

SIA Fall Tour, Florida, Nov. 5-8, 1992

# SIA discovers "steel in the sun"



TORRY ISLAND BRIDGE. Originally built in 1916, Florida's oldest manually operated Warren pony-truss swing bridge was set over the Lake Okeechobee rim canal in 1935. Charles Corbin operates the turm mechanism (*above*) while bridge fans ride the swinging span. A. Eisenpress photo (*above*) and J. Johnson photo (*right*).

In the SIA's never-ending quest to discover, document, and preserve the nation's industrial and engineering heritage, a contingent of the faithful "endured" the sun, sand, and surf of Florida last Nov. to enjoy a weekend IA tour hosted by the new Flagler Chapter.

The noted Bahia Mar Resort & Yachting Center in Fort Lauderdale was Fall Tour HQ. The weekend began with a tropical party on Thursday, Nov. 5, and a water taxi tour south along the Atlantic Intracoastal Waterway (1912) to Port Everglades (1928). The Port is the second largest petroleum storage facility in the U.S. The majority of imports are refined products: gasoline, aviation fuel, diesel, asphalt, and residential/industrial fuel. Over 1,000 tanker trucks leave the Port daily and commercial jet fuels are transferred via pipeline direct to three international airports. Crude oil originates in the Everglades and is transported via pipeline to the Port's storage tanks and then exported. Additional imports include steel, cement, newsprint, lumber, beer and ale, wine, tile and marble, meat and dairy products, vegetables, and coffee. The Port is home to a Florida Power & Light generating station, a cruise ship terminal, a county convention

center, and a U.S. Navy deepwater test facility.

Friday began with instant eyeopener—the Goodyear Airship Base (1979) in Pompano Beach. SIA tour veterans will recall the now-vacant 1929 Goodyear Airdock in Akron, Ohio, visited during the 1986 Annual Conf. [SIAN Fall 86:1], but this was the first opportunity to examine a modern blimp up close and personal. Secured to the runway was the Stars & Stripes (1992), the company's state-of-the-art aerial ambassador. The blimp serves as a camera platform and is often viewed working above major sporting events. Typically one of the Goodyear blimps is in South Florida from Nov. to June. Eighty percent of the blimp's work is geared to promoting non-profit public-sector messages on its brilliant multicolor, computer-controlled display. The 8,000 colored lights flash messages, cartoons, and designs that can be read in the dark a mile away when the blimp is at an altitude of 1,000 ft.

Our next stop was the **Twenty Mile Bend Bridge** (NRelig.; 1937), one of the state's few swing, through-truss spans. Twenty Mile Bend is centrally located (and aptly named), 20 miles west of the Atlantic and 20 miles east of Lake Okeechobee. At this point the **West Palm Beach Canal** bends just



Above: The Stars & Stripes (1992) at the Goodyear Airship Base in Pompano Beach. J. Johnson photos.

Below: The airship's cabin interior. A. Eisenpress photo.



before its course turns due east. Just east of the bend, the South Florida Water Management District constructed the state's largest low-level **Pumping Station** (1955) to drain the lake during high water or backpump during low water.

At mid-morning, we encountered a dramatic landscape change as fields of sugarcane stretched to the horizon. We were joined by Barbara Miedema, public relations officer for the state's largest sugar mill. Over the next four hours, she described this important industry as we drove through the vast reclaimed agricultural region that rings the southern edge of Lake Okeechobee. Our bus navigated the narrow dirt roads and we witnessed a field of mature sugarcane put to the torch to rid it of excess vegetation. Then we took a photo stop to watch mechanical cane-harvesting. Commercial sugarcane, planted from stalk cuttings, grows to 10-20 ft., maturing in 10-12 mos. Three to five crops usually are obtained from





each initial planting.

We continued on toward Belle Glade. The **Torry Island Bridge** (1916), the state's oldest manually operated Warren pony-truss swing bridge, was set over the Lake Okeechobee rim canal in 1935. As we feasted on freshwater catfish, bridge tender Charles Corbin demonstrated the simplicity of swing-bridge operation. To the delight of us spectators, a few bridge fanatics rode on the span as it was opened for passing boats. This bridge provides the only vehicle access to Slim's Fish Camp and world-class bass fishing. Lake Okeechobee, Florida's largest body of fresh water, is surrounded by the Herbert Hoover Dike (1932-38), built by the U.S. Army Corps of Engineers and the largest civil engineering project in South Florida.

