

SOCIETY FOR INDUSTRIAL ARCHEOLOGY

NEWSLETTER

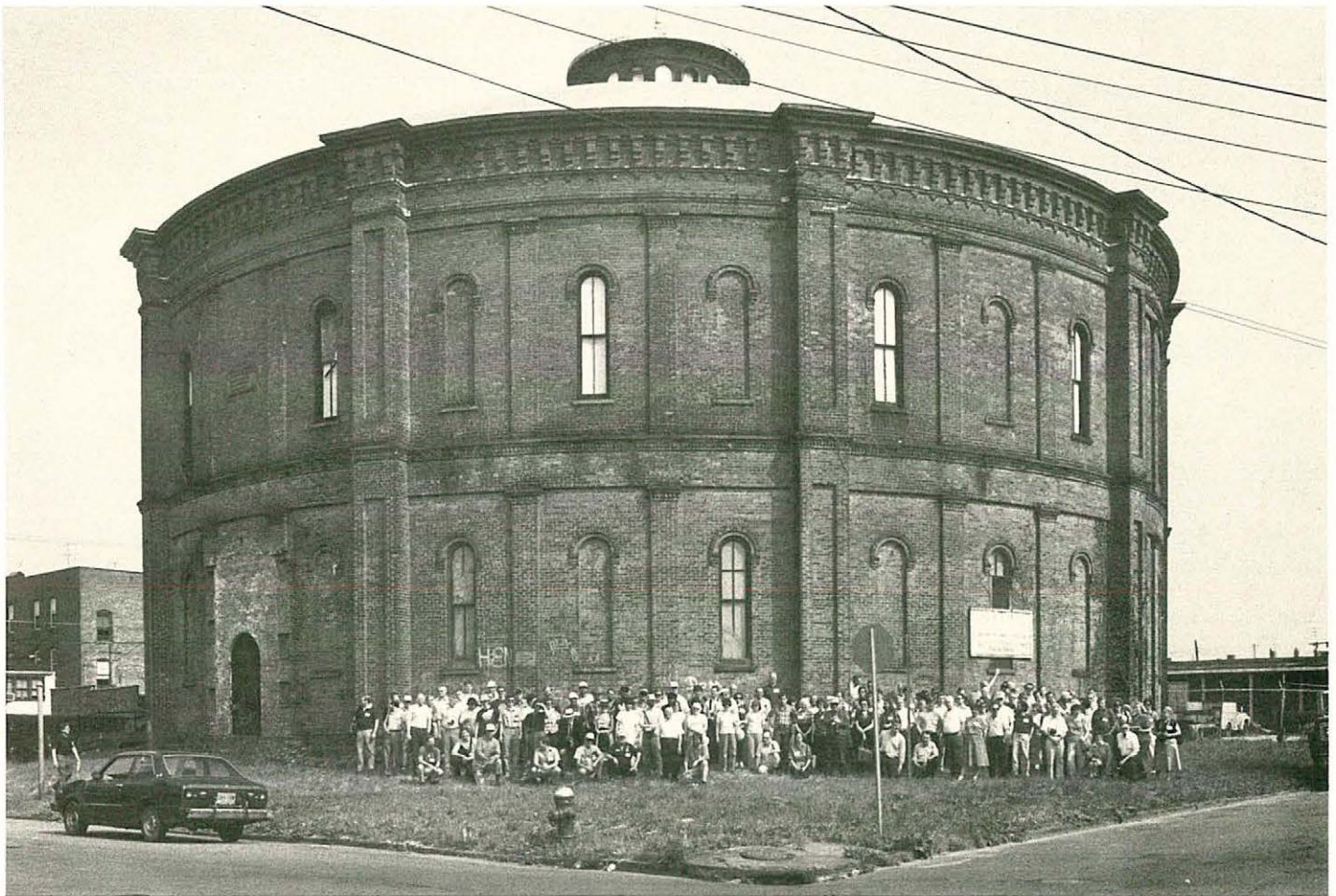
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TROY II—THE SECOND TIME AROUND



SIA family portrait at the 1873 Troy Gas Light Company Gasholder House. R. Frame photograph.

How much can you say about Troy? It's one of those sacred places, like Lowell, to which the SIA must return from time to time.

Troy is special. Its Gasholder House, captured in its structural essence by Eric DeLony for the *Historic American Engineering Record*, has been the SIA's logo since vol. 1, no. 1 of this newsletter announced the Society's founding. That pioneering 1969 project, the Mohawk-Hudson Area Survey, resulted in Robert M. Vogel's landmark *Report*, which remains the standard against which all other industrial archeological surveys must be judged.

Those of us who came on stream with the SIA since the 1973 Second Annual Conference in Troy have been waiting for our own opportunity to stand in the place of origins, to see the Gasholder, the Watervliet Cast-

Iron Storehouse, the Mastodon Mill, and the site of the great Burden wheel. We were not disappointed.

A short walk on Thursday evening from the HQ Holiday Inn brought us to the conference reception in downtown Troy's historic warehouse district, a wonderful assemblage of two- and three-story commercial street-scapes. There, we experienced the first of many links with SIA-Troy past, an enthusiastic welcoming lecture by Thomas Phelan, dean of humanities and social sciences at Rensselaer Polytechnic Inst. In 1973, as then-president of the Hudson-Mohawk Industrial Gateway, Phelan had performed much the same function. Now, he introduced the newcomers to the history of this area at the confluence of two great rivers, the Hudson and the Mohawk, once one of America's most heavily industrialized



ROSS VALVE CO., mfr. of water valves for utility cos., hosted pre-conf. process tour for early arrivals. *Left:* In the iron & bronze foundry, pouring iron from cupola into ladle. *Left cent.:* Filling molds. *Right cent.:* Machining valve body on radial drill. *Right:* Mr. Ross introduces valve. R.M. Vogel photographs.

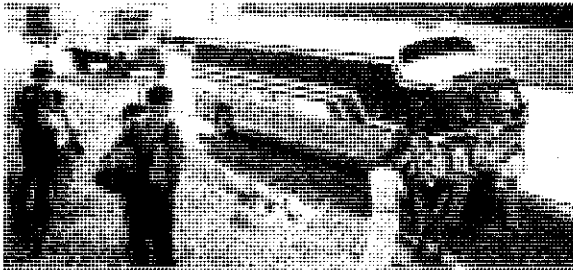
regions. He traced the area's history through its many industrial incarnations, including iron and steel, shirt collars and cuffs, power canals and mills, hydro-electric power, and the Erie Canal.

On Friday morning, May 29, we began Troy II in earnest, with busses ready for a day of process tours. Unlike previous conferences, this time we divided into three subgroups for separate site visits, a situation necessitated by the increasing reluctance of firms to accept large, multi-bus tour groups. One bus would be going to Blue Circle Atlantic Cement Co., another to American Seal Paint Co., and a third to Mohawk Paper Co. In addition to these, each would tour a common group of sites.

As a bus rumbled off to Ravenna for the cement plant at the mind-numbing time of 7:15 a.m., few (including the dedicated tour planners) imagined that shortly would begin a day-long reminder of nature's ability to sabotage plans and machines. Tooling along, we passed the **Watervliet Arsenal Cast-Iron Storehouse** [1859; HAER], Albany's lumber and port district, and the Seaboard grain "clelevator" (actually more a bulk storage

world." When opened in 1962, this state-of-the-art works was the largest cement manufacturer in the world, producing more than 1.8 million tons per year. It is three to four times larger than conventional cement plants, and uses the Hudson to gain access to world ports with 18,600-ton barges, the world's largest. Limestone comes out of the plant's quarry (20th largest in the world) at the rate of 10,000 tons per day, necessary to maintain production. Of great visual interest were the twin 580 x 20-ft., coal-fired rotary kilns, largest in North America. At 2750° F., they convert the cement slurry into marble-size clinker during the 3.5-hr. trip. Unfortunately, the great size and energy of the plant could do little for the underpowered tour bus which groaned and wheezed its way uphill to the quarry, only to find it closed for a hlast.

Meanwhile, as the day quickly heated up, a second group bussed to the **American Seal Paint Co.** Now it must be admitted that of the many



Spring heat sidelines tour bus. A. Eisenpress photo.

shed that doesn't elevate), reportedly the world's largest single-unit elevator when built in the 1930s.

Soon the Ravenna bus was to be found alongside the highway, overheated, engine lid upraised, driver on the radio calling for a replacement. It was a sign. Despite innocent and benign weather predictions, the day was to become hot—very, very hot.

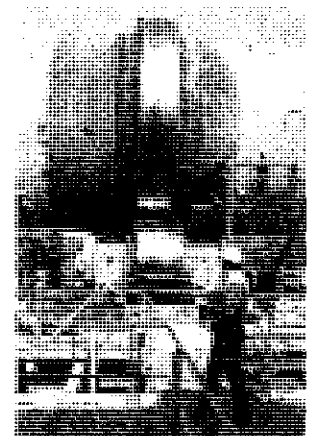
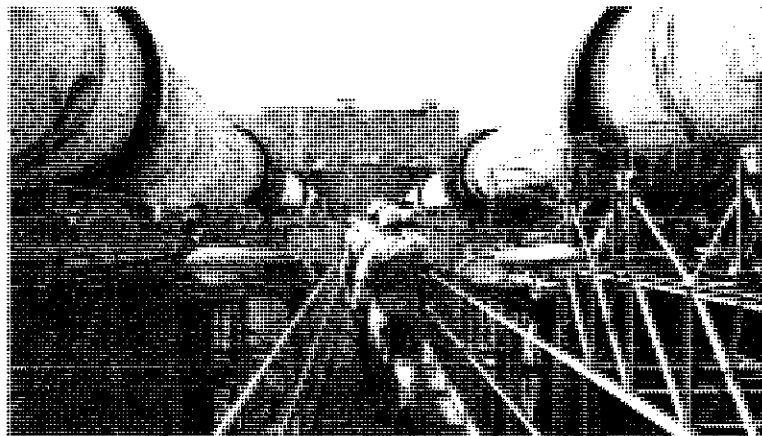
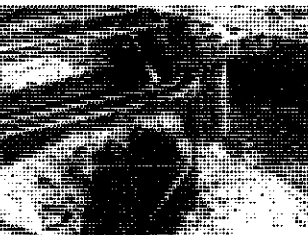
Off again to Ravenna. The **Blue Circle Atlantic Cement Co.** is not a historic plant, but it certainly is a big one. It is an excellent place to observe wet process—for *cement*, not concrete, our guide reminded us. To be correct, it makes Portland cement, "one of the finest powders ground by man," which happens to be the "most versatile building material in the



AMERICAN SEAL PAINT CO. Heavy action on the packaging line. R.M. Vogel photograph.

industrial plants and facilities visited over the years by the SIA, a paint works might not rank within easy view of the top of the list so far as sheer, brute interest is concerned. Still, everything is grist for the mill and if there were few palpitations in the course of the circuit through the Seal plant, there were certain points of distinct interest. As the actual compounding of the paints and allied products is done, essentially, *in camera*, within a variety of large, closed vessels, most of the action centered about the packaging aspects of the place—the subdivision of bulk liquids into consumer-sized lots. This day it was all one- and five-gal. cans and buckets. Surprising was the amount of this work controlled by human intelli-

BLUE CIRCLE ATLANTIC CEMENT CO. It's a 3.5 hr. trip through the twin, coal-fired, rotary kilns (*right*), that are rotated at one rpm on massive trunnions (*far right*). Chains (*below*) were removed from inside the kilns, where feed-end chain curtains help preheat the feed. R. Frame photographs.



gence and discrimination: even the flow of product into container was ordered not by automated volumetric controls as might be looked for in this era, but by plain guys with hands on valves. This led, on occasion, not to a *shorting* of the customer as might further be supposed, but to the very opposite. A moment's diversion of attention and there could be a slight overflow. Then, under the uncompromising pressure of the lidding machine, there would be a resulting oozing or even a menacingly bulging bucket (there seemed to be no means for *removing* excess product from container).

A surprising number of black, bituminous coatings were produced here, for driveways, roofs, roads, foundation walls, and other applications, but it was noted that these all seemed to have a distinctly uniform character, leading to some irreverent speculation as to the possibility of a common source for all.

Seekers of close encounters of an industrial kind on the third bus pursued papermaking in its several ramifications, visiting the Cohoes Plant of the **Mohawk Paper Co.**, producers of premium and specialty printing papers. The firm was founded in Waterford as Mohawk & Hudson Paper Co. in 1872. By 1917 a second mill had been built in Cohoes at the junction of the Erie and Champlain canals. Today, the Waterford plant makes colored stock, while the one in Cohoes produces premium white uncoated cover- and text-weight papers, including arguably the finest commercially produced American letterpress paper, Mohawk Superfine. The firm is still privately held.

