strauss' reinforced-concrete freight car (1920), and the high-pressure steam turbine locomotive of the Stearns Co. (Chicago, 1927). The Twin Cities Terminal Study, completed during the 1930s, is a mine of information on stations, bridges, and grain elevators. The papers of **Frederick McKinley Jones** (1892-1961) include patent files and photographs from this self-taught engineer whose pioneer designs for mobile refrigeration units led to the formation of Thermo-King Corp. (Minneapolis, 1935), and revolutionary advances in the field of transport refrigeration for trucks, railcars, and ships.

### EVENTS

**REGIONAL PLANNING & CULTURAL PATTERNS IN THE N.E.** Symposium by the Council for Northeast Historical Archeology. 21 Oct., Morgan Overlook Lodge, Palisades Interstate Park, Bear Mountain, N.Y. Full, provocative program. Information: Edw. S. Rutsch, Box 111, RD 3, Newton, NJ 07860. (201) 383-6355.

**CANADA'S MATERIAL HISTORY: A FORUM.** Natl. Museum of Man, Ottawa, 1-3 March 1979. A Conference to examine the study of material history, to consider its relationship to the larger field of history, to discuss achievements and potential, and to stimulate future development. Information: History Division, Natl. Museum of Man, Ottawa, K1A 0M8.

**HIGHWAY & RY BRIDGES: RATING, INSPECTION, & UP-GRADING.** A course — 11-13 Oct. by A.G. Lichtenstein, P.E. [SIA] & others. For public works engineers, consulting engineers, and

others responsible for bridges. The technical aspects. Fee: \$395. George Washington Univ., Wash., DC 20052. (202) 676-6106. Ref.: Course 532, Continuing Engineering Education Prog.

**SUBWAYS, AN UNDERGROUND EXHIBITION.** Surveying U.S. and international subway design & construction. Organized by the Cooper-Hewitt Museum. Avail.: SITES, Smithsonian Institution, Wash., DC 20560.

**LOOSE THE MIGHTY POWER: IMPRESSIONS OF THE STEAM ENGINE IN AMERICA.** Graphics, models, and artifacts describing the way the stationary, locomotive, marine, and fire-fighting steam engine impressed Americans and was illustrated by them. From 29 Sept. Natl. Museum of History & Tech., Wash., DC, 3rd-floor. Organized by Roger B. White [SIA].

**A SENSE OF PLACE: THE ARCHITECTURAL LEGACY OF THE INDUSTRIAL REVOLUTION IN ENGLAND & AMERICA.** The planned cities of Lowell, Manchester, Lawrence, and Holyoke, and industrial landscape of Lancashire and Yorkshire. Photographs by Randolph Langenbach [SIA]. Boston City Hall, Main Gallery, 6-30 October.

### TOURS

**CAST-IRON TOURS, N.Y.C.** Friends of Cast-Iron Architecture will run their traditional series of Fall Walking Tours, featuring the World's largest collection of C-I fronts in their many modes and moods. No better way to spend a Sunday afternoon. Oct. 22, 29; Nov. 5. 2:00. Information: (212) 477-2124.

**GATEWAY HISTORIC TOURS & CRUISES.** All aspects of the IA of the industrially important region centered on Troy, N.Y. Remarkable variety and number of events on most weekends through Nov. by bus, foot, boat. Information: 5 First St., Troy, NY 12180. (518) 274-5267.

**FLOATING THROUGH EUROPE.** Complete waterway travel service, all types of vessels avail. Canals, bridges, harbors, &c. GB and the Continent. FTE, Inc., 501 Madison Ave., N.Y.C. 10022. (212) 832-6700.

### RESEARCH INQUIRIES

**BRICK & TERRA COTTA.** Information sought on all aspects and architectural uses; mfg., marketing, technology, documentation of local factories. Ultimate intention to prepare a B & TC encyclopedia. Tom McGrath, 36-R West St., Beverly Farms, Mass. 01905. Additionally . . . Theo. Prudon, author of the APT's Supplement on Terra Cotta (1976) is updating that valued work and invites titles and corrections. C/o Ehrenkrantz Group, 19 W. 44th St., N.Y.C. 10036.

**FULLING MILL.** Does anyone know of one standing anywhere in N. America? John P. Johnson, 42 Water St., Assonet, Mass. 02702.

**HISTORIAN-CURATOR OF TECHNOLOGY.** Fall, 1979. Univ. of Delaware in association with Eleutherian Mills-Hagley Fndn. Combined teaching, MA/PhD supervision, and research/curatorship. Rank dependent on qualifications and experience. Resumes to Chair, Dept. of History, Univ. of Del., Newark, DE 19711.