The highlight of the Fri. tour was the large **Glades Sugar House** (1962), owned and operated by the **Sugar Cane Growers Cooperative of Florida** in Belle Glade. During the harvest season the mill operates around the clock for five months, processing 1,000 trailers of cane daily. The process begins with the separation of the juice from the stalk. Steamturbine-driven knives shred the stalks, which then pass through a series of large mills that squeeze out the juice leaving *bagasse*, a fibrous residue. In multistage evaporators, where the cane juice is heated and clarified, most of the water is removed leaving a thick and syrupy liquid. The syrup is seeded with small sugar crystals in a vacuum pan and the

PENNSUCO CEMENT CO., Dade County. Below left: The rotating cement kiln. A. Eisenpress photo.

Below right: Tourers peer into the hot kiln. J. Johnson photo. Below far left: The mammoth dragline. A. Eisenpress photo.





Burning a field of mature sugarcane to rid it of excess vegetation. A. Eisenpress photo.

resulting raw sugar is separated from the molasses. Mountains of raw sugar are stored in warehouses prior to final white-sugar processing in refineries. The molasses is trucked to storage tanks at the Port of Palm Beach, and the by-product *bagasse* is used as fuel for the adjacent steam generating plant. Throughout the tour the air was scented with the pungent smell of the cane.

We next travelled south into Dade County to the **Pennsuco Cement Co.** (1962), now operated by Tarmac Florida, Inc. During the plant tour we peered into a cement kiln and climbed around the exterior of the 580-ft.-long rotating kiln and stopped for photos at a mammoth electrically powered dragline.

On our return to **Bahia Mar**, everyone had an opportunity to explore local restaurants or experience the sights and sounds of the Riverwalk Blues Festival in downtown Fort Lauderdale.

Bright and early Sat. morning, we headed for Route A1A south to Miami Beach. We walked five blocks along Ocean Drive to photograph the historic hotels of the now-famous **Miami Beach Art Deco District** [NR]. This 125-block area includes architecturally significant buildings in Art Deco, Art Moderne, and Mediterranean Revival styles, from the 1920s through the 1940s.

We departed from **Bayside** in downtown Miami on the *Island Queen* for a three-hour tour of the working **Miami River** and the **Port of Miami**. Most sightseers were surprised to learn that the river has been the focus of fishing, shipbuilding, and international commerce since the 1890s. The

Warehouse storage of bulk raw sugar, prior to final white-sugar processing in refineries. A. Eisenpress photo.



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SUGARCANE PROCESSING.

Above: Mechanical cane harvesters. J. Johnson photo (top) & G. Weinstein photo (above).

Below: Vacuum pans and evaporators in the Glades Sugar House, Belle Glade. J. Johnson photo.



Finlay Matheson's Burrell Gold Medal tractor (1916) steams along under the steady hand of Pat Malone, G. Weinstein nhoto.



Henry M. Flagler artifacts (& chap. icons) include private car No. 91, The Rambler (above), built c1886 by Jackson & Sharp, Wilmington, Del., and his 1901 Palm Beach mansion, Whitehall (below), now the Flagler Museum. J. Johnson photos.



Port is the world's cruise-ship capital, home to 20 ships ranking among the world's largest. Six container cranes punctuate the skyline of Biscayne Bay. Historian Paul George shared his extensive Miami scholarship and personal anecdotes of growing up in the "Magic City."

At a surprise lunch stop, Finlay Matheson [SIA] hosted a tour of his private collection of steam engines and historic machinery, while treating the group to "Cuban sandwiches." Matheson's IA passion is revealed in his museum-quality restorations, including the operating I&E Greenwald Steam Engine (NR; 1906). A few lucky members got to drive his Burrell Gold Medal steam tractor (1916), and machine specialists were impressed with The Engineerium.

After an unscheduled drive to witness damage caused by Hurricane Andrew, we spent the remainder of the afternoon at the Historical Museum of Southern Florida viewing the finest permanent exhibit of local history and a temporary exhibit, "First Encounters: Spanish Exploration in the Caribbean and the Southeastern U.S., 1492-1570." The evening included a buffet dinner and dancing at Desparado, a popular Fort Lauderdale country and western club.

On Sun. morning, Scott Lewis and Donald Curl, authorities on South Florida architecture and history, conducted an optional tour to Palm Beach. The group viewed the landmark Mediterranean Revival style mansions and lunched on the veranda of Whitehall (1901), the Henry Morrison Flagler Museum. Sandy Norman guided another group across the state to the Ted Smallwood Store (1917) in Chokoloskee, then on an air-boat and walking tour of Everglades Natl. Park.