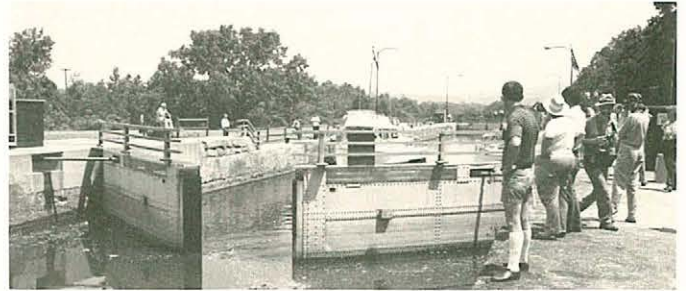
At Mohawk, papermaking begins with bales of chemically bleached pulps (a white, heavy, soft cardboard-like material) arriving by rail from Canada and the American southeast. Batches of the proper composition are made up in large shredder vats called hydro-pulpers. As the name implies, here begins the long process of carefully adding and extracting moisture from the delicate paper fabric. Beaters agitate the slurry into "stuff," which is then poured out onto the moving screen of the Fourdrinier papermaking machines. Water is gradually drawn off to reduce the moisture content from 99.5% to a mere 83%. A watermark is added, a water jet trims the web to the proper width, and the papermaking felts (whose manufacture was seen later at Albany Felt) pass the paper web through presses as it acquires its "finish." Then the paper runs through a series of driers to reduce the moisture content from 60% to 5.5%. Finally the paper is slit and trimmed to the required roll or sheet size.

This highly automated, high-humidity work hummed along without pause on one of the hottest days of late spring. In the cool, elegant typography of the firm's "design and style" commissions which decorate the front offices, it was hard to find signs of the plant's summer sweat and winter condensation. But the papers' textures are nearly alive, and that is testimony indeed to the care with which fine paper is still made here at Cohoes.

The three tours came together at the **Mechanicville Hydroelectric Plant** [1897; *SIA* Summer 86:11] on the Hudson. R.N. King, president of Stilwell-Bierce & Smith-Vaile Co. of Dayton, O., founded Hudson River Power Transmission Co. to build the plant, whose mission was to sell power to General Electric's rapidly growing works at Schenectady, some 18 miles away. A.C. Rice of S-B was chief engineer and Charles Steinmetz designed the generating and transmission equipment. A 17-ft. head drove seven horizontal-shaft quadruplex Victor turbines in open flumes. At 114

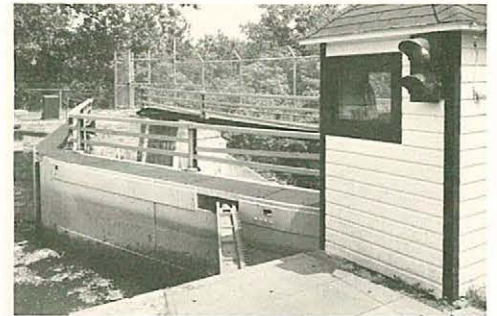
rpm, each set achieved 1,000 hp. After passing through a watertight bulkhead and stuffing box, each turbine shaft was directly connected to a 750 KW, 38 (later 40) cycle generator. Excitation was provided by two DC generators driven by independent duplex turbines. The station's machinery continues to generate at 40 cycles today, with rotary converters installed to step frequency up to 60 cycles. Lombard governors initially regulated turbine speed, but no longer are used.

Off we all headed to a noon lunch beside the picturesque **Lock 6 of the New York State Barge Canal**. Lock 6 is the last (or first, depending on travel) of the five locks comprising the **Waterford Flight** [c1911-15], the series which carries the canal out of the Hudson Valley and around

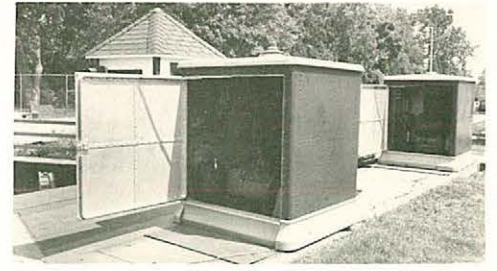


Above: Lock 6 (hydraulically operated gates) of the Waterford Flight on the N.Y. State Barge Canal.

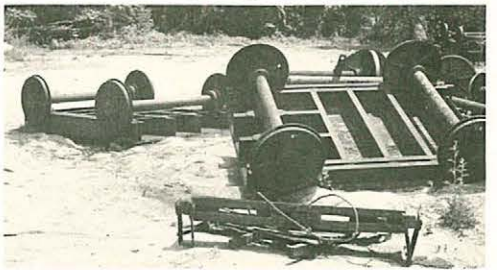
Right top & cent.: Lock 3 (mechanically operated gates), Erie Canal, at the Waterford Shops & Drydock, where the gate & valve systems were explained.



Right bottom: What kind of RR cars are these? Not *any* kind—they're canal-lock valves (in an unnatural, horizontal position), whose wheels take the hydraulic load to reduce friction as they are raised & lowered in the lock walls. These are in for repair at the Waterford Shops.



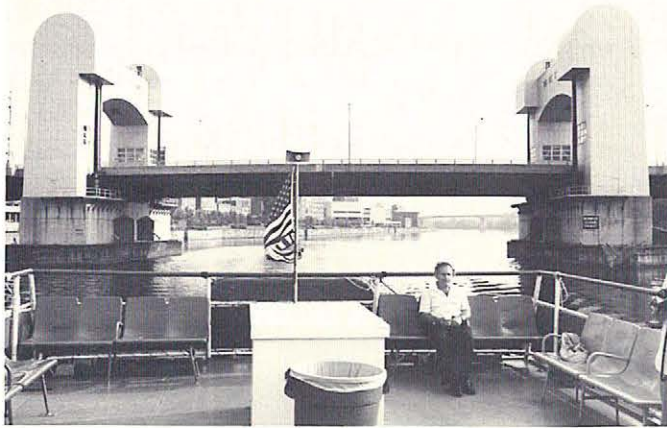
Below: The Waterford Drydock. At left are the shops.



R.M. Vogel & R. Frame photographs.



Mechanicville Hydroelectric Plant (1897). R. Frame photograph.



A late Saturday afternoon cruise takes tourers under Troy's new vertical-lift bridge over the Hudson River. *R. Frame photograph.*

rapids in the Mohawk and the 85-ft. Cohoes Falls, lifting barges 169 ft. in less than 1.5 miles. Lock 6 has a 33-ft. lift, smallest (by 6 ins.) of the flight. We lunched and watched as several small boats locked through. Then all the busses left for the next stop—except that morning replacement bus (inexplicably cursed), which, lacking air conditioning and PA system, was itself to be replaced. Its passengers lingered limply in the shade a while longer and soon the new, cooler bus came.

Appropriately, the next stop was the **Waterford Shops & Drydock** [1917-22], maintenance HQ for the entire Champlain Canal and the Erie Canal east of Little Falls. The facility is home to a large portion of NYDOT's fleet of distinctive blue and yellow tugs, dredges, derrick boats, barges, mud scows, and buoy tenders. The machine shop, on the south side of the drydock, is the center of lock-valve manufacture for the entire system, as well as a general job shop for the Eastern Division. We toured the shop, examining valves in various stages of repair. Next door was the carpenters' shop, largely a sawmill, where oak timbers are milled into curved section quoins used to seal the edges of lock gates, as well as angled miters that form the meeting surface between the two leaves of the lock gate. A walk through the yard included a good view of the dry dock and the operating mechanisms for the valves of the adjacent lock.

Back on the busses for the last stop of the day, **Albany International/Felt Division** [1901 +; formerly Albany Felt Co.]. Incredibly, the "bus of the damned" *again* lost its AC (with sealed windows), giving riders the novel feeling of being containerized and heat-treated. Walking into the felt plant, we discovered that the company had provided chilled beverages in their air-conditioned reception room. Imagine the sense of relief, delight, and unbridled gratitude. But to return to the process. This plant is related, industrially, to paper manufacture. It produces only felts used to press excess water from raw paper stock as it passes through the paper

machine and to impart a finish to the sheet. It is basically a textile mill, weaving base fabrics on looms up to an incredible 27 meters wide, using mono- and multi-filament warp yarns and wool, wool blend, or wholly synthetic fill. Harness action allows production of two- and four-ply fabrics, joined at the selvages, that come off the looms as continuous tubes up to 350 feet in circumference. Needling machines punch fibers from layers of wool and synthetic batting through the base fabric, forming the felt's characteristic napped surface. This is followed by inspection, burling, washing, pre-shrinking, singeing, heat setting, and final inspection.

The day concluded with an optional breezy and refreshing boat jaunt up the Hudson and through **U.S. Lock 1** to the entrance of the Erie Canal. Posted at that historic juncture are mammoth direction signs pointing west for the Erie and north for the Champlain Canal. We cruised back to Troy. In the evening, the traditional "show and tell" slide session was hosted by the Rensselaer County Historical Society in Troy.

The Saturday paper sessions and business luncheon at Rensselaer Polytechnic Institute gave us a chance to browse around the campus. Its location on a hill overlooking Troy affords a panoramic view of the entire area. At day's end, we returned to the Hudson in downtown Troy to enjoy a gourmet buffet in a riverside park. A 1950s jukebox was specially trucked in for the evening. Later, the volume control was located, properly jacked up, and a few footloose SIAers were seen working off the day's more sedate, scholarly rigors.

Since by Sunday the weekend had become notorious for its record-breaking heatwave, hitting the high 90s, we approached the last day's tour busses with some anxiety. But not to worry, for the entire Friday fleet had been replaced with sleek new "motorcoaches" that even boasted onboard ice-water dispensers. It was going to be a great day.

First stop on Sunday was an appropriately religious experience, the **Troy Gasholder House** [1873; HAER]. The faithful piled out of the busses and arrayed themselves, cameras at eye level, along the narrow little street where the great structure sits in its working-class neighborhood of small, older houses. A group portrait was called for, and all posed in front of the wall, kneeling and standing, framed by the familiar outline. Inside we looked around a lot, studied the walls and roof trusses, tried to take photos in the dim light, and listened to our voices echo from the underside of the great domical metal roof. Soon we went outside, took a few last photos, walked back to the busses, and left.

Heading back through Troy we passed the city's great variety of surviving early commercial and industrial buildings, including the **Burden Iron Co. Lower Works Office Building** and the **Troy stove district**, crossed the Hudson and aimed for Cohoes. We drove past mills and millworkers' housing and stopped at the **Harmony Mills Complex**, whose main attraction was the architecturally embellished **Number 3 ("Mastodon") Mill** [1868, 1872; HAER]. This huge cotton-mill complex is situated amongst a six-level power canal system whose head is provided by the drop of the Mohawk at **Cohoes Falls**, which we walked a few blocks to view. Walking back, we passed some of the nearby millworkers' housing. From the bus, we also could view the **Cohoes Co. Head Gate**



COHOES WATERPOWER.

Top left: The Cohoes Co. Head Gate House (1866, 1911), controlling the flow of water to the company's power canal. *R. Frame photograph.*



Bottom left: Cohoes Falls on the Mohawk River, *raison d'être* for the canals, mills, and city. *R. Frame photograph.*

Right: Harmony Manufacturing Co.'s Number 3 ("Mastodon") Mill (1868, 1872) at Cohoes, powered by the canal system. *Edward M. Kutsch photograph.*





SUNDAY TOUR SITES. *Left:* The ruins of Lock 18, Enlarged Erie Canal (1837-42), Cohoes. *Center:* Matton Shipyards building, Peebles Island. *Right:* Inside the Hinckel Brewery brewery building (c1880), which is undergoing conversion to residential units in Albany. *Below:* Inside restored Albany Union Station (1903). *Edward M. Kutsch & R. Frame photographs.*

House [1866; HAER].

Just before lunch, we stopped at **Lock 18, Enlarged Erie Canal** [1837-42], the ruins of a double lock and a fine example of canal masonry. We ate in the park area around **Cluett, Peabody & Co. Bleachery** [1910] on Peebles Island. This plant once bleached, dyed, and pre-shrunk cloth for the parent firm, which produced "Arrow" shirts and was part of Troy's extensive collar, cuff, and shirt industry. Now the building is the administrative HQ of the N.Y. State Bureau of Historic Sites. After lunch, we drove through the rest of the garment manufacturing area, crossing **Collar City Bridge**.

Sunday afternoon was devoted to a few spectacular sites in Albany. Cruising to the first, we passed the several city blocks that have been retrofitted to become a 1930s set for the movie based on William Kennedy's Albany novel, *Ironweed*. The work includes a dirt street, tracks, overhead catenary, and streetcar. We visited the c1880 **Hinckel Brewery** complex, now in the midst of conversion into residential units. The work retains the external appearance and, inside, incorporates original equipment and machinery into a post-modern decor.