**WATER MILL FOR SALE.** Bernardston, Mass. Grist mill, rope-drive. In full operation, 6-folk crew. Built in 1897, 6 acres, water privilege, storage bldg., house, &c. E.C. Houghton, Bernardston Grain Co., River Rd., 01337. (413) 648-9311.

**But all us crane freaks need a little release from time to time.** The *Boston Globe* reports that in a London court a lawyer explained why his client, a 16-year-old Swedish sailor, climbed into a parked 50-ton crane, worked every lever, pressed every button, and left it a wreck with \$40,000 worth of damage: "My client is interested in machines. . . So after drinking a litre [34 oz.!] of neat vodka, and topping up with two pints of beer, he embarked on what can only be described as an orgy of mechanical lust."

### PUBLICATIONS OF INTEREST

Compiled by Robert M. Frame III and Susan R. Queripel, *Minnesota Historical Society*.

\* Reviewed in *Business History Review*, Summer 1978 issue.

Rosalyn Baxandall et al. (Comp. & ed.), *America's Working*

**Women: A Documentary History — 1600 to The Present.** NY: Random House, 1976. Female wage-earners, not salaried professionals. Rev.: *Bus. Hist. Rev.*, Spring 1978.

Gerald Bloomfield [SIA], **The World Automotive Industry.** N. Pomfret VT: David & Charles (Box 572, 05053), 1978. 368 pp., 72 charts, 50 maps. \$32.50. Development of the vehicle, the production process, the nature of manufacturing and assembly plants, and marketing and the economics.

Ray Bertler, **Brickmaking, A Manitowoc Industry from the 1850s to about c1948.** *Occupational Monograph 32, 1977 Series.* Manitowoc County (WI) Historical Soc. 1977, 6 pp., (Avail.: Newsletter, 1115 N. 18th St., 54220).

J. Donnachie and J. Hume, **Historic Industrial Scenes — Scotland.** Buxton, England: Moorland Pub. Co., 1977. 112 pp., illus. £4.20.

Roderick Floud, **The British Machine Tool Industry, 1850-1914.** NY: Cambridge Univ. Press, 1976. 217 pp. \$14.95. Rev.: *Bus. Hist. Rev.*, Spring 1978.

Margot Gayle [SIA], **A Heritage Forgotten: Chicago's First Cast-Iron Front Buildings.** In *Chicago History*, Summer 1978, pp. 98-108. Both fronts and principal structural elements. 1st-rate piece by the 1st Lady of Cast Iron.

\_\_\_\_\_, **Our Cast Iron Architecture: America's First Industrialized Architecture.** In *American Art & Antiques*, Vol. I, No. 2 (1978), pp. 108-115. Again fine; much color!

Melody Webb Grauman, **Big Business in Alaska: The Kennecott Mines, 1898-1938.** Nat'l. Park Service, Anthropology & Historic Preservation Cooperative Park Studies Unit, Univ. of Alaska, Fairbanks 99701.

\_\_\_\_\_, **Kennecott: Alaskan Origins of a Copper Empire, 1900-38.** In *Western Hist. Quar.*, April 1978, pp. 197-211.

Laurence F. Gross [SIA], **The Saga of a Fancy Woolen Loom.** In *Shuttle, Spindle & Dyepot*, Summer 1978, pp. 25-30, illus. (Box 7-374, W. Hartford, CT 06107, \$3.50.) Rescue and restoration of a rare c1870 FWL by an intrepid LFG.

Gilbert Herbert, **Pioneers of Prefabrication: The British Contribution in the 19th Century.** Baltimore/London: Johns Hopkins Univ. Press, 1978. 228 pp. \$17.50. Cottages, churches, Brunel's famed infirmaries for the Crimean War; mostly in metal. Modestly illus.

William Hollifield, **Difficulties Made Easy: History and the Turnpikes of Baltimore City and County.** Baltimore Co. Hist. Soc. (Agriculture Bldg., 9811 Van Buren La., Cockeysville, MD 21030), 1978. 92 pp., illus., map, notes. Individual histories of 20 roads & turnpikes.

Frances M. Honour, **The State of the Industrial Revolution in 1776.** NY: Vantage Press, 1977. 114 pp. \$5.95.

H. Arthur Klein, **Pieter Bruegel the Elder as a Guide to 16thC Technology.** In *Scientific American*, March 1978, pp. 134-140. Illus., color.

Edward L. Lenik [SIA], **Weekends in the Soil.** S. Orange: Archeological Soc. of N.J. (Humanities Bldg., Seton Hall Univ., 07208). 94 pp. Good general work for the amateur, asking and answering: Why, When, How, Which, What, & So What??