Formed in anticipation of the Fall Tour, the Flagler Chapter is dedicated to the engineers who first set steel in the sun. Chapter President John P. Johnson planned and organized the event, with the assistance of charter members Sandy Norman, Finlay Matheson, Cindy Strasser, Scott Lewis, John Brown, and Robert and Winifred Talbot. The tour guide, Steel in the Sun (22 pp.), was researched and written by Johnson as an agency project of the Historic Palm Beach County Preservation Board. Copies are available for \$5 ppd. from Flagler Chapter SIA, POB 1952, Delray Beach FL 33447 (407-395-6771).



Photographer Gerry Weinstein captured this disturbing view of buzzards roosting atop the Dade County Courthouse.



## Steel-mill recording at Bethlehem, Fairless plants

The Bethlehem plant of the Bethlehem Steel Corp. and the Fairless plant of the USX Corp. are the focus of an intensive recording effort by a team from the Hugh Moore Historical Park & Museums, Inc. (HMHPM), of Easton, Pa. The project will photographically document all extant structures and manufacturing processes at these plants; remove for preservation historical photographs, maps, and engineering drawings; and gather representative artifacts to illustrate workers' activities.

The team is directed by Lance E. Metz [SIA], HMHPM historian. It includes photographers Joseph Elliott and Henry Schmidt of Muhlenberg College in Allentown, Pa. Much of the funding is provided by Local History Grants from the Pa. Historical & Museum Commn.

Work at the Bethlehem plant during 1992-93 focuses on the blast-furnace and basic-oxygen-furnace operations, both of which are scheduled to be permanently shut down during 1993-94. The teams already have recorded the plant's forging operations, ore RR, machine shops, and heat-treatment facilities. Some of this work was completed as part of a Historic American Engineering Record project in 1990 and will be continued in summer 1993 under the Rebuild America program of the Clinton administration. During fall 1992 the team completed recording of the blast furnaces, coke works, and open-hearth furnaces of the USX Fairless plant. All of these

Above: Blowing-engine house, Bethlehem Steel Co., South Bethlehem Pa. Joseph E.B. Elliott photo, 1990, for Hugh Moore Historical Park & Museums.

facilities are scheduled for demolition in 1992-93.

All materials produced by the team are cataloged and preserved at the HMHPM Museum Support Center in Easton, where HMHPM continues its efforts to establish a nationally oriented iron and steel research center and seeks the donation of books, articles, photographs, engineering drawings, and artifacts associated with America's iron and steel plants. For more info., contact HMHPM, POB 877, Easton PA 18044-0877 (215-250-6703).

Below: Tapping an open-hearth furnace at the Fairless Works, USX Corp. Historic image courtesy Hugh Moore Historical Park & Museums.



# Using RR valuation records for research

The "valuation records" created by the Interstate Commerce Commission (ICC) provide detailed documentation on U.S. railroads from their beginning until the 1960s. Most records were created 1915-20 by the ICC and RR employees, who undertook a massive project to inventory almost every aspect of the existing American rail system.

Now in the National Archives, these records total about 11,000 cu.ft. and are in two parts: the basic valuation records and the period updates. The basic records for 1915-20 provide info. on site-specific RR facilities, RR land and its acquisition, adjacent land, and the financial history of the RR from its earliest operations to the date of basic valuation. The updates give info. on subsequent changes in facilities and finances to the 1960s. In addition, the records will allow a researcher to determine the specific rolling stock held by a line from the original valuation date to the 1960s.

The general subject categories of the records are land, engineering, and accounting reports and supporting documentation. Some of the major, IA-related records include:

*Engineering Field Notes*. Notes concerning grading, ballast, ties, track, and all RR structures. The three main types of notes are the "chaining" notes, the bridge & building notes, and inventories of furnishings. The bridge & building notes, when high quality, contain detailed descriptions of structures, frequently supplemented by photos and blueprints. The chaining notes detail every mile of RR, providing detailed descriptions of the right-of-way, giving to the nearest foot the location of crossings, culverts, bridges, and the intersection of RR trackage.

The quality of the engineering notes varies with the caliber of the ICC field party conducting the survey of the particular road. An outstanding example of high-quality engineering notes is the collection of excellent architectural drawings in the building notes for the Delaware & Hudson RR, in particular the Cooperstown, N.Y., passenger station. Other examples are the dozens of photos of depots and stations in the building notes of the Florida East Coast Rwy.