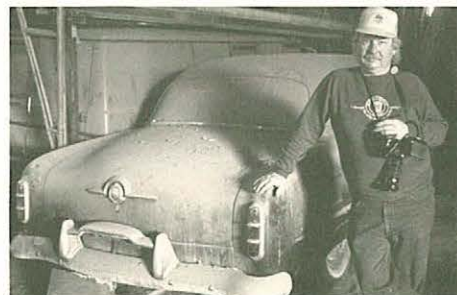
On the way to the final site we saw H.H. Richardson's **Albany City Hall** and the architecturally staggering **Delaware & Hudson Building** [1916], now State University Plaza. The day—and conference—then concluded with a tour of a D&H neighbor, the rehabilitated **Union Station** [1903]. This station, built in grand Beaux Arts style, had been abandoned and appeared doomed until its reemergence last fall as the corporate headquarters for Norstar Bancorp. The project involved an extraordinary structural reworking of the interior which created 102,000 sq. ft. out of an original 50,000 sq. ft. The property was purchased for a mere \$400,000, but the project cost \$18 million—\$15 million after the company's tax credits, without which it could never have been done. Surely this painstaking, gargantuan restoration effort is superb testimony to the value of the tax credit option. Even so, some left wondering if the aura of the formerly lofty station had been compromised by structural reworking, and the distinction between old and new construction unnecessarily blurred.

Like the final burst of a Fourth of July fireworks display, Union Station was an appropriately eye-popping climax to an elaborately choreographed weekend of tours and papers, education and entertainment. Three cheers for conference general chair Duncan Hay (& miscellaneous additional Hays), program chair David Starbuck, and their talented and hard working steering committee.

R.M.F. with R.M.V. & N.W.



SIA VIPs. *Left:* Duncan Hay. *Right:* Pres. Torgersen & Director Vogel in the Gasholder. *Below:* Two old Packards, also in the Gasholder. *Bottom:* The rest of us. *R. Frame & Edward M. Kutsch photographs.*



CONTRACT IA IN PR: A CRITICAL VIEW

Recently the U.S. Army Corps of Engineers, Jacksonville, Fla., District, accepted a contract report by Mark T. Swanson & Prentice M. Thomas Jr., Archeological Excavations at Hacienda Ana Maria (PO33) Ponce, Puerto Rico (New World Research, Report of Investigations 86-10, 1986). Luis Pumarada-O'Neill [SIA], Assoc. Prof. of General Engineering at the Univ. of P.R. in Mayaguez, is concerned about the intercultural problems of understanding IA in this survey process, and has called for agency revision of this report. Ed.

Hacienda Ana Maria was a sugar hacienda which operated between the mid-19th C. and early 20th C. in Ponce, P.R. The U.S. Corps of Engineers will operate a clay borrow pit on the canefields which once belonged to this hacienda. When the required survey of potentially affected cultural resources was made, the remains of a structure were found buried in these canefields. The Swanson-Thomas report covers mainly the excavation and documentation of these remains.

The original structure served for boiling cane juice; it was part of an early or mid-19th C. sugar manufacturing operation. The remains consist of a low platform of stone, brick, and mortar, with a round, vertical, 1-m.-diam. hole near one end, whose bottom meets a horizontal brick-vaulted tunnel which curves in from a wall below the level of the platform. The original ground level formed a depression on one side of the platform, and the tunnel comes from near its center.

It seems that Swanson and Thomas were unable to find and employ some valuable available sources of information, and that in some instances they misinterpreted the sources which they did use and the remains which they found.

For example, they describe Hacienda Ana Maria as "an agricultural enterprise focusing on the cultivation of sugar cane," and they do not mention the production of sugar. In the Puerto Rican context, however, "hacienda" implies an important industrial component, and a plantation with no important manufacturing component, which would indeed focus only on cultivation, was commonly called an "estancia."

They doubt that Jamaican trains were widely used for boiling cane juice in Puerto Rico even in the second half of the century. However, historians have established that even small, ox-powered mills had these single-fire, chimney-equipped, multi-kettle structures as their standard boiling equipment.

While the report provides a description of a "typical" process which yields semi-refined sugar, almost all of the sugar produced in Puerto Rico was of the muscavado type.

In addition to these historical misinterpretations, some Spanish words are translated incorrectly, and Spanish terms which are actually different words which apply to the same object are taken to mean different things.

Notwithstanding the above and the many other misinterpretations in the report, what I consider to be the most significant one is the claim that the ruins found were the remains of a single-kettle boiling operation.

The report's title-page illustration, the authors' version of how the structure uncovered would have appeared when it was in use, pretends that a fire kept at the mouth of the tunnel would have heated a kettle over four feet away with no chimney or opening to draw the heat, since the kettle itself would seal the vertical opening.

This structure, claimed to provide "heretofore unsubstantiated field data on the early development of sugar cane [*sic*; should say 'cane sugar'] production in Puerto Rico," is not likely to be what the authors believe. To me, it appears to be nothing else than the base of a typical Jamaican train of the type normally found in southern Puerto Rico, which has had its top part destroyed some time ago. Its vertical opening was for collecting the ashes of the fire which was kept on a grille originally placed over it, and the horizontal tunnel served as an access for removing the ashes as well as an air intake.

Since no person can begin to understand the historical processes of a different society; carry on historical research in an unfamiliar environment and language; get to know unfamiliar industrial remains; sample and excavate a site; and write a report—all in the few months allowed for

such a job—it is remarkable that the authors were able to accomplish what they did. If there were no qualified archeologists and historical researchers available who were also familiar with the history and cultural remains of Puerto Rico, such a situation would have been unavoidable. But that was not the case.

If this type of a report is commissioned and accepted indiscriminately by whichever agency is responsible for it, the agency may indeed comply with the letter of the law, which calls for conducting a study before a significant site is destroyed. However, an excellent opportunity to add to our knowledge of the past may be lost.

Luis Pumarada-O'Neill
Univ. of Puerto Rico
Mayaguez, PR 00709

EXHIBITS

"WHAT'S BENEATH THE STREETS" reveals the underground world of utilities, tunnels, and conduits, and runs through 1988 at the Baltimore Public Works Museum, Inc., 701 Eastern Ave., Balt. MD 21202 (301-396-5565), in the historic Eastern Ave. Pumping Station on the east side of the Inner Harbor. Open Weds.-Sun., 11-5; free admission.

"MONTANA'S BLACK GOLD: UNDERGROUND COAL MINING COMMUNITIES, 1800-1950," is a traveling exhibit of text panels and framed photos which examine the development and social history of Montana's underground coal mining towns. This "low security" exhibit is appropriate for libraries, banks, and other public spaces. Scheduling info.: Western Heritage Center, 2822 Montana Ave., Billings MT 59101 (406-256-6809).

"MICHIGAN CITY INVENTORS" is the newest exhibit at Old Lighthouse Museum, Heisman Harbor Rd., Michigan City, Ind. Displays include telegraph equipment and patent diagrams and models, all related to regional 19th-C inventors. Also open is a display titled **"Beacons & Keepers from the Past,"** featuring photos and artifacts related to Gt. Lakes lighthouses. The museum is open Tues.-Sun., 1-4 p.m.

NEBRASKA POTTERY. A new exhibit in the Nebraska State Museum of History displays artifacts recovered from archeological excavations of the Lincoln Pottery Works. Pottery molds and a portion of a kiln are shown, as well as historic engravings depicting the original buildings and photos of the excavations. Open Mon.-Sat., 9-5; Sun. 1:30-5, at 1500 R St., Lincoln NE 68501

"IRON MEN & STEEL VESSELS—The History of the Great Lakes Engineering Works" continues through Dec. at the Dossin Great Lakes Museum in Belle Isle, Mich. Part of the museum's celebration of Michigan's sesquicentenary, the exhibit focuses on the contributions of engineering craftsmanship to navigation on the Great Lakes through artifacts, models, and photographs. Info.: Dossin Gt. Lakes Museum, Strand Dr., Belle Isle MI 48207 (313-267-6440).

History News Dispatch

"ONONDAGA INDUSTRIES" continues through Sept. at the Onondaga Historical Assn.'s museum in Syracuse, N.Y. The show surveys the region's industrial development from the discovery of salt in 1654 to the diverse manufacturing operations of modern times. Featured are drawings, photos, models, and artifacts from the makers of automobiles, washing machines, and typewriters. Local milling, piano, and steel industries also are included. Info.: Onondaga Hist. Assn., 311 Montgomery St., Syracuse NY 13202 (315-428-1864).

History News Dispatch



SOCIETY FOR INDUSTRIAL ARCHEOLOGY NEWSLETTER

PUBLICATIONS OF INTEREST

A SUPPLEMENT TO VOL. 16 NO. 2

1987

Compiled by Robert M. Vogel & Helena E. Wright,
National Museum of American History

GENERAL SUBJECTS

Ian Charterlis, et al, ENGINEERING DESIGN. The Science Museum (London SW7 2DD), 1986. 46 pp., illus. Thoughtful essay on the philosophy and techniques of design, drawing on the available and inserting the imagination. Sections on The Need: The Archeology (i.e., the engines of Newcomen, Watt, Trevithick, Lenoir, & Otto). As a case study, the design process for a Rolls-Royce jet-engine fan, and the entry of the computer into the design process. An exceedingly good study, highly recommended.

Julia Elton (cataloger), BRIDGES, RAILWAYS & ENGINEERING. Weinreb Architectural Gallery at Henry Sothoran Ltd. (2-5 Sackville St., London W1), 1987. 50 pp. Catalog of fine prints exhibited and for sale, May 1987. A worthy record in its own right, listing 263 prints of all engineering subjects, mainly 19th-C., mainly but not all British, ca 50 illustrated. Good background description of each work. Price list accompanies.

Donald Dale Jackson, IT TAKES A 'SIXTH SENSE' TO OPERATE UNDER THE STREETS OF NEW YORK. In *Smithsonian*, August 1987, pp. 39-46. Coping with the outrageous ganglia of utility lines there, and some of the early tunnels underlying.

NATIONAL ROOFING CONTRACTORS ASSN., ONE HUNDRED YEARS OF ROOFING IN AMERICA. NRCA (Box 3129, Oak Park, IL 60303), 1987. 258 pp., illus. \$52. Apparently the last word on the many innovations in roofing technology. (Compiled by Loyola Univ's. Mid-American Research Center.)

Bolesl Orlowski, NIE TYLKO SZABLA & PIOREM (NOT ONLY WITH SWORD & PEN). Wydawnictwa, Komunikacji & Łączności (Warsaw), 1977. 272 pp. z1 400. History of the Polish contributions to engineering science & technology.

Daniel L. Schodek, LANDMARKS IN AMERICAN CIVIL ENGINEERING. MIT Pr. (Cambridge, MA), 1987. 383 pp., illus. \$50. A monumental work based on some 100 of the ASCE's landmarks: canals, roads, RRs, bridges, tunnels, water supply & control, environmental engineering, dams, buildings, urban planning, power systems, surveying & mapping, coastal facilities, and airports. The format is large enough that the photos are entirely adequate, not always the case. Of note are the specially drawn maps, most helpful in describing routes of canals and railroads.

Philip Scranton (SIA) & Walter Licht, WORK SIGHTS: INDUSTRIAL PHILADELPHIA, 1890-1950. Temple U. Pr. (Phila.) 1987. 279 pp. Heavily illus. with photos. \$29.95. The great claim to industrial fame of the city as "The Workshop of the World" lay in her many shops--large and small--that turned out speciality items based on a high degree of skill, in relatively small lots, as opposed to Pittsburgh's bulk lots (steel) and Detroit's mass lots.

A.W. Skempton, BRITISH CIVIL ENGINEERING: 1640-1840, A BIBLIOGRAPHY OF CONTEMPORARY PRINTED REPORTS, PLANS, &

BOOKS. Mansell Publ. Ltd. (6 All Saints St., London), 1987. 320 pp., illus. £45. 800 entries covering all aspects of the field, including many of the reports that prior to 1840 constituted a major means of communication within the profession in the absence of the journals.

Mike Wallace, INDUSTRIAL MUSEUMS AND THE HISTORY OF DEINDUSTRIALIZATION. In *The Public Historian*, (winter 1987), pp. 9-19. Intelligent analysis of industrial museums, urging historians to look beyond the collapse of the local economy--which becomes an artifact on display in the local museum--to the real politics of deindustrialization and to how both historians and working-class audiences can understand and influence the present.

YES, MICHIGAN MUSEUMS & MORE--A LOCATOR GUIDE. Mich. Museums Assn. (613 S. Main St., Frankenmuth, MI 48734). Folding brochure. \$???. Lists 313 museums, many of IA interest. (Exhibit on concrete-block-making machinery at Jesse Besser Museum, Alpena, i.e.)

MATERIALS

Richard Conniff, WHEN THE MUSIC IN OUR PARLORS BROUGHT DEATH TO DARKEST AFRICA. In *AUDUBON*, July 1987. pp. 77-93. The 19th-C ivory trade, specifically the transformation of elephant tusks into combs and piano keys by two firms along the Connecticut River, is traced in this account, heavy on the exploitation of African man and beast, but overall very informative. Ivoryton, Conn. featured.

Thomas E. Leary & Elizabeth C. Sholes (both SIA), FROM FIRE TO RUST: BUSINESS, TECHNOLOGY, & WORK AT THE LACKAWANNA STEEL PLANT, 1899-1983. Buffalo & Erie County Historical Soc. (25 Nottingham Ct., Buffalo, NY 14216-3199), 1987. 134 pp., illus. \$10. Ppd. (\$8.25, book rate). Extraordinarily fine account of the business, technological, & work history of Bethlehem Steel's Lackawanna Plant, a once mighty giant now nearly stilled. How can such things happen?