Rowland J. Mainstone, **The Uses of History.** In *Architectural Science Review*, June 1977. (418 Canterbury Rd., Surry Hills, Victoria, Austr.) 5 pp., illus, Thoughtful acct. of lessons to structural engineers from behavior of earlier structures and failures.

J. Kenneth Major [SIA], **Animal-Powered Engines.** London: B.T. Batsford, 1978. 168 pp. 110 illus. £5.95. Animal in broadest sense, incl. *Homo sapiens*, all happily at work grinding, hoisting, cider pressing, milling, water drawing, *et al.* A thorough, splendid, fully illus. essay on biomechanical power from the earliest times by one who has studied this interesting aspect of technology from every angle.

Robert P. Multhauf [SIA], **Neptune's Gift: A History of Common Salt.** Balto.: Johns Hopkins Univ. Press, 1978, 368 pp., illus. \$22.50. The definitive work on this common but remarkable substance.

Jorge Niosi, **La Laurentide (1887-1928): Pionniere Du Papier Journal Au Canada.** In *Revue d'histoire de l'Amerique francasie*, 1975, pp. 375-415. History of the Laurentide Paper Co., the largest Canadian

newsprint producer.

Theodore A. Sande [SIA], **Industrial Archeology: A New Look at the American Heritage.** NY: Penguin Books, Ltd., 1978. 152 pp., \$8.95. Sande's pioneer American study, now in economical paper, based on the revised 2nd (corrected) hard-cover edn. High-quality reproductions of illustrations.

Richard H. Schallenberg, **Evolution, Adaptation and Survival: The Very Slow Death of the American Charcoal Iron Industry.** In *Annals of Science*, 1975, pp. 341-58.

Robert L. Schuyler [SIA], **Parallels in the Rise of the Various Sub-fields of Historical Archaeology.** In *The Conference of Historic Site Archaeology Papers* (Stanley South, Ed.), 1975, pp. 1-10, and ...

\_\_\_\_\_, **The Written Word, the Spoken Word, Observed Behavior: the Various Contexts Available to the Archaeologist.** *Same*, pp. 99-120. Reprint 1977. Avail.: Inst. of Archae. & Anthro., Univ. of S.C., Columbia, 29208. \$8. the vol.

Darwin H. Stapleton [SIA], **The Diffusion of Anthracite Iron Technology: The Case of the Lancaster Co.** In *Penna. History*, April 1978, pp. 14-57.

Hillary W. St. Clair, **Mineral Industry in Early America.** Washington: Bureau of Mines, Dept. of the Interior, 1977. 62 pp., \$1.25 (U.S.G.P.O., Wash., DC 20402. Stock No. 024-004-01896-8.) Good general account in terms both of the metals and the principal regions, 17thC — present, Illus.

Joel A. Tarr, **Transportation Innovation & Changing Spatial Patterns in Pittsburgh, 1850-1934.** *Essays in Public Works History No. 6.* Chicago, IL: Public Wks. Historical Soc. (1313 E. 60th St., 60637), April 1978. 64 pp., illus. \$2.50. Impact of first the streetcar, then the automobile; also inclines.

James D. Van Trump, **Station Square, A Golden Age Revisited.** *The Stones of Pittsburgh, No. 11.* Pittsburgh History & Landmarks Fndn., 1978. Fine historical acct. of the station and its surroundings; good group of early illustns., on the occasion of opening of first element in re-use scheme (see SIAN May 77:3).

Anthony F.C. Wallace [SIA], **Rockdale — the Growth of an American Village in the Early Industrial Revolution.** NY: Alfred A. Knopf, 1978. 554 pp., illus. \$17.50. "An account of the coming of the machines, the making of a new way of life in the mill hamlets, the triumph of evangelical capitalists over socialists and infidels, and the transformation of the workers into Christian soldiers in a cotton manufacturing district in [Westchester Co.] Penna. in the years before and during the Civil War." An examination in depth of the technology, commerce and social fabric of the village.

#### INTERNATIONAL CONFERENCE PROCEEDINGS/TRANSACTIONS

**Internatl. Conf. on Industrial Archaeology**, Milan, June 1977. Delegates from Canada, France, G.B., Poland, Sweden, and the most important Italian Universities. In Italian, abstracts in English. Reports also from Brazil and U.S.S.R. Available: SIAI - Sez. Lombardia, c/o A. Negri, Via Lucano 2, 20135 Milano, Italy. \$7.50.