*Equipment & Machinery Schedules.* Schedules were submitted by RRs as inventories of their holdings of various types of equipment, including steam locomotives and rolling stock. Schedules exist for some smaller RRs, mostly in the southeastern U.S.

*Detailed Land Maps.* Usually blueprints, 25 x 54 ins., which include many engineering details, such as locations of buildings and bridges. The maps of the PRR yard in Pittsburgh are good examples of the rich detail available. These show the track plans of the main line and yard sidings, the turntable and roundhouse, yard structures, and industries adjacent to the yard.

*Statements about RRs.* Usually corporate organization charts, but sometimes including a narrative history.

There are various categories, including updates and summaries. Most of these records are interrelated. For example, the final land reports serve as a finding aid to info. found in the engineering records. The name of the RR in 1915-20 and the town or geographical area in question are necessary for access to the records. For additional info. contact David Pfeiffer, Archivist, Suitland Reference Branch (NNRR), NARS, Wash. DC 20409 (301-763-7410).

[NOTE: William D. Edson (10820 Gainesboro Rd., Potomac MD 20854) has excerpted a considerable amount of material from the equipment inventories and has copies covering most RRs available at nominal cost. *H.H.H.*]



# QUERIES

**LINCOLN TRAIN QUERY.** Wayne Wesolowski [SIA], a chemistry professor who also is a skilled RR modeler, is leading a project at Illinois Benedictine College to model the Abraham Lincoln funeral train as part of a traveling exhibit that will follow the original funeral-train route on its 130th anniversary in 1995. It will include stops from Wash., D.C., through Md., Pa., N.Y., Ohio, and Ind., concluding in Spring-field, Ill.

According to Wesolowski, the president's private car, *The* United States, represented in 1865 the leading edge of technology, with a pair of complex, 8-wheel trucks designed to accommodate both standard gauge and the varying gauges in the South up to five feet. His model has 725 scratchbuilt parts in the trucks alone. Curiously, Lincoln never used the car in life and it served him only as a funeral coach—both for his son and for himself. In addition, Wesolowski is modeling the locomotive Nashville, which was one of a handful constructed in 1852 by the Cuyahoga Steam Furnace Co. of Cleveland, Ohio. A full set of engineering drawings was prepared from historic photographs by John Haines of Benicia, Calif., a builder of miniature steam-locomotives.

As part of the project research, Wesolowski seeks the following:

—"We're looking for the family of Myron Lamson, who modified the car in Wash., D.C., and then had his picture taken with it. According to the B&O employees' magazine in 1928, they still had a glass-plate negative.

—"The President's car was sold by the Union Pacific to the Colorado Central around 1870, but we've found no mention of it anywhere west. It was returned to St. Louis as part of the Lincoln Pavilion at the 1904 World's Fair. We've yet to find a single photo or even contemporary description of the car.

—"The car ended its life in a 1911 fire in Minneapolis. A newspaper account had an unnamed Univ. of Minnesota professor owning a tie bar made from wood from the car, but this and other car memorabilia have not been located.

—"We're seeking information about other locomotives built by Cuyahoga around 1850."

Contact Wesolowski at I.B. College, 5700 College Rd., Lisle IL 60532 (708-960-1500).



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### GENERAL

Astragal Press Books on Early Tools, Trades and Technology. Catalog (1992-1993), The Press (POB 239, Mendham NJ 07945-0239), 1992. 30p, illus. Gratis. Incl. works on antique tools, misc. trades, mechanical movements, Diderot Encyc. of Trades & Industry, building & architecture, instruments, etc.

Greg Brick, **"The Rediscovery of Minnesota's First Commercial Cave."** In *NSS News* 50, July 1992, p182-183. (National Speleological Soc., Cave Ave., Huntsville AL 35810). Cave / tunnel in St. Anthony Falls Flour milling district, ca.1864.

Environment Canada, **Research Publications Catalogue**. Parks Service, Environment Canada (1600 Liverpool Court, Ottawa, Ontario, Canada K1A OH3), 1992. 43p, illus. Gratis. Incl. works on structure; canals (Ottawa R., Cambly, Richelieu R., Sault); fisheries, whaling, and sealing; glass (bottles, glass glossary) and other artifacts; an ironworks (Quebec, from 1667); textiles. Occasional papers (series now discontinued; 50% off) incl. similar, plus a lighthouse book.