LA MÉTALLURGIE DU FER DANS LES ARDENNES (XVI-XIX SIÈCLES). Inventaire Général des Monuments ... de la France (order from: Conservation régionale de l'Inventaire, Direction régionale des Affaires culturelles, 5 rue de Jericho, 51022 CHALONS-SUR-MARNE, Cedex, FRANCE), 1987. 112 pp. illus. FFr 120 (to 30 Sept.), 140 FFr thereafter). Ppd. Results of inventory of 95 sites, incl. aerial reconnaissance, documentary evidence covering 4 centuries of iron working in the Ardennes region. Includes technical and architectural aspects as well as inventory citations. A previous project by this agency for the area of the Cha-teaubriant resulted in a superb publication, and this should be a worthy successor as many of the same team were involved.

Lance E. Metz (SIA), JOHN FRITZ: HIS ROLE IN THE DEVELOPMENT OF THE AMERICAN IRON & STEEL INDUSTRY AND HIS LEGACY TO THE BETHLEHEM COMMUNITY, 1822-1913. Hugh Moore Historical Park & Museums, Inc. (Box 877, Easton, PA 18042), 1987. 42 pp., illus. \$2. Ppd. One of the leading figures in the industrialization of the iron and steel industry; a chief rationalizer of the Bethlehem company; inventor of the 'three-high' rolling mill (though this disputed by some). Nice account.

Okura Nagatsune, SEIYU ROKU (On Oil Manufacturing), illus. by Matsukawa Hanzan. Olearius Editions (Drawer H, Kemblesville, PA 19347), 1836; English tr. 1987. 79 pp., \$20. First-hand account of extracting and refining rapeseed and cottonseed oils in hand mills. Additional commentary by Carter Litchfield (SIA), comparing Japanese & European oilseed technologies of the period. 26 woodblock prints; special hardbound edn. in traditional Japanese format of the original.

POPE & TALBOT BARGED THEIR WAY INTO LUMBER & LOGGING IN 1849. In *Timber/West*, Sept 1986, pp. 16-17. Early days of the industry in the Pacific NW.

Brian Shovers, THE PERILS OF WORKING IN THE BUTTE UNDERGROUND: INDUSTRIAL FATALITIES IN THE COPPER MINES, 1880-1920. In *Montana, the Magazine of Western History*, Spring, 1987, pp. 26-39. Death lurked everywhere, with the old technology or the new. (With electricity comes both better ventilation and electrocution.)

Julian Skekely, CAN ADVANCED TECHNOLOGY SAVE THE U.S. STEEL INDUSTRY? In *Scientific American*, July 1987, pp. 34-41. Various direct ironmaking processes--with raw coal rather than coke; direct casting of plate and sheet steel; and like exotic procedures. A few historical undertones, and overall, fascinating.

Duane A. Smith, MINING AMERICA: THE INDUSTRY & THE ENVIRONMENT, 1800-1980. U. Pr. of Kansas (Lawrence 66045), 1987. 210 pp. Objective analysis of the attitudes of the industry toward conservation and protection of the environment.

TRAMWAY LOGGING MADE IT PRACTICAL TO LOG FIRST-CUT TIMBER ON WASHINGTON'S KEY PENINSULA. In *Timber/West*, Nov-Dec 1986, pp. 20-21.

Charles E. Twining, PHIL WEYERHAUSER, LUMBERMAN. U. Washington Pr. (Seattle), 1985. 401 pp. \$25. Maps, illus. He, the third generations of the Ws. A combined personal, family, and company history, said by reviewer (*Oregon Hist. Quart.*, Spring 1987) to be satisfactory and well balanced.

Roy Underhill, THE WOODWRIGHT'S WORKBOOK. U. North Carolina Pr. (Chapel Hill), 1986. 248 pp., illus. \$19.95/\$12.95. How-to guide with information about techniques and knowledge of woods of 18th & 19th-C craftsmen.

Jack R. Wagner, GOLD MINES OF CALIFORNIA. Howell North (850 N. Hollywood Way, Burbank, CA 91505). 261 pp., 300 illus. \$25. Detailed look at all phases of large-scale mining.

MISC. INDUSTRIES

Edward L. Bell (SIA), THE HISTORICAL ARCHAEOLOGY OF MORTUARY BEHAVIOR AT A 19TH-CENTURY ALMSHOUSE BURIAL GROUND. MA thesis: Boston U., 1987. (Avail: Mugar Library, BU, on interlibrary loan only.) 175 pp., illus. Deals partially with mass-produced coffin hardware and relationship, in this setting, to standard hardware.

Jean M. Burks, BIRMINGHAM BRASS CANDLESTICKS. U. Pr. of VA (Box 3608, Univ. Station, Charlottesville, VA 22903), 1987. 160 pp., illus., bib. \$20. Work of 7 firms in B'ham, center of English brass and base-metal work in 18th C. Catalog of 100+ examples identified by base type and candle-ejection mechanism.

Richard Dillon, IRON MEN: CALIFORNIA'S INDUSTRIAL PIONEERS, PETER, JAMES, & MICHAEL DONOHUE. Candela Pr. (Point Richmond, CA), 1984. 334 pp. \$30. Three industrious Irish immigrant brothers who learned the ferrous metals and

ultimately founded San Francisco's celebrated Union Iron Works, builders of mining machinery, locomotives, and ships; later to be absorbed by Bethlehem.

Bryan Di Salvatore, "Vehement Fire." In *The New Yorker*, April 27 & May 4, 1987. Lengthy, two-part treatment of the history, manufacture, use, and mis-use of dynamite. Entertaining and thorough.

W. Peyton Fawcett, HISTORY OF THE SPRING INDUSTRY IN THE UNITED STATES AND CANADA. Spring Manufacturers Institute (380 W. Palatine Rd., Wheeling, IL 60090), 1983. 189 pp., free. This self-examination of a little acknowledged but essential industry is heavy on company profiles but also discusses technological development in plain English and considerable detail. Evolution of spring-making machines emphasized. Springworkers, patent dwgs. illus.

Vernon Herbert & Attilio Bisio, A PROJECT THAT HAD TO SUCCEED. Greenwood Pr. (Westport, CT), 1985. 243 pp. \$45. The development of the synthetic rubber industry during the waning days of WW II, and its role quite as vital as the A-bomb. Rev: *Business History Rev.*, Spring 1987.

Judith A. McGaw, MOST WONDERFUL MACHINE: MECHANIZATION & SOCIAL CHANGE IN BERKSHIRE PAPERMAKING, 1801-1885. Princeton U. Pr. (Princeton, NJ 08540), 1987. 439 pp. \$40. First-rate study integrates business, labor, and technological history to detail the changes in Berkshire County (MA) paper industry, including introduction of the paper-making machine and the shift from rags to wood pulp. Good chapter on men's and women's different roles in the mill.

Faith Meyer, THE HISTORY OF THE JOHN DEERE HORICON WORKS, 1861-1986. John Deere Co. (c/o Lauren Miller, JDHW, 400 N. Vine St., Horicon, WI 53032-1291), 1986. 101 pp. Special anniversary issue of house organ.

Donald Sayenga (SIA), TRENTON AT THE END OF ITS ROPES. In *Wire Rope News & Sling Technology*, April 1987, pp. 9-14. (51 E. 1st St., Colonia, NJ 07067). Trenton once produced more wire rope than any other city--Roebbling, Hewitt, and various others over the years--but now almost none. The customary first-class account of the entire saga, by the world's sole wire-rope maker/historian.

Cynthia J. Shelton, THE MILLS OF MANYUNK: INDUSTRIALIZATION & SOCIAL CONFLICT IN THE PHILADELPHIA REGION, 1787-1837. (Studies in Industry & Society, No. 5). Johns Hopkins U. Pr. (Baltimore), 1986. 272 pp. \$26.50. The subject from the standpoint of the Mid-Atlantic states rather than the traditional New England.

Jimmy Skaggs, PRIME CUT: LIVESTOCK RAISING & MEAT-PACKING IN THE U.S., 1607-1983. Texas A&M U. Pr. (College Station 77843-4354), 1987. 263 pp., illus. \$28.50. 1607? Well, wild razorbacks running through the colonial woods, but important talk about the earliest slaughterhouses.

RAILROADS

Preston Cook, ERIE LACKAWANNA MEMORIES: THE FINAL YEARS. The author. (Box 2009, Newport News, VA 23602), 1987. Over 150 color photos of the line from Griffith, Ind. to Jersey City. \$42.45 Ppd + 5% sales tax for MD + \$1. outside US.

Thomas W. Dixon (SIA), RAILROADS IN VIRGINIA. In *Virginia Forests*, Fall 1986, pp. 8-11. The role of the RRs in the forest industries.

Kent T. Healy, PERFORMANCE OF THE U.S. RAILROADS SINCE WORLD WAR II: A QUARTER CENTURY OF PRIVATE OPERATION. Vantage Pr. (NYC), 1985. 295 pp. \$17.95. A general account of this era, with some solid evidence that RR wages played a significant role in the decline of the mode.

Eric Hirsimaki, LIMA: THE HISTORY. Hundman Publishing (Edmonds, WA), 1986. 351 pp. \$38.50. Wonderful work on the Lima Locomotive Works, incl. much data on locomotive design and manufacturing processes; good account of the physical plant, all based on material from the co. archives.

Don L. Hofsummer, THE SOUTHERN PACIFIC, 1901-1985. Texas A&M Pr. (College Station), 1986. \$44.50. First solid account based on hitherto closed records of the RR co.

Donald R. Kaplan, ST. LOUIS UNION STATION: BRIGHT FUTURE FOR A GRAND OLD DAME, Pt. I. In *Pacific Rail News*, May 1987. pp. 12-18. Good description, with fine color photos by author, of the spectacular restoration of one of America's great 19th-century termini.

Maury Klein, THE LIFE & LEGEND OF JAY GOULD. Johns Hopkins U. Pr. (Baltimore), 1986. 640 pp., 40 illus. \$27.50. Interesting new vantages on the robber baron whom America loved to hate, ostensibly providing a more realistic portrait of the man and his works of railroad- and telegraph-company assemblage.

Kenneth W. Maddox, THOMAS COLE AND THE RAILROAD: GENTLE MALEDICTIONS. In *Archives of American Art Journal*, Vol. 26 No. 1 (1986), pp. 2-10, illus. Cole's opposition in word and painting to RR's incursions into virgin forest, notably the 1830s movement of the Canajoharie & Catskill RR thru the Catskills.

H.E. Matics, VIRGINIA RAILROADS--SERVING THE FOREST INDUSTRY. In *Virginia Forests*, Fall, 1986, pp. 17-19. The logging RRs from the 1830s to the end in the 1950s.

E. Willard & Ruby M. Miller, TRANSPORTATION--RAILROADS: ECONOMICS & GOVERNMENT, A BIBLIOGRAPHY. Vance Bibliographies (Box 229, Monticello, IL), 1986. 660 entries, 1980-86. No. P 2039 in a series of 3 bibliogs. The others: No. P 2040, EQUIPMENT & OPERATIONS, 897 entries; and No. P 2039, Companies, 597 entires covering all present operating lines, by region, + short lines and abandonments.

THE NEXT STATION WILL BE . . . AN ALBUM OF PHOTOGRAPHS OF RAILROAD DEPOTS ON THE NEW YORK & LONG BRANCH RR. Railroadians of America (18 Okner Pkwy., Livingston, NJ 07039), 1985. 56 pp. Fine, large-format photos of some 40 depots plus other structures and a few locomotive speed shots; timetables for orientation, and an introduction. The usual high standard of the RofA.

THE NEXT STATION WILL BE . . . AN ALBUM OF PHOTOGRAPHS OF (ERIE) RAILROAD DEPOTS IN 1910: SALAMANCA, NY. TO MARION, OHIO. VOL. IX. Railroadians of America (18 Okner Pkwy., Livingston, NJ 07039), 1987. 64 pp. Based largely on a collection of official Erie photos + map & timetable to identify the depots. As above, 1st class record.

Vernon L. Smith, ONE MAN'S LOCOMOTIVES. Interurban Pr. (Glendale, CA), 1986. 200 pp. \$33.95. The essence of nearly 50 years experience in diesel locomotive design and use, incl. 22 as chief of motive power, Belt Ry. of Chicago.

Edward Steer, HISTORY OF THE PENNSYLVANIA COAL COMPANY'S GRAVITY RAILROAD. Center for Canal History & Technology (Box 877, Easton, PA 18042).

John F. Stover, THE HISTORY OF THE BALTIMORE & OHIO RAILROAD. Purdue U. Pr. (S. Campus Courts--D, W. Lafayette, IN 47907), 1987. 440 pp., illus. \$29.50. Sounds good, although we must wonder what new can be said about the "Mother of RRs?"

Robert D. Turner, RAILROADERS: RECOLLECTIONS FROM THE STEAM ERA IN BRITISH COLUMBIA. Queens Printer Publs.