**Second Internatl. Congress on the Conservation of Industrial Monuments**, Bochum, W. Germany, Sept. 1975. Werner Kroker, Ed. Reports of represented nations on Recent IA progress + principal papers, including Kenneth Hudson's provocative introductory address: "Who Owns IA?"; Theoretical Aspects of IA; Documentation of Industrial Monuments; Conservation of IMs; Social Aspects of IA. Text about 50/50 Engl./Germ. 452 pp., well illus. Avail.: SIA HQ, Rm. 5020. \$17.

**Third Internatl. Conference on the Conservation of Industrial Monuments**, Stockholm, May-June 1978 — National Reports. Marie Nisser, Ed. Reports on the progress of IA in all the represented nations except the Scandanavian (issued in separate volume): Austria, Belgium, Britain, Czechoslovakia, E&W Germany, France, Hungary, Italy, Japan, Netherlands, N. America, Northern Ireland, Poland, Switzerland. All in English, except Czech., Germany, and Hungary in German; France in French. 166 pp., heavily illus. Excellent summary of the world's recent work in the field. Avail.: SIA HQ, Room 5020. \$12.

## REGIONAL GUIDES & INVENTORIES

Daniel M. Bluestone (Ed.), **Cleveland, An Inventory of Historic Engineering & Industrial Sites**. Wash.: Historic American Engineering Record (Dept. of the Interior, Wash., DC 20240), 1978. 118 pp., illus. One of HAER's first-rate recent inventories, covering topically: ore docks & engineering firms; iron & steel; automobiles; shipbuilding; machine tools; textiles; electrical [equipment]; chemicals; flour; waterworks; bridges; and specialized structures. HAER continues idiosyncratically to insist upon confusing *corporate* names with the names of *sites and structures*. In both site titles and illustration legends the inventory invariably speaks of, for example, the Cleveland Worsted Mills Co., when what it is inventorying, of course, is the CWMCo's. MILL or FACTORY or PLANT. Or, why title a photograph "The Walker Mfg. Co." when it's of Walker's foundry, or more precisely, the foundry interior? They do right by the bridges and most other structures ("Newburgh & S. Shore RR Bridge"; "Division Ave. Pumping Station") so why this curious blindspot?

RIVER TOUR GUIDES (see SIAN May 78:8). Three now are available: **Upper & Lower Mississippi, and Ohio rivers**. From Warren E. Brant [SIA], 2099 LaCrosse Ave., St. Paul, MN 55119. \$3.45 ea. Pp. Much IA, as: locks, dams, factories, RRs.

Norval White & Elliot Willensky [SIA], **AIA Guide to N.Y. City** (rev. edn.) NY: MacMillan, 1978. xv + 653 pp. \$14.95/\$9.95. A most astonishing compendium in its completeness, detail, comment, and informativeness on the architecture of Gotham, incl. a respectable ration of IA — some of it quite obscure (who among you know Geo. Pegram's 1903 Elevator Entrance & Electrical Substation for the late 9th Ave. El at 311 Cathedral Pkwy.?). Highly organized, mapped, indexed, and usable. The genuine article.

**State of N.J.: State & Natl. Registers of Historic Places**. By county, all sites and structures on the two registers, including a pretty good showing of IA. 33 pp. Gratis. N.J. Divn. of Parks & Forestry, Office of Historic Preservation, Box 1420, Trenton 08625.

### IA-RELATED PhD DISSERTATIONS

Frederick Kendall Abbott, **The Role of the Civil Engineers in Internal Improvements: The Contributions of the Two Loammi Baldwins, Father and Son, 1776-1838**. Columbia Univ., 1952.

David J. Jeremy, **The Transmission of Cotton & Woolen Manufacturing Technologies between Britain & the U.S.A. from 1790 to the 1830s**. London Univ., 1978. Abstract: author, 16 Britannia Gardens, Westcliff-on-Sea, Essex SSO 8BN, England.

F. Daniel Larkin, **The New York Years of John B. Jervis, a Builder of 19thC America**. State Univ. of NY, Albany, 1976. RR and water-supply engineer; pioneer.

Thomas Patrick Vadasz, **The History of an Industrial Community: Bethlehem, Penna., 1741-1920**. The College of William & Mary in Virginia, 1975.

*Copies of dissertations available: Univ. Microfilms, Ann Arbor, MI 48106.*

### BIBLIOGRAPHIC COMMENT & MISCELLANY

**HABS publications**. Bear in mind that prior to 1970 sites and structures that now would be recorded/documentated by HAER were dealt with by the Historic American *Buildings Survey* as Interior's sole agency recording structures of any kind. Thus, much IA material is to be found in pre-1970 HABS publications. An example is *Georgetown [DC] Architecture, the Waterfront* (HABS Selections No. 4, 1968), with detail on the Potomac [canal] Aqueduct, the C&O Canal, a traction co. power house, and a large flour mill. HABS, HCRS, Dept. of the Interior, Wash., DC 20240. Inquire for availability of HABS publications and survey indexes.