L. D. Hall & T. A. Carpenter, **"Magnetic Resonance Imaging: A New Window into Industrial Processing."** In *Magnetic Resonance Imaging* 10, 1992, p.713-21. Inc. petrogeology, agriculture, polymers and polymer-composites, and pharmaceuticals.

Elizabeth Faue, Community of Suffering and Struggle: Women, Men and the Labor Movement in Minneapolis, 1915-1945. U. of N. C. Pr. (Chapel Hill NC), 1991. 295p. \$40/15 pap. Incl. telephone strike of 1919. Rev.: Minnesota History 53, Fall 1992.

Michael S. Killel & Thomas E. Mosmiller (eds.), Against the Tide; Pro-Feminist Men in the United States, 1776-1990; A Documentary History. 521p., bibliog. Incl. section of "Women in the Trades," p.165-183.

Anne L. McDonald, **Feminine Ingenuity: Women & Invention in America.** Ballantine (NY), 1992. 514p., illus., selected list of patents, notes, bibliog., index.

Kathleen H. Ochs, "The Rise of American Mining Engineers: A Case Study of the Colorado School of Mines." In T&C 33, April 1992, p278-301.

#### STRUCTURE

Nina M. Archabal, "The New Minnesota History Center: Looking Back at the Journey." Humongous 6-level 427,000 sq. ft. L-shaped building, incl. 44,000 sq. ft. of exhibit space. New home of many collections of IA interest, incl. 12,000 cu. ft. of GN and NP rwy. records, flour milling materials, etc., etc.

George Bellows: 3 articles in Timeline 9, No. 5-6, Oct.-Dec. 1992:

Bellows (1882-1925), Ohio artist; incl. urban construction and structures, river and riverfront scenes. Illus., incl. covers; much color, incl. "Excavation at Night" [NY Penn Station], 1908. Avail.: Ohio Historical Soc., 1982 Velma Ave., Columbus OH 43211.

James M. Keny, "Brief Garland: A Life of George Bellows," pp.2-39.

Nannette V. Maciejunes, "Master of the Stone: the Lithography of George Bellows," pp.40-67.

David A. Simmons, **"Hometown: Bellows's Columbus,"** pp.68-78. Columbus, Ohio, structures, c.1880s-1920s. Bellows bibliog., pp.80.

David Berreby, **"The Great Bridge Controversy."** In *Discover* 13, Feb. 1992, p.26-33. Mathematician P. Joseph McKenna's nonlinear analysis of suspension bridge oscillation, including the contention that the Tacoma Narrows bridge collapse of 1940 was not due to simple resonance. McKenna suggests that nonlinear chaos mathematics may apply to many oscillating structures, including ships and space stations. McKenna's analysis in challenged by engineering professors Robert H. Scanlan and Yusuf Billah and consulting bridge engineer Mark Ketchum. The article cites an article by McKenna and Lazer in SIAM Review [journal of the Society for Industrial and Applied Mathematics]; an article by Scanlan and Billah in the American Journal of Physics "last year" [1991?], which gives "self-excitation" [involving a feedback loop] as the reason for the collapse of the Tacoma Narrows bridge; and an "fierce" attack by McKenna on the Scanlan-Billah paper in a letter to the American Journal of Physics. See also I. Peterson article, below [*Science News*, June 2, 1990].

Bruce Clouette & Matt Roth, **Connecticut's Historic Highway Bridges.** Connecticut Dept. of Transportation, 1991. 101p., illus., maps, bibliog.

Bruce Clouette & Matt Roth, **Historic Highway Bridges of Rhode** Island. Rhode Island Dept. of Transportation, 1990. 72p., illus., maps, bibliog.

Lary M. Dilsaver & Craig E. Colten (eds.), **The American Environment: Historical Geographic Interpretations of Impact and Policy.** Bowman & Littlefield (4720 Boston Way, Lanham MD 20706; 800-462-6420), 1992. 271p. \$60/23 pap. Incl. literature review; cotton belt; coastal changes; Richard V. Francaviglia, "Mining and Landscape Transformation;" Craig Colten, "Illinois River Pollution Control, 1900-1970."

Feasibility and Planning Study: The Historic Mills of Norwich, Conn. City of Norwich, Planning Dept. (Norwich CT), 1992. Study conducted by Historic Neighborhood Preservation Program, Inc. (Stamford CT; Renee Kahn, Nils Kerschus, and J. J. Loglisci) and Elena Kalman Architects (Stamford CT; Elena Kalman, principal, and L. Wolfson, draftsperson.) 91 large-format pp., maps, illus., bibliog., appendix. Incl. historic overview, architectural overview, re-use and preservation issues, analysis of 12 (mostly textile) sites.