(506 Government St., Victoria, B.C. V8V 4R6), 1987. 94 pp., 50 illus; maps. \$9. Canadian. Reminiscences of 18 railroaders: avalanches, frightful downgrades, life as she was worked in the steam era. Oral history at its best. Includes listing of RR holdings in B.C. Provincial Archives.

John H. White, MORE THAN AN IDEA WHOSE TIME HAS COME: THE BEGINNINGS OF STEEL FREIGHT CARS. In *History of Technology, 11th Annual Vol.* (1986), pp. 181-209. The remarkable, nearly instantaneous, very expensive change-over from the wooden freight car to the steel, in 1897. An important, little-known, and heretofore untold tale of not inconsiderable interest--the old, familiar one of technological decisions based on emotion and inertia rather than logic and good sense. (In this issue also articles on the early use of the lathe slide rest, the spread of the Warren (bridge) truss, and the acceptance of the continuous RR brake in GB.)

Ted Wurm, MALLETS ON THE MENDOCINO COAST: CASPAR LUMBER CO. RAILROADS & STEAMSHIPS. Trans-Anglo Books (Glendale, CA), 1986. 134 pp., illus. \$82.95. Locomotives, not hammers. Equipment and plant of the firm that operated in the redwoods from 1861 to 1955, with own RR and schooners.

WATER TRANSPORT

John S. Blank, III, MODERN TOWING. Cornell Maritime Pr. (Box 456, Centerville, MD 21617-0456), 1987 (due in Dec.) 512 pp., \$35. The last word on the history and current technologies of towing, both inland and maritime. Incls. 375 drawings, photos, and diagrams.

CANAL CURRENTS--SPECIAL MORRIS CANAL ISSUE. Canal Soc. of NJ--Penna. Canal Soc. (95 Miner St., Wilkes-Barre, PA 18702), Fall-Winter 1986-87. 24 pp. Series of articles and reprints on this interesting waterway, incl. much on its turbine-powered inclined planes.

Helene Espeset, HISTORY OF QUEBEC CANALS: A REVIEW OF THE LITERATURE. In *Research Bulletin*, Environment. Canada--Parks, Feb 1987, pp. 1-17. Good descriptions of the canals themselves as well as the literature, starting with Coteau-du-Lac Canal, the first with locks in N. America (1780).

Paul Fatout, INDIANA CANALS. Purdue U. Pr. (S. Campus Courts--D, W. Lafayette, IN 47907), 1987. 236 pp., illus. \$11.

David C. Holly, STEAMBOAT ON THE CHESAPEAKE: EMMA GILES AND THE TOLCHESTER LINE. Cornell Maritime Pr. (Box 456, Centerville, MD 21617-0456), 1987. \$24.95. The line, the vessel, and the surroundings, incl. engineering, says the blurb.

Robert C. Keith, BALTIMORE HARBOR--A PICTURE HISTORY. Quality Books (918 Sherwood Dr., Lake Bluff, IL 60044-2204), 1985. 168 pp., 250 photos, maps, dwgs. \$12.95. From tobacco days to modern renaissance: shipbuilding, canning, chemicals, steel, export of flour, grain, &c. Hope he mentions the guano, for which the port once was a major center of import, with major bad smells.

Lewis & Dryden, MARINE HISTORY OF THE PACIFIC NORTHWEST. Howell North (850 N. Hollywood Way, Burbank, CA 91505), 1987. Facsimile reprint of 1895 history, edited by E. W. Wright. 500 pp. \$125. All activity from time of Magellan, with detail of nearly all vessels of region. Many illus.

MARITIME PRESERVATION. Special issue of APT BULLETIN: Vol. IX No. 1, 1987. (APT, Box 2487 Station D, Ottawa, ONT K1P 5W6 (613) 238-1972 or 1100 17th St. NW, Suite 1000, Wash., DC 20036 (202) 466-2650). 88 pp. Good & pertinent series of articles on preservation in general, the techiques of ship preservation, WW-II ships, display of vessels, and the procedure for lifting the lines of a historic sailing ship. All absolutely solid stuff.

H.W. McCurdy, MARINE HISTORY OF THE PACIFIC NORTHWEST: 1966-1976. Howell North (as above). 260 pp. \$100. Companion to Lewis & Dryden, above.

Lance E. Metz (SIA) (ed), CANAL ISSUE--CANAL HISTORY & TECHNOLOGY PROCEEDINGS. The Center for Canal History & Technology (Box 877, Easton, PA 18044-0877), Vol VI, March 28, 1987. 175 pp., illus. \$12. PpD. Several good articles on the Penna. canals, on the restoration of Roebing's Delaware Aqueduct, and on the records of the Lehigh Coal & Navigation Co. The customary very good stuff.

Ernest W. Peterkin, DRAWINGS OF THE U.S.S. MONITOR U.S.S. MONITOR, Historical Report Series, Vol. 1, No. 1, 1985. North Carolina Dept. of Cultural Resources (Raleigh) & National Oceanic & Atmospheric Admin. (Washington) March 1987. 588 pp., illus. Gratis, to those with a serious interest. (Order from: Monitor Nat'l Marine Sanctuary, Suite 714, NOAA, 1825 Connecticut Ave., Wash., DC 20235) An absolutely remarkable catalog, illustrating and fully describing every single known engineering drawing of the Monitor, from sketches of the scantlings (iron hull plates) to published cross-sectional engravings.

Robert Shipley, ST. CATHERINES: GARDEN ON THE CANAL. Windsor Publications (760 Brant St., Suite 405-B, Burlington, ONT L7R 9Z9), 198?. 176 pp., illus (incl color). \$28.95. City on the Welland Canal, undertaken for waterpower rather than transportation. Much on the canal and its development.

Michael Skalley, THE FERRY STORY: THE EVERGREEN FLEET IN PROFILE. Howell North-Darwin-Superior (850 N. Hollywood Way, Burbank, CA 91505), 198? 152 pp., 82 photos. \$8.95. The Washington State Ferry System, largest in the nation. Also covers original and replacement Hood Canal Bridge.

Peter D.A. Warwick, THREE SHIPBUILDERS FROM THE WELLAND CANAL. In *Inland Seas*, No. 24 (1987), pp. 50-59. (480 Main St., Vermilion, OH 44089). Wood Vessels, the 1860s and '70s.

ENERGY & POWER

THOMAS A. EDISON PAPERS. PART II (1879-86). Univ. Pubs. of America (44 N. Market St., Frederick, MD 21701; 4800 692-6300), 1987. 69 reels of 35-mm microfilm with printed guide. \$3,900. (Part I: 28 reels with guide, \$1,650.) Monumental assemblage of material from the Edison lab notebooks and other primary sources. Brochure avail.

ELECTRICITY: THE MAGIC MEDIUM/L'ÉLECTRICITÉ: CETTE PRODIGIEUSE ÉNERGIE. Institute of Electrical & Electronics Engineers--Canadian Region. (Orders: IEEE Service Center, Box 1331, 445 Hoes Lane, Piscataway, NY 08855-1331), 1987. 208 pp., 150 illus. \$40. Bilingual. Electrical history from the Canadian perspective.

Robert Friedel, Robert Casey (Both SIA), & Joyce Bedi, A CENTURY OF ELECTRICALS. Institute of Electrical & Electronics Engineers, Center for the History of Electrical Engineering (347 E. 47th St., NYC 10017), 1984. 52 pp. Catalog of the exhibit consisting of 25 posters tracing the history of the Society and the profession from 1880. The catalog is gratis; the show is \$150 (\$80 to IEEE members). Both 1st-rate.

Louis C. Hunter, A HISTORY OF INDUSTRIAL POWER IN THE U.S., 1780-1930. Vol. 2: STEAM POWER. U. Pr. of Virginia (Charlottesville), 1985. 732 pp., illus. \$50. A massive history of the technology and the use.

R.J. Law, THE STEAM ENGINE: A BRIEF HISTORY OF THE RECIPROCATING ENGINE. The Science Museum (London SW7 2DD), 1986 (5th impr.) £2.95. 30 pp., illus. Good short history of the principal types + boilers, illustrated with examples and illustrations from the museum's collections.

Harold L. Platt, SAMUEL INSULL & THE ELECTRIC CITY. In *Chicago History*, Spring 1986, pp. 20-35. The technology & Marketing by which he brought electricity to Chicago in the 1890s. Important figure.

STRUCTURE

Bernd & Hilla Becher, FÖRDERTÜRME (Minehoist Towers). Schirmer/Mosel Verlag (Franz-Joseph Str. 9. D-8080 Munich 40 (or: Postfach 40 17 23), 1985. 224 pp., 196 photos. DM 78. The usual superb documentary photos of the Bechers.

Richard J. Cook, THE BEAUTY OF RAILROAD BRIDGES IN NORTH AMERICA--THEN & NOW. Golden West Books (San Marino, CA 91108-8250), 1987. 208 pp. \$44.95. Nice collection of illustrations and essays on all periods and types of bridges. Nothing new, of course, but a worthy assemblage of the major and many of the minor.

Edward D. Galvin (SIA), A HISTORY OF CANTON JUNCTION. Sculpin Publications, (RFD Box 4027, Brunswick, ME 04011.) 1987. 100 pp., illus. \$16.95 PpD. Full history of this busy spot on the Boston & Providence RR in SE Mass., from 1830 to the near present, heavy in the spot's many industries--including Revere Copper Co., and, especially, the Canton Viaduct of 1835, one of the nation's greatest masonry structures, regarded by some as more a stone wall than a viaduct but it's mighty, nevertheless. Many wonderful period (and recent) photographs of all this.

Dennis Hanson, THE TIDE IS TURNING FOR OLD BEACONS ADRIFT AT LAND'S END. In *Smithsonian*, August 1987. pp. 99-109. Threatened by weather & neglect, many lighthouses are being adaptively reused.

HARDESTY & HANOVER CELEBRATES ONE HUNDRED YEARS OF BRIDGE ENGINEERING. H&H (1501 Broadway, NYC 10036), 1987. 24 pp., illus. Gratis. One of the nation's most celebrated consulting engineering firms, descendant of that founded by the great J.A.L. Waddell. Bridges, their speciality. Nice celebratory booklet with photos of the principals and the works.

Donald C. Jackson (SIA), A HISTORY OF WATER IN THE AMERICAN WEST: JOHN S. EASTWOOD AND "THE ULTIMATE DAM" (1908-1924). Univ. of Pennsylvania Dissertation, 1987. (Xerox copy avail: UMI Dissertation Service, 300 N. Zeeb Rd., Arbor, MI 48106. (800) 521-0600). 877 pp. (in 2 pts). Eastwood's great multiple-arch concrete dams and their impact on non-federal water storage projects. Impressive study.

David A. Simmons (SIA), A NOBLE & MAGNIFICANT STRUCTURE: THE ZANESVILLE BOLLMAN TRUSS BRIDGE. In *Muskingham Annals* No. 4, pp. 11-127. (Musk. Valley Archeological Survey, 24 S. 6th St., Zanesville, OH 43701), 1987. \$11.30 PpD. Illus. The Central Ohio RR's large 4-span truss of 1852-53, one of the 1st major all-iron structures west of the Alleghenies, and its vicissitudes.

Deborah Slanton, et al, THE CAPE HATTERAS LIGHTHOUSE: DIAGNOSTICS & PRESERVATION. In *APT Bulletin* Vol. XIX No. 2, 1987, pp. 52-60. One of major US lights, built 1869, now threatened by eroding shoreline and weathering. Plans for preservation.

Mary Vance, DESIGN OF FACTORY & INDUSTRIAL BUILDINGS. A bibliography. Vance Bibliographics (Box 229, Monticello, IL 61856), Oct 1986. 48 pp. \$12.50.

John Van der Zee, THE GATE: THE TRUE STORY OF THE DESIGN AND CONSTRUCTION OF THE GOLDEN GATE BRIDGE. Simon & Schuster (NYC), 1986. 381 pp., illus. \$19.95. It's a complex story, especially the real role played by Joseph Strauss, the chief engineer, with respect to his consultants and other associates. Good tale, well done.

THE ZILWAUKEE (sic) BRIDGE: FROM THE BEGINNING. Michigan Dept. of Transportation (Box 30050, Lansing 48909), 1987. 29 pp., illus. Gratis. Assurances by state that a partially failed concrete-arch Interstate span has been adequately fixed, in the face of newspaper criticism that it hasn't. Heavy use of epoxies probably didn't help the popular image.

NOTES & QUERIES

COOPER UNION IA COURSE IN 3RD YEAR. "Intro. to Industrial Archeology," taught by SIA president Thorwald Torgersen, opens its third season at 6:30 p.m., Oct. 7, at the Cooper Union for the Advancement of Science & Art in N.Y.C. The fall semester, evening extension course includes eight two-hour lectures supported by slides and film, plus two optional field trips to IA sites in N.Y. and N.J. Registration is \$50, plus the cost of the optional field trips. The Cooper Union traces its history to Peter Cooper, early 19th-C iron master. Info.: The Cooper Union, Continuing Ed., 41 Cooper Sq., NY NY 10003.