"APT Communiqué." If we've not mentioned it previously, the bimonthly information bulletin of the Assn. for Preservation Technology has during the past year been radically upgraded under the editorship of Barbara Daniels Swannack, into a meaty, informative publication that stands for a lot more than PT, taking in preservation, architectural history, a bit of all the archeologies, and some other things as well. Can be subscribed to separately: \$8./year US (Canada & foreign ?). B.D.S., Center for Anthro. Studies, Box 14576, Alber-

que, NM 87191.

**Industrial, business & economic history**. A colossal number of titles in these fields, 18th-20thCs, is reprinted by Augustus M. Kelly, Publishers (300 Fairfield Rd., Fairfield, NJ 07006). A great number are IA pertinent, depending more or less on one's own boundaries of the field. Large general catalog is available. A six-page abstract of IA titles from the current (1976) edn. (produced by unspeakably crude cut-&-paste) is available from SIA HQ, Rm. 5020, for \$.50 in stamps.

**IA in "Canadian Geographic Journal,"** June/July 1977: Mill, bridge, and hydro sites in Ontario's Credit River Valley and Fundy Natl. Park; "Evolution of the Canadian Wine Industry"; "The World's Largest RR Museum" (Canadian Ry Museum near Montreal).

### MICRO REVIEWS

Roberto Aristarco, *et al*, **Perspectives of Italian Industry**. Roma: Banca Nazionale dell'Agricoltura; Milan: ETAS Liba 1977. 164 pp., illus. in color, index, boxed.

This work, with concurrent texts in English and Italian, is planned as an examination of a series of events and special cultural facts in an effort to identify their inter-relationships and connection with industrial society. The image of industry in painting is reviewed in two works from the 16thC to the present, ranging from the wool mill scene of c1570 in the studio of Francesco de' Medici to De Chirico's painting of a modern workshop. The following study of industrial society and esthetic research provides an opportunity to present paintings of the present century with such technological themes as lighting, space expansion, radar, and magnetism.

Factory architecture, the function and form of architecture in industry, education of factory workers and facilities for their training, posters of industrial and trade exhibitions, industrial design and industrial themes in the decorative arts, the factory as seen in Italian films, and the industrial landscape are each considered in separate sections. The final section is concerned with IA. Sites described and illustrated range from the remains of industrial architecture in the late-18thC workers' village of San Leucio near Caserta, probably the earliest in Italy, to include the Mongiana foundry in Calabria, the lime furnaces at Calde, a cement works at Alzano, the Caproni sheds in Milan, and the San Sabba rice mill in Trieste, among others.

This handsomely presented volume with numerous illustrations in full color obviously is intended as a presentation work and not for sale. Its value lies primarily on the identification of materials and sites relating to Italian industrial history from which further investigation may be developed. *Silvio A. Bedini, Smithsonian Institution.*

Eugenio Battisti, *et al*, **San Leucio: Archeologia, Storia, Progetto**. Milan: Edizioni Il Formichiere, 1977. 263 pp., numerous illus., paperback.

This work is a compilation produced jointly by the Ripartizione Cultura e Spettacolo of the city of Milan and the Assessorato ai Beni e alle Attività Culturali of the region of Lombardy. It deals with the architectural and archeological history of the working community of San Leucio, situated a short distance north of Caserta. It was noted from the late 18thC for its silk mills developed under the Bourbon reign of Naples as an experiment in utopia.

This volume presents a comprehensive exposition of the economic development of the region, and historical and archeological consideration of its major architectural features. IA is the subject of a brief section by Antonello Negri [SIA].

The work is entirely in the Italian language except for English translations of the captions for illustrations. *S.A.B.*

*The IA implications of this work are discussed by Paulo Caputo in the Marthas Vineyard Symposium transactions, p. 18, q.v. Ed.*

John H. White, Jr., **The American Railroad Passenger Car**. Baltimore & London: Johns Hopkins Univ. Press, 1978. xiii + 699 pp., 800 illus. \$45.

Never again can Jack White's friends quite regard him as a simple mortal such as they. For, here is 8 lbs. of what may well stand as the most remarkable history of an entire technological species ever published. And, lest one presume that the price precludes purchase by any but fanatical buffs, be it known that the first-printing — by no means a short run — has sold out. *Robert C. Post, Natl. Museum of History & Tech.*