John S. Garner (ed.), **The Company Town: Architecture and Society in the Early Industrial Age.** Oxford Univ. Pr., 1992. 256p., illus. \$40. Describes the concurrent development and building of selected towns in Europe and the Americas, incl. both factories and worker housing.

Jan Jennings & Herbert Gottfried, American Vernacular Interior Architecture, 1870-1940. Iowa St. Univ. Pr. (Ames IA), 1993. 464p., 290 illus. \$30 pap. Orig. published by Van Nostrand Reinhold. The related American Vernacular Design, 1870-1940 (Gottfried & Jennings, 1988) also is available from the same source (\$22 pap.).

Joseph C. Jones, America's Iceman: An Illustrative History of the U.S. Natural Ice Industry, 1665-1925. Jobeco Books (10240 Greentree Court, Olathe KS 66061). \$20 (\$21.95 ppd) pap. [reprint?]. Philip Kaplan & Andy Saunders, Little Friends: the Fighter Pilot Experience in World War II England. Random House (NY), 1991. 256p, illus. (many color), index. \$50. Incl. related structures, aircraft; photos of artifacts, mss.

Larry Millett, "Ghost of the Gateway: the Metropolitan Building, Minneapolis." In Minnesota History 53, Fall 1992, pl12-15. Completed 1890, the 12-story sandstone building was razed in 1961 after one of Minnesota's first preservation battles, part of the demolition of nearly 200 buildings in 17 square blocks — 40% of the city's central business district.

Larry Millett, **Lost Twin Cities**. Minn. Historical Soc. Pr. (St. Paul MN), 1992. 368p, illus., index. \$50/30 pap. Architectural and social history of Minneapolis and St. Paul, Minn., 19th & 20th C.

Ivars Peterson, **"Rock and Roll Bridge."** In *Science News* 137, June 2, 1990, p344-46. News note on Joseph McKenna's nonlinear analysis of oscillating structures. See also the Berreby entry, above [*Discover*, Feb. 1992].

Stephen Wiltshire, **Floating Gities.** Summit Books (NY), 1991. 147 pp. Illus., some color. Line drawings of buildings in Venice, Amsterdam, Moscow, and Leningrad, by a 16-year-old autistic artist; incl. Amsterdam RR station, bascule bridge over R. Neva at Leningrad.

#### TRANSPORTATION

Sy Adler, "The Transformation of the Pacific Electric Railway: Bradford Snell, Roger Rabbit and the Politics of Transportation in Los Angeles." In Urban Affairs Q. 27, Sept. 1991), p51-86.

Robert Aldag, "Steam vs. Diesel Locomotives." In *RRH* 167, Autumn 1992, p148-57. The author's 1942 report to the Burlington [CB&Q], with a modern afterward.

Barry C. Anderson, **Lifeline to the Yukon; A History of Yukon River Navigation.** Superior Publishing Co. (Seattle WA), 1983. 152 pp., illus., index. Incl. riverboats, gold mining.

Lindsey Ashby & Claude Wiatrowski, "Rebirth of the Georgetown Loop Railroad." In Journal of the West 31, Jan. 1992, p69-78.

R. J. Barton, "Dining Railway Style." In Journal of the West 31, Jan. 1992, p31-35.

William E. Botkin, "Pushing the Two-foot Gauge to the Limit." In Locomotive & Railway Preservation, Issue 37, Sept.-Oct. 1992, p30-43. Former Natal Railways line from Harding to Port Shepstone, 75 mi., closed in 1986 but since 1987 operated by the Port Shepstone & Alfred County Rwy.; increased operational efficiencies, incl. heavier loadings and conversion of some of its Garrat steam locomotives to gas producers.

Russell Bourne, Floating West: The Erie and Other American Canals. Norton (NY), 1992. 232p, illus., bibliog., index. \$25.

Gordon Chappell, **"By Rail to the Rim of Death Valley: Construction of the Death Valley Railroad."** In *Journal of the West* 31, Jan. 1992, p.10-19.

O. R. Cummings, **Trolleys to Beaver Lake: A History of the Chester** and Derry Railroad Assn., 1891-1928. Harold E. Cox (80 Virginia Terrace, Forty Fort PA 18704), 1990. 32p. \$6 pap. New England, last in operation 1928. Rev.: *RRH* 167, Autumn 1992, p.173-74.