ENGINE TOURS IN SEPT., OCT.: In a burst of touring energy, the Stationary Engine Society has scheduled two Fall engine tours. Each will offer the opportunity to see a variety of engines, including major engines operating *in situ*. Info.: Roger L. Robertson [SIA], SES, 3706 Emily St., Kensington MD 20895 (301-942-3507).

"Engines & Museums of the Western Pa. Oil Region," Sept. 11-13, will be hosted by Paul Harvey of the Coolspring Power Museum, Coolspring, Pa. Included are tours of the museum, which houses one of the nation's major collections of internal-combustion engines; the Drake Well Park at Titusville; Heath Station near Brookville, which has six large Snow double-acting, tandem, I-C engines [1912-15], fueled by and pumping natural gas; and the Windy City Air Lease in the oil fields, where a central I-C engine drives a central air compressor whose air powers horizontal slide-valve steam engines [c1880s], still pumping oil.

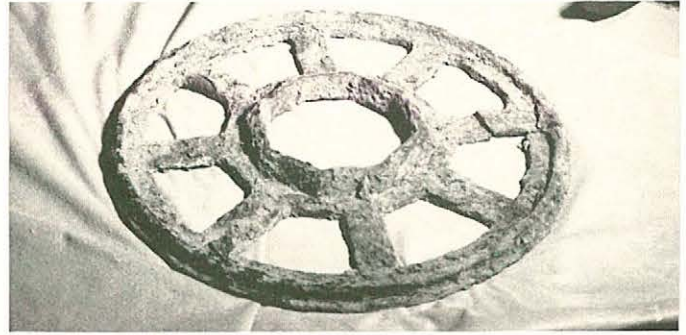
"Steam Engines in the N.J. Area," Oct. 9-12, will visit numerous operating engines in the Hackensack area, including Hackensack Water Co.'s Oradell Pumping Station (Allis Chalmers vertical, triple-expansion, pumping engine); Essex Co. Geriatric Center Power House (Essex Corliss & Hoover-Owens-Rentschler Corliss); Conrail's Long Slip Power House; and Pratt Inst. Power House. *SES Newsletter*

"PRESERVATION TECHNIQUES, INC." HONORED. Chaired by Gersil N. Kay [SIA], Preservation Techniques is a Philadelphia non-profit corp. devoted to public education in the use of trades and crafts for profitable preservation. It recently received two national awards: the Preservation Award of The Victorian Society in America, and the Merit Award for "Build America" from the Associated General Contractors of America. "Build America" is the AGC's continuing program in historic preservation, and PTI's award was for excellence in education, based on its videotape series (discussed below). Kay reports that gaining recognition from the contractors for historic preservation work was a major industry breakthrough.

In addition, PTI is compiling the definitive work on the installation of modern mechanical/electrical systems into older buildings, *while maintaining the architectural integrity of the structure* (the society's guiding principle). This will be an international effort, using latest tools, materials, and methods from around the world. The book will be published by English Heritage. Abstracts currently are being accepted.

October will be a busy month for PTI, including presentations on Oct 7 & 28 by two distinguished preservation architects from Gt. Britain, who will discuss the restoration of the Palm House, Royal Botanic Gardens (Kew), and planning and conservation in the city of Oxford. Also presented in Oct. will be the John McArthur Awards for Excellence in Commercial Restoration, and the "Coal in the Show Awards" for the worst acts perpetrated on unsuspecting buildings. PTI now is looking for nominations for both.

Finally, PTI announces that five videotapes are now available in its series "Profitable Commercial Building Conservation": "Ornamental Painting," "Ornamental Plaster," "Ornamental Wrought Iron," "Polychrome Slate Roofing," and "Stained Glass" (30 mins., VHS or BETA, \$90). These show real workers on actual jobs under time and budget limitations. All footage is inspected not only by architects, but also by representatives of the Occupational Safety & Health Admin. (OSHA) to be sure the work is being done safely. In progress are tapes on carpentry, window repairs, masonry repairs, elevators, plumbing, structural steel insertion, and others. Info.: PTI, 1924 Arch St., Phila. PA 19103 (215-567-0547).



MYSTERY CASTING. Any idea how this casting was used? It is 26 in. in diam., and is supposed to have been found near a "gravity RR" site in the Midlothian coal field, near Richmond, Va. The large hub size and small rim (either grooved or flanged) seem to negate—but not preclude—its use as a car wheel. Contact David L. Salay [SIA], Anthracite Museum Complex, R.D. 1, Bald Mt. Rd., Scranton PA 18504 (717-636-2070).

"PLURALISM & CONTINUITY: ISSUES OF TECHNOLOGICAL CHANGE & ARCHITECTURAL THEORY IN THE 20TH C," is a conference to explore the interface between design and technology, and to develop strategies for achieving both excellence in design and confidence in methodology. Of particular IA interest will be a session on "Engineering as Art: The Aesthetics of Engineering Structures." Scheduled for Oct. 8-9 at Kent State Univ. as the East Central Regional Meeting of the American Collegiate Schools of Architecture. Info.: Elwin C. Robison, School of Architecture & Environmental Design, Kent State Univ., Kent OH.

GALENA LEAD REGION CONFERENCES. A unique joint conference of the Pioneer America Society and the Midwest Open-Air Museums Council will be held at historic Galena, Ill., Nov. 5-7. Topics will include early settlement patterns and landscape change in the Midwest, 19th-C architectural technology, mining, transportation, and related subjects. A Saturday field trip, including a steamboat excursion, will be made through the Tri-State lead and zinc mining region. Submit paper proposals (100-200 word abstracts) by Oct. 1 to Al Larson, Box 4348, M/C 183, Chicago IL 60680. Info.: Thomas A. Campbell, Ill. Hist. Pres. Agency, Old State Capitol, Springfield IL 62701. The Galena/Jo Daviess Co. Chamber of Commerce (101 Bouthillier St., Galena IL 61036) will mail a packet of regional brochures, including an excellent architectural walking-tour pamphlet.

CITY ENGNH HISTORY INTERNSHIP. This summer, the City Engineer's office in Phoenix, Ariz., has its second annual history intern, as part of an arrangement with the grad. program in public history at Arizona State Univ. The first internship in 1986 proved extremely successful, with the office allocating one of its several allotted internships to a history student who conducted summer-long research on the Salt River flood flows, 1965-86. The 1987 intern is studying the history of the Arizona Canal Diversion Channel.

PWHS Newsletter

INDUSTRIAL MUSEUMS NOTE THIS. Never at a loss for novel IA activities, the Baltimore Museum of Industry just sponsored the sixth annual "Lift Off '87." This is a *fork-lift rodeo* that sends professional operators powering their trucks through an obstacle course that simulates actual working conditions, competing for \$100, \$250, and \$500 prizes, along with trophies featuring miniature fork lifts. The event was part of "Harbor Expo '87," the city's celebration of the waterfront, and BMI's first annual exposition on transportation in Md., "Transpo '87."

CONTRIBUTORS TO THIS ISSUE

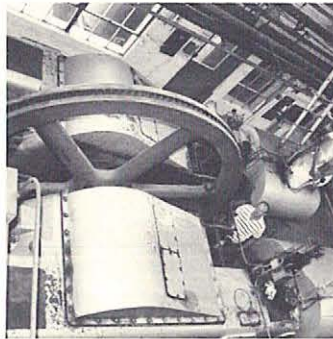
Aron Eisenpress, N.Y.C.; Fred W. Ash, Illinois Rwy. Museum, Union, Ill.; Aarne H. Frobom, East Lansing, Mich.; Edward M. Kutsch, Douglassville, Pa.; Gersil N. Kay, Preservation Techniques, Inc., Phila.; John S. Kebabian, Becket, Mass.; H. Leedom Lefferts, Jr., Drew Univ.; Daniel Mordell, Binghamton, N.Y.; David L. Salay, Eckley Miners Village, Pa.; Robert M. Vogel, NMAH, Smithsonian; Betsy Woodman, Newburyport, Mass.; Helena Wright, NMAH, Smithsonian. With thanks.

NOTES & QUERIES

AVAILABLE

BROWN & SHARPE #2 UNIVERSAL HORIZONTAL MILL with an interesting history needs a good home. "This mill was built and sold in 1906 to the **Peerless Motor Car Co.** in Cleveland. In the 20s, it was acquired by the **Excelsior Mfg. Co.**, which was the motorcycle mfr. owned by **Schwinn Bicycle Co.** When the motorcycle business was dissolved in the 30s, the mill was transferred to the bicycle mfgng. plant and was in the tool room until two years ago. The machine has been converted from cone drive to electric motor drive, with a six-speed gearbox attached to an overhead-mounted motor. All features of the mill operate, including the belt-driven power feed for the table. The spindle bearing has been tightened and the end play removed with the mandrel ends and overarm center tapers reground. The frame casting has been stripped and repainted black and the knee still requires the same treatment. Spindle taper is -11 B&S." Info.: William H. Morris, 4932 W. Berenice, Chicago IL 60641 (H:312-777-6172, O:312-810-5830).

INGERSOLL RAND XPV AIR COMPRESSOR, 55 P.S.I.G., is available free for the hauling from the **Corning [N.Y.] Glass Works Powerhouse.** Built in 1958, serial no. BX-2030—BX-2031; compound bore 44½" & stroke 30", 30" & 30"; engine steam 150 lbs., P.S.I.G. 28,000 lbs./hr.; steam cylinder bore 37" & stroke 30", 25" & 30", 140 rpm.; overall size is 27' x 17' x 10'. Info.: Supt. Richard G. Sadlowski Sr., Main Plant Powerhouse, Corning Glass Works, Corning NY 14831 (607-974-7521).



WANTED

FOLKLORIST SOUGHT for development of exhibit and museum programs on the history of the **Lima Locomotive Works, Lima, O.** Lima was the third largest mfr. of steam locomotives in the U.S. The nine-mon. position begins Oct. 1, and requires skills in history, oral history, and exhibit preparation. Info.: Marilyn Hellmann, American House Inc., POB 5283, Lima O 45802 (419-224-6873).

"SHIFTING GEARS: THE CHANGING MEANING OF WORK IN MASS., 1920-80" seeks humanities scholars to be placed in five "post-industrial" cities to direct participatory community studies and conduct public programs exploring individual and community responses to the impact of economic and technological change on the workplace. This is a scholars-in-residence program sponsored by the **Mass. Foundation for Humanities & Public Policy** and begins late fall/early winter. One major purpose is to reconstruct the recent history of these five older, declining industrial communities through original research which draws upon both traditional sources and the experience of community members. Scholars will be placed in the **Heritage State Parks** in North Adams, Gardner, Lawrence, Holyoke, and Fall River. The **Heritage State Parks** are newly constructed, multi-purpose facilities designed as catalysts for community revitalization through multi-media exhibits and educational programming interpreting the legacy of 19th-C industrial development. Up to five scholars will be hired. Info.: Miriam R. Levin, MFH&PP, One Woodbridge St., South Hadley MA 01075 (413-536-1385).

\$1500 AND A PUBLISHING CONTRACT will be awarded to the author of the best manuscript received by **Lehigh Univ.'s Office of Science, Technology & Society Studies.** The contract will be with **Lehigh Univ. Press.** Manuscripts must be received by April 1, 1988. Info.: Director, LU Press, Chandler-Ullmann Hall, Lehigh Univ., Bethlehem PA 18015

MYSTERY TUB NEEDS ID. "This tub feature recently was found during the excavation of the c1840-1920s **East Creek sawmill site** in southern N.J. The tub is solid wood with no outlets in its bottom. Can anyone



hazard a guess as to what it is, or its probable/possible function?" **Edward M. Morin, Archaeologist, Louis Berger & Assoc., Inc., East Orange NJ 07019 (201-678-1960).**

SIDE-DUMP QUARRY/MINE CARS WANTED to restore for display. Prefer narrow-gauge, pre-WWII or earlier. Send info. on type, mfr., condition to **Mark W. DeLawyer, Box 2107, 550 S. Clinton St., Syracuse NY 13202 (315-422-3772).**

GT. PLAINS MANUSCRIPTS WANTED. A new publication series focusing on the history of environmental design within the broad **Great Plains region** (from the **Mississippi corridor** to the **Continental Divide**, and from the **Canadian border** to the **Texas grasslands**) is forthcoming from **Iowa State Univ. Press.** The **Great Plains Environmental Series** editor is **Herbert Gottfried [SIA]**, who wants manuscripts that address the interdisciplinary aspects of the region's history and welcomes topics of **IA interest.** Published monographs will address the history of architecture and interiors, town planning and urban form, and landscape architecture as well as studies of place and cultural determinants of built form. Info.: **Herbert Gottfried, Coll. of Design, ISU, Ames IA 50011.**

CALL FOR PAPERS. The **Vernacular Architecture Forum** is soliciting proposals for presentations at its **1988 Annual Meeting** in **Staunton, Va.** (date to be announced). Papers may address any aspect of vernacular architecture in the U.S. or abroad, and should be primarily analytical rather than descriptive. Proposals may be for either a 20-min. paper on a subject the author has extensively researched or a 10-min. "work in progress" report. The deadline is **Jan. 4, 1988**, with papers submitted to session chairs by **Mar. 31.** Proposal details from **John Larson, VAF Papers Chair, Old Salem Inc., Drawer F, Salem Station, Winston-Salem NC 27108.** Meeting info.: **Pamela Simpson, Washington & Lee Univ., Lexington VA 24450.**

SIA IRON MASTERS SYMPOSIUM. In cooperation with **Furnaceton Foundation, Inc., of Snow Hill, Md.,** the **SIA** announces a **Working Symposium for Iron Masters**, or those involved with research, preservation, and interpretation of the sites of **America's historic iron industry.** The meeting will be **Oct. 10** at **Nassawango Furnace, near Snow Hill** on **Maryland's eastern shore**, and will include presentations by professionals in research, stabilization, interpretation, development, and management of historic iron sites. Included will be a tour of the furnace site, along with box lunch, social hour, dinner, and an after-dinner presentation at a nearby hotel. For details on agenda, fees, and accommodations, contact **Kathy Fisher, Director, Furnaceton Foundation, Rt. 12, Old Furnace Rd., POB 207, Snow Hill MD 21863 (301-632-2032),** or **Ed Rutsch [SIA], Box 111, RD 3, Newton NJ 07860 (201-383-6355).**

Anyone wishing to be included on the **Iron Workshop mailing list** should notify **Rutsch** at the above address. When writing, include suggestions about ideas and projects for the **IW**, particularly projects in which you would like to be involved—for example, a comprehensive iron bibliography project. **Rutsch** also asks for donations (\$5, \$10, or \$15) to defray operating costs, such as postage and photocopying. Mail checks to **Rutsch**, made out to "SIA," since the **IW** has been given a special account by the **SIA.** Donations are welcome, but are not a prerequisite for inclusion on the mailing list.