Clarence B. Davis & Kenneth E. Wilburn, Jr., eds., with Ronald E. Robinson. **Railway Imperialism**. Greenwood Pr. (Westport CT), 1991. xix,225p. \$43. Rev.: *J. of Economic History* 52, Sept. 1992, p.750-51.

Thomas W. Dixon, Jr., **Chesapeake & Ohio Standard Structures**. C&O Historical Soc. (POB 79, Clifton Forge VA 23322), 1991. 64p. \$14 pap. Rev.: *RRH* 167, Autumn 1992, p170-171.

Gary W. Dolzall & Mike Danneman, **The Spirit of Railroading**. Kalmbach Publishing (POB 1612, Waukesha WI 53187), 1991. 194p. \$45. Photos worth looking at by the experienced; otherwise a good book to introduce RRing to "non-believers." Rev.: *RRH* 167, Autumn 1992, p176-177.

Dick Dorn, **"Remembering the Oregon Loggers."** In *Pacific RailNews*, No. 347, Oct. 1992, p14-19. Incl. Weyerhaeuser operations; Oregon & Northwestern Railroad; Oregon California & Eastern.

[Ghost Ships of Lake Michigan.] Three VHS videos with historical photos, etc., as well as contemporary underwater footage of the wrecks; avail. from Southport Video (P.O. Box 862, Kenosha WI 53141-0862); all three \$70, or \$30 ea.: (1) "Rouse Simmons: The Christmas Tree Ship" (freighter, lost 1912), 35 mins.; "Wreck of the Car Ferry Milwaukee" (1929), 45 mins.; "S.S. Wisconsin" (passenger steamer, lost 1929), 50 min.

Joy Clare Gilbert, **St. Clair Tunnel: Rails Beneath the River**. Boston Mills Pr. (132 Main St., Erin Ont. NOB 1TO), 1991. 96p. \$15. St. Clair R., U.S. / Canada, Lake Huron / Lake Erie; incl. 1891 opening, 0-10-0T and diesel locomotives. Rev.: RRH 167, Autumn 1992, p166-167.

H. Roger Grant (ed.), **Brownie the Boomer: The Life of Charles P. Brown, an American Rairoader**. Northern Ill. Univ. (DeKalb IL), 1991. 279p. \$24. Rev.: *RRH* 167, Autumn 1992, p163-64. B's reminiscence (1928) of his life as a hobo, fireman, brakeman, and swtichman.

Robert L. Gunnarsson, **The Story of the Northern Central Railway**. Greenberg Publishing Co. (7566 Main St., Sykesville MD 21784), 1991. 189p. \$40. Pennsy predecessor in Pa. anthracite region, mostly 1828-1914. Rev.: *RRH* 167, Autumn 1992, p164-165.

Thomas Swiftwater Hahn & Emory L. Kemp, **The Swiftwater Ganal: Its History and Preservation.** West Va. Univ. Pr., 1992. 76p., illus., glossary. \$15 ppd. from the American Canal & Transportation Center, P.O. Box 310, Shepherdstown WV 25443. Rev.: *American Canals*, Spring 1992?.

Adolf Hungry Wolf, **Ganadian Sunset: A Farewell Look at America's Last Great Train**. Trans-Anglo Bks. (distr. Pentrex, 2652 E. Walnut St., Pasadena CA 91109), 1991. 112p. \$55. CP's *Canadian* passenger train, 1954-1990; little on prairie portion of run. Rev.: *RRH* 167, Autumn 1992, p167-68.

Peter Jehrio, **Niagara By Rail—I.** Coldwaters Pr. (POB 90, Boalsburg PA 16827-0090), 1991. 24p. \$8.45 ppd. Buffalo, NY vic. RRs. Rev.: *RRH* 167, Autumn 1992, p166.

Al Kilminster, **"The Little Streetcar that Could."** In Locomotive & Railway Preservation, Issue 37, Sept.-Oct. 1992, p28-29. Birney Safety Car #21 (built by Amer. Car & Foundry, 1919) and rail line (NR), restored and operated by the Fort Collins (Colo.) Municipal Rwy. Soc., amid local oppostion.

Wayne Kuchinsky, "Grand Island." In *Pacific RailNews*, No. 347, Oct. 1992, p34-35. Grand Island, Neb.; UP/BN operations.

Fritz Lehmann, "The Phenix Foundry of Saint John N.B. and George Fleming, Locomotive Builder. Part 1 (1832-1868). In Canadian Rail, Sept.-Oct. 1992, p147-162.