NATIONAL PARK SERVICE GETS NEW HEAD OF HAER

The appointment of Eric N. DeLony [SIA] as Chief of the Historic American Engineering Record, National Park Service, was announced May 30 by HABS/HAER Chief Robert Kapsch [SIA] at the SIA 16th Annual Conf. in Troy, N.Y. The post was last filled by a permanent appointment—Douglas Griffin—in 1979. Griffin was followed by a series of 120-day Acting Chiefs until 1981 and the job has remained vacant since, with Kapsch handling the responsibility.

Long familiar to SIA members, DeLony has had a career in industrial archeology that is intimately entwined with the histories of both the SIA and HAER. His native Alabama is recalled in a soft Southern drawl, but he is more apt to point to years spent in industrial Cleveland when asked about IA-type influences.

In 1968 he received his Bachelor of Architecture degree from Ohio State, studying under Perry Borchers, followed by historic preservation graduate studies with James Marston Fitch at Columbia. In the summer of 1968, after leaving Ohio State, he signed on as staff architect on the HABS New England Textile Mill Survey II, under project director Robert M. Vogel. The next summer—1969—he again worked with Vogel, again as staff architect, on the now-famous Mohawk-Hudson Area Survey (aka M-HAS) in New York. M-HAS was the very first undertaking of the fledgling Historic American Engineering Record, which had been created that year. In Summer 1970 he was Project Supervisor on the National Park Service's Baltimore & Ohio RR survey.

In 1971 James C. Massey [SIA], then Chief of HABS, offered DeLony the position of Architect—later Principal Architect—of HAER. He accepted, and thus became HAER's first permanent employee, even before it had its own Chief. That Sept., DeLony began a Fulbright Fellowship in England, studying British IA sites and practices with Angus Buchanan at Bath Univ. and with Neil Cossons at Ironbridge Gorge Museum Trust. He resumed his career with HAER in Sept. 1972, continuing until 1978 when an Intergovernmental Personnel Exchange sent him to Georgia, where he was detailed to the Savannah Landmark Rehabilitation Project as project architect. He returned to his post at HAER in Oct. 1980.

The late 1970s under the Carter Administration were difficult years for HAER, involving a transition from NPS to the Heritage Conservation & Recreation Service (HCRS) and a wrenching regionalization process. Through the early 1980s HAER was rejoined with NPS and in 1985 DeLony worked on the revitalization of HAER, mainly through a series of recording projects. For DeLony, the summer documentation work is the heart of HAER's mission. By 1987, the effort had expanded to 11 projects, approaching the level of the halcyon years of the late 1970s. This summer HAER has 41 people in field work, with a \$282,000 budget.

Now Chief, DeLony has an agenda for the future. He hopes to stretch the project season beyond the 12 weeks of summer into the fall and spring. He also hopes to open up the work to other disciplines. Last summer HAER hired its first illustrator and graphic designer, an important addition for interpretation, since HAER documentation is interpretive. Upcoming maritime documentation will involve recruiting at schools of naval architecture.

While HAER is not a publishing house, DeLony would welcome an update of the *HAER Catalog 1976* for HAER's 20th anniversary in 1989. He also points to new visibility for the documentation in works as diverse as *The Industrial Eye*, the highly acclaimed volume of Jet Lowe's



Eric DeLony recording the upper chord, Old Mill Road Bridge, Hellertown, Pa., in summer 1985. Richard K. Anderson photograph for HAER.

photographs, and a three-part series of HAER coal-mine drawings now appearing in *Model Railroader*. DeLony and Kapsch look forward to putting drawings on microfilm and written documentation on microfiche, and giving them wide distribution among educational institutions.

Continuing HAER's long-time intimacy with the SIA will always be a top priority. That shouldn't be too difficult, since virtually everyone in the Washington office, from Kapsch on down, maintains an active membership, participating in the annual conferences and supporting the *Newsletter*.

SITES & STRUCTURES

ANOTHER NEW ENGLAND MILL BURNS. Right on the heels of the recent tragic mill fires in Lowell and Fall River [*SIAN* Spring 87:1-2] comes another: the destruction on April 16 of the Hamilton Woolen Mill complex in Southbridge, Mass. Textile work at the site dates to at least 1812, with the Globe Mfg. Co. locating there about 1814. The Hamilton firm was incorporated in 1831 and took over the Globe's property. By 1912 the complex had grown quite large. The fire consumed three of five remaining four-story, brick buildings.

BRIDGE PRESERVATIONISTS HONORED. The Historic Landmarks Foundation of Indiana has presented its 1987 Servaas Memorial Award (which includes a \$1,000 prize) to Rush County Heritage, Inc., for its incredibly successful campaign to save its six covered bridges [*SIAN* Fall 86:8]. The group includes the longest (196 ft.) single-span covered bridge in the state open to traffic, and a two-span, 334-ft. example, which is among the longest such bridges in the U.S. County commissioners had planned to demolish the lot, and the 500 members of RCHI mobilized tremendous publicity against the proposal. In a county of 19,000, RCHI gathered 7,500 signatures in favor of preservation. Stories appeared in the *Chicago Tribune* and the *Christian Science Monitor*. The crowning achievement was political, when the pro-demolition commissioners were defeated and replaced with bridge supporters.

The Indiana Preservationist

NEW IRON MUSEUM. The new \$1.5 million Michigan Iron Industry Museum in Negaunee was dedicated in May. Its 39-acre location in the Upper Peninsula, about 12 miles west of Marquette, includes the site of the Carp River Forge, where iron was first smelted in the Lake Superior region. The museum includes 250 items from the private museum of Frank Matthews, which was located behind his house on U.S. 41. Exhibited artifacts include mining tools and an underground mining locomotive.

A.H.F.

RR STRUCTURES IN THE NEWS. The City of Phila. announced in Mar. that it had reached an agreement to buy the landmark **Reading RR trainshed** [1893; a national landmark, but, inexplicably, not recorded by HAER], which has the largest free-standing arch in a building in the world. If current plans continue, the shed will become the centerpiece in a proposed Center City convention center, which will include a 1,000-room hotel and a 700,000-sq.ft. office complex. Phila. will pay Reading \$8 million for the structure.

The **Buffalo, N.Y., Central Terminal** [1929] was sold for \$100,000 at a city tax auction to a 34-yr.-old general contractor who not only isn't sure what his plans are, but isn't even sure how much terminal he owns, since the structure is so vast. Reuse ideas include the usual array of restaurants, retail shops, and offices. In 1929, the terminal cost \$13 million.

In Jan., the recently renovated **Lackawanna Station** [c1910; HAER] in Binghamton, N.Y. was opened with two new commercial shops, as part of the owner's plans to create a local showplace for historic renovation while building a commercial success. The city recently won a state award for the station in recognition of the private-public partnership that made the work possible.

SIA AFFAIRS

15TH ANNUAL BUSINESS MEETING

May 30, 1987
Troy, New York

The meeting was called to order at 1:04 p.m. by President Thorwald Torgersen in the Faculty Dining Room of Rensselaer Polytechnic Institute.

TREASURER'S REPORT. Treasurer Nancy Batchellor reported that the transition from past treasurer Marlene Nicholson was now complete, except for filing the 1986 IRS report, for which an extension has been granted. The 1986 accounts show a surplus of \$18,471.93, of which \$5,000 represents the anticipated return of a cash advance to support the 1986 Fall Tour in Conn. The recently adopted 1987 budget anticipates \$34,950 in revenue, mostly from members' dues. Current income totals \$28,237, of which \$11,482 has been expended. Treasurer Batchellor reminded members that major expenses for the journal had not yet occurred.

COOPERATIVE PROJECTS WITH HAER. The SIA is cooperating with the Historic American Engineering Record to inventory significant sites related to the history of iron and steel production in the U.S. Director David Salay reported on the background of the SIA/HAER project, including a Mar. 1987 Memorandum of Agreement, which spelled out a project chronology, taxonomy, and format. Salay also reported on the SIA/HAER project to produce slide sets depicting structures documented in HAER surveys by Jet Lowe and Jack Boucher. The series on bridges will be available soon. Income will go into a revolving fund to support future slide sets on other topics.

IA JOURNAL. Editor David Starbuck reported that the precedent-setting *second* issue in vol. 12 (1986) on "IA in Art" was mailed in Jan. Vol. 13, no. 1 is in press and will be mailed in June. No. 2, focusing on harbor facilities in the N.Y.C. vicinity, will be guest-edited by Edward Rutsch and Michael Raber.

NORTON PRIZE. The Norton Co., Worcester, Mass., has endowed an annual award for the best essay appearing in *IA* during the previous three years. On behalf of the Norton Prize Committee (Pres. Torgersen, Past Pres. Helena Wright, *IA* Editor Starbuck, & *Newsletter* Editor Bob Frame), Starbuck announced that the 1987 Norton Prize recipient is **Robert Passfield**, Parks Canada, for his essay, "The Role of the Historian in Reconstructing Historic Engineering Structures: Parks Canada's Experience on the Rideau Canal, 1976-83" in vol. 11, no. 1 (1985).

LOCAL CHAPTERS. Chapter Coordinator Sandra Norman reported that SIA has six active chapters, and she had received annual reports from five. She particularly praised the high level of activity in the Roebling, Oliver Evans, Northern New England, and Southern New England chapters. She reported that industrial archeologists in Quebec are interested in forming a chapter.

CURRICULUM PROJECT. Curriculum Committee Chair Jane Mork Gibson reported that SIA had not yet secured a publisher, although numerous inquiries had been made.

REPORT FROM HAER. HABS/HAER Chief Robert Kapsch reported that the long-standing vacancy in the position of Chief of the Historic American Engineering Record will be filled by the appointment of **Eric N. DeLony**, who had begun his professional career in industrial archeology in Troy some 18 years earlier, during the celebrated Mohawk-Hudson Area Survey (see related story in this issue). To the applause of friends and colleagues, DeLony accepted.

DeLony reported on the numerous survey and documentation projects which will be under way during Summer 1987: bridges in Wis. and N.Y.; Ohio and Erie canal structures; the Moravian potteries in Doylestown, Pa.; the PRR shops in Altoona, Pa.; Mesabi Iron Range structures in Minn.; and others. More than 40 students will be employed. DeLony

noted a severe shortage of historians on these teams, and asked for assistance in recruiting good candidates.

Robert Kapsch offered a resolution congratulating **Robert M. Vogel** on 30 years of service at the National Museum of American History, Smithsonian Institution, and expressing gratitude for Vogel's central role in fostering industrial archeology through helping to establish HAER and founding the SIA. The resolution was adopted by acclamation.

FORTHCOMING SIA MEETINGS & TOURS. President Torgersen outlined plans through 1989: *1987 Fall Tour*, South Jersey Pine Barrens; *1988 Annual Conf.*, Wheeling W.Va.; *1988 Fall Tour*, Lehigh Canal, Pa.; *1989 Annual Conf.*, Quebec City, Canada; *1989 Fall Tour.*, possibly Dawson, Yukon Territory, Canada, pending results from a Society referendum.

LONG-RANGE PLANNING. Long-Range Planning Committee Chair Emory Kemp reported on preliminary deliberations and promised a written report to the membership by Fall.

ELECTION. Nominations Committee Chair DeLony reported that the Committee had tried to expand the circle of nominations by soliciting names of candidates from chapter presidents. That strategy produced not a single nomination! He urged all members to consider future service to the SIA. He then announced the election results:

Directors: **Christopher Andrea, Herbert H. Harwood, Robert M. Vogel**
Nominations Committee: **David Shayt**
U.S. Representative to TICCIH: **Stephen K. Victor**

Carol Poh Miller becomes Chair of the Nominations Committee. Retiring Directors are Sandra Norman, Duncan Hay, and David Salay. Victor will attend the TICCIH biennial meeting in Austria in Sept.

1987 ANNUAL CONFERENCE. President Torgersen recognized the great efforts of the Troy conference organizing committee and the co-chairs, Duncan Hay and David Starbuck.

The meeting was adjourned at 2:05 p.m. by President Torgersen.

Nicholas Westbrook, Secretary

FALL TOUR IN PINE BARRENS

The SIA 1987 Fall Tour will cover the area of southern New Jersey known as the Pine Barrens. In the 18th and 19th C, this section of NJ supported extensive industry in the form of bog-iron furnaces, glass houses, paper mills, fishing and oystering, and boat building—all related directly to Pine Barrens geography and natural habitat.

The iron furnaces were blown out for the last time in the 19th C, but the descendents of the other industries may still be seen. In addition to a number of historic sites, the tour will include the operations of the Foster-Forbes glass house in Millville, formerly the Whithall-Tatum Co., which is the oldest of the numerous glass factories still operating in the city. Among the other stops is a South Jersey sand mine, a fleet of oyster dredges, and an oyster shucking house at Bivalve.

The tour begins on Thurs., Sept. 10, with several introductory slide presentations, and concludes on Sun., Sept. 13. Sunday activities include a walking tour of the historic Trenton industrial district, including the remains of the original Roebling wire-rope mill. The concluding event will be a Sun. afternoon brunch at Trenton's historic 1765 Eagle Tavern.

In the evenings, there will be a series of speakers on South Jersey topics: Don Pettifer on glass houses, David Orr on "The Last Waterman," and Bill Bolger with an introduction to Whitesbog, an early cranberry bog developed from the waterworks of an abandoned iron furnace and the site of the development of the commercial blueberry. Roger Allen of the Phila. Maritime Museum will illustrate types of South Jersey boats and Brian Kutner will introduce us to the Pine Barrens through a special slide show. Experts from two Rutgers Univ. labs will illustrate the nature of

the Pine Barrens habitat and the problems of the oyster industry.

The unusual part of the weekend is the arrangement for the tour headquarters. A camp and conference center in the middle of the Pine Barrens will be our home for three nights. Sleeping accommodations include dormitories and four-bed rooms. You will have to bring your own sheets and blankets or a sleeping bag. The Roebling Chapter has successfully used this facility before. We will be roughing it somewhat, but the advantages are twofold: we will be in touch with the surroundings we are studying, and we can provide three night's accommodation, three breakfasts, and Fri. and Sat. dinners, all for under \$50!

Transportation to the camp is by auto; we will provide maps. If you use public transportation, fly to Newark or take Amtrak to Trenton, rent a car or rideshare with a friend for the drive to the camp. Busses will be used on the tour but the Sun. trip to Trenton will be by car caravan.

If SIA dormitory camping simply isn't for you, there are motels some miles from the HQ. However, this will be at your own expense in addition to the regular fee, and tour sponsors will not be responsible for missed meals or busses.

Roebling Chapter hosts happily admit that this won't be the standard SIA Fall Tour arrangement, but invite all members to visit today's Pine Barrens and to learn the story of its past through industrial archeology. Further details will be mailed to all SIA members.

Roebling Chapter

FALL TOUR ADDENDUM

Now that you're thinking about your stay at Camp Roebling, ponder this item from the June 24 Newburyport, Mass., Daily News. Ed.

WHAT'S IN THE NJ WOODS?

Mysterious roars and growls from the darkened woods have spurred residents of Woodbury, N.J., to form search parties and police to try to trap what may be a wild animal on the loose in the Pine Barrens. "They think this is just another one of those incidents like the Jersey Devil," said Carol Davis yesterday, referring to the mythical creature said to have stalked the Pinelands for generations. She and her husband, Allen, have been afraid to let their daughters play outside their Pittsgrove Township home, 15 miles south of Woodbury, after they heard the sounds and saw some type of large animal in the woods outside their home last week.

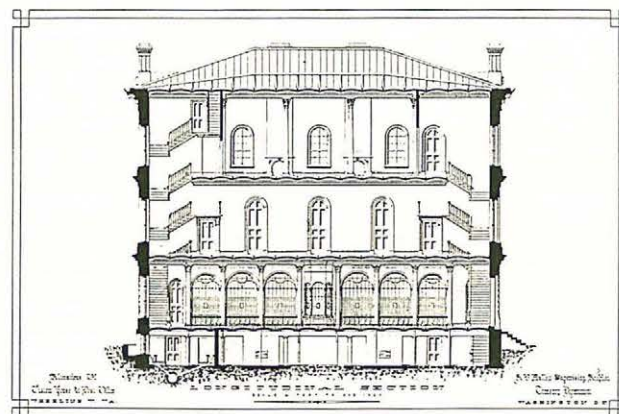
Asks Betsy Woodman [SIA], who submitted this: "Is 'it' SIA-friendly? Will 'it' be flushed from the puckerbrush by tour time? Will the first SIAer to spot 'it' win a fall-tour prize, such as a return trip to the PB?"

LOCAL CHAPTERS

ROEBLING (Greater N.Y. area). The spring and early summer saw little letup in the chapter's frenetic pace of tours, meetings, and festivals, according to the *RCSIA Newsletter*. In April, there was a cinema visit to the **Easton Canal Museum/Haines Mill**, with viewings of two films by Louis Buhler, founder of the Shade Gap Elec. Rwy. museum: Buhler in his furniture factory, c1943; and the Wanamie colliery and narrow-gauge plant RR in the 1960s. Two days later came the "First RCSIA Disco Tour" in The Tunnel, a "spectacular adaptive reuse of part of the 1891 Central Stores building of the Terminal Warehouse Co. on the North [Hudson] River waterfront of Manhattan. The disco occupies about two of the 25 interconnecting warehouse buildings in the full block, plus the double-track RR siding that goes through the middle of the complex and resembles somewhat a tall subway tunnel (hence the name)." So successful was this SIA "happy feet" event that it was repeated in May. Also in May was the **Southern Anthracite Region Tour**, including the Lehigh Coal & Navigation shops, Hauto tunnel, and St. Nicholas breaker. Following a breather for the obligatory SIA Annual Conf. and the Delaware Aqueduct reopening, chapter proceedings resumed with the **June Roebling Campout**, which was scheduled with a Shade Gap Trolley Museum

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WHEELING IN '88



As-built drawing (c1869) of U.S. Custom House, Wheeling, W.Va.

Plans are under way for the SIA 17th Annual Conference in Wheeling, W.Va., May 19-22, 1988. The conference coincides with 125th anniversary of the formation of the State of West Virginia, which took place in the city's U.S. Custom House. Appropriately, the Custom House will be the conference focal point and site of several activities. Also, it serves as the conference logo, via the image above.

Completed in 1859 after a design by A.B. Young, first architect of the U.S. Treasury, it was erected in what was then Wheeling, *Virginia*, and is significant for its very early use of wrought- and cast-iron framing. The section above is an as-built drawing completed c1869 by A.B. Mullett, who succeeded Young.

Proposals are being solicited for conference papers, particularly in two thematic areas. One is the study of Wheeling as a port of entry (the original reason for the building of the Custom House) and transportation hub, associated with the National Road, the Baltimore & Ohio RR, and the Ohio River headwaters. The other theme is 19th C iron architecture. Wheeling was an important iron center, as evidenced in the Custom House and in the great Wheeling Suspension Bridge [1849, 1854-56, 1871-72; HAER]. Papers in other areas also are welcome. Deadline for proposals is Nov. 1. Info.: Emory L. Kemp, Hist. of Sci. & Tech., Woodburn Hall Rm. G-14, W.Va. Univ., Morgantown WV 26506 (O: 304-293-3867, H: 304-599-4838).

visit and the East Broad Top RR Shops tour. Then came the military-IA trip to the **Intrepid Air Sea Space Museum**. Scheduled for Aug. are the Long Island Tour, the 2nd Annual N.Y. Harbor Cruise, and the Annual RCSIA Corn Roast at the Charles Emmerich farm.

NEWS OF MEMBERS

Patrick E. Martin is the new editor of the *SAS* [Society for Archaeological Sciences] *Newsletter*, which, like *SIAN*, includes notes, queries, publications of interest, and a calendar, but also "Laboratory Profiles" of archaeometric labs and institutions. Info.: SAS, Dept. of Social Sciences, Mich. Tech. U., Houghton MI 49931 (906-487-2070).

In an out-of-the-ordinary writing project, **Jeffrey A. Hess** has authored the complete text for the back of the official 1987 Minnesota Dept. of Trans. highway map. Citizens of the Lake Wobegon State had criticized recent editions which neglected text for touristy photo collages. Hess was asked to return the glove compartment guide's reverse side to its traditional narrative of state history and geography.

TOKEN IA FROM TROY



1-A

1-B

2-A

2-B

3-A

3-B

These c1830s trade tokens from Troy, N.Y., contributed by John S. Keabian [SIA], are a numismatic footnote to the SIA 16th Annual Conf., and among the few things left we haven't seen after two confs.

Figs. 1-A & 1-B are the recto and verso of the token issued by J.[acob] and C.[yrus] Peck, who described themselves as "Builders of cotton and Wool Machinery Generally." The verso features "Peck's Patent Tin Machines In Complete Setts Made at Troy N.Y." The tool shown on 1-B is a bar folder.

This token apparently is the sole record of J. & C. Peck as makers of tinsmith machines. In the Troy directories they are listed from 1833 to 1839 simply as "machinists." Is there any relationship between the Troy Pecks and the Conn. Pecks, who invented and manufactured tinner's machines?

The second token (2-A & 2-B), dated 1834, is from W.P. Haskins, 435 River St., Troy, who produced, planed, and "matched" plank, and also

sold "Ground Nova Scotia Plaster." On the verso is the famous (or infamous) "Woodworth Planing Machine," which was "made by S.B. Schenck Attleboro Mass." It was invented by William Woodworth, Hudson, N.Y. (not far downriver from Troy), and was patented Dec. 27, 1828. An improved version was patented Nov. 15, 1836 (patent no. 80). The 1828 patent was renewed July 8, 1845. J. Leander Bishop observed that "this patent is remarkable for the amount of litigation arising out of it for many years after, and for having been longer extended than for any other patent, as well as for the great profits it has yielded to its owners." The machine planed and tongued & grooved ("matched") planks for flooring and other work needing interlocking boards.

Figs. 3-A & 3-B display the trade token of N. Starbuck & Son, proprietors of the Troy Air Furnace, whose shop produced a variety of cast and machined products. An air furnace (aka "wind furnace") is one depending upon chimney draft, as distinct from a blast furnace. *J.S.K.*

CALENDAR

Sept. 10-13: SIA FALL TOUR, NEW JERSEY PINE BARRENS. See details under "SIA Affairs."

Sept. 11-13: Tour, "Engines & Museums of the Western Pa. Oil Region," Coolspring, Pa. area. Sponsored by Stationary Engine Society. Info.: Roger L. Robertson, SES, 3706 Emily St., Kensington MD 20895 (301-942-3507).*

Sept. 17-20: Annual Conf., Assn. for Preservation Technology, Victoria, B.C. Theme is "Wood & Water," focusing on the Pacific Northwest. Pre-conf. training sessions Sept. 14-16. Info.: APT '87 Conf. Office, Univ. of Victoria, POB 1700, Victoria BC Canada V8W 2Y2 (604-721-8465).

Oct. 9-12: Tour, "Steam Engines in the N.J. Area," Hackensack region. Sponsored by Stationary Engine Society. Info.: SES as above.*

Oct. 10: Working Symposium for Iron Masters, at Nassawango Furnace, near Snow Hill on Md.'s eastern shore. Co-sponsored by SIA. Info.: Ed Rutsch [SIA], Box 111, RD 3, Newton NJ (201-383-6355).*

Oct. 15-19: Annual convention, Assn. of Ry. Museums, Riverside, Calif. Info.: ARM, POB 3311, City of Industry CA 91744-0311.

Oct. 29-Nov. 1: Annual Meeting, Society for the History of Technology (SHOT), Raleigh, N.C. Program info.: Pamela E. Mack, Dept. of History, Clemson U., Clemson SC 29634-1507 (803-656-3153).

1988

MAY 19-22: SIA 17TH ANNUAL CONFERENCE, WHEELING, W.VA. Deadline for paper proposals is Nov. 1. Info.: Emory L. Kemp, Hist. of Sci. & Tech., Woodburn Hall Rm. G-14, W.Va. Univ., Morgantown WVA 25606 (O: 304-293-3867, H: 304-599-4838)*

*Find details on this event elsewhere in this issue.

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Submission deadlines: Feb. 1 (Spring), May 1 (Summer), Aug. 1 (Fall), and Nov. 1 (Winter).

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