E. R. Lewis, "The 14-inch Naval Railway Batteries." In Naval History 5, No. 1, 1991, p41-45.

Edward L. Lewis, **American Shortline Railway Guide**. 4th edition. Kalmbach Publishing (POB 1612, Waukesha WI 53187), 1991. 320p. \$19 pap. Also incl. regional RRs. Rev.: *RRH* 167, Autumn 1992, p176.

Betty Irean Loeb, "Altoona—A City Built on Rails of Steel." In Pennsylvania Magazine 14, June 1992, p6-8.

Locomotive & Railway Preservation, Issue 37, Sept.-Oct. 1992, includes pres. news (p6-21, 61-65; report on deterioration of Keene, N.H., Boston & Maine RR shops to bankrupt mall, p6-11), ads for books, videos, excursion RRs, etc., as well as articles noted elsewhere. L&RP is now owned by Interurban Press (POB 6128, Glendale CA 91225-0128; subscriptions \$21.50/yr., 6 issues; editorial submissions continue to L&RP, POB 95, Richmond VT 05477).

Locomotive & Railway Preservation, **27th Annual Steam Passenger** Service Directory. (L&RP, POB 95, Richmond VT 05477), 1992. 352p. \$10 pap. Incl. 284 sites in the U.S. and 24 in Canada. Incl. discount coupons. Rev.: *RRH* 167, Autumn 1992, p175.

#### OF MORE THAN RAILROAD INTEREST

Robert C. Post, "Guest Editorial: Railroad History — What's the **Object?**" In *RRH*, no. 167, Autumn 1992, p6-11. Issues of accuracy and detail vs. theme, thesis, structure, etc.; objectivity; rosters and laundry lists (reference books) vs. synthesis; all of more general IA applicability.

John M. Wickre, **"Fractal Facts, the Information Implosion [sic], and the Orange-Packing Problem."** In preparation. This title is only partly whimsical. Yr. editor currently is attempting to address many of the issues discussed by Post (above), in relation to electronic access, zoomability of information, etc. Please call or write if you are interested, esp. if your view extends beyond the flat library citation mode to full text and full access to information in all its forms (I hate the world "multimedia" because it implies a separation of things that are one, and should be dealt with as such).

Abbreviations used in this PofI: AHR American Historical Review. BHR Business History Review. CRM [Cultural Resources Management], NPS, POB 37127, Wash. DC 20013-7127. JAH Journal of American History. RRH Railroad History

# NOTES & QUERIES

"FOR THE RECORD: Highlights from the BMI Research Center Collections," is an exhibit running through June 6, 1993, at the Baltimore Museum of Industry. It features documents and items from the Research Center collections, including illustrated trade catalogs, canning and bottling labels, ship plans, patents, and account books. The companies represented are among the most significant in Baltimore's history, such as Balt. Gas & Electric Co., Esskay, Glenn L. Martin, Bethlehem Steel, Poole & Hunt Foundry, Maryland Shipbuilding & Drydock Co., American Brewery, and others. Info.: BMI, 1415 Key Hwy., Balto. MD 21230 (410-727-4808).

**CINCINNATI DEMO IMMINENT.** The 1866 building of the Windisch-Muhlhauser Lion Brewery in Cincinnati, Ohio, is slated for demolition, according to a report from Susan Appel, who is pursuing her studies of Midwestern breweries with the support of the SIA/HAER Fellowship.

STEAM RR SHOP TOOLS GO TO 1225. Thanks to the generosity of CN North America, Project 1225 now owns a significant, working collection of major locomotive-shop machine tools. (Project 1225 of the Mich. State Trust for Rwy. Preservation is dedicated to the preservation and operation of Pere Marquette Rwy. steam locomotive 1225.) Until now, the tools in the Owosso, Mich. shop and yards remained the property of the Grand Trunk Western Rwy., a subsidiary of CNNA. The Mich. Dept. of Trans., which leases the Owosso yard from Grand Trunk for the use of the Tuscola & Saginaw Bay Rwy., has permitted Project 1225 to use the shop and tools. With these tools, Project volunteers can do almost any machining job that the engine will ever need, up to and including turning the 69-in. tires. Most of the machine tools date to World War I and were bought by the Ann Arbor RR expressly for repairing steam engines. While obsolete by modern standards, these tools are immensely valuable to anyone maintaining a steam locomotive. The newest in the lot is a 1945 turret lathe, which seems to have been purchased to mass-produce staybolts and which will be used for the same purpose today as work continues on 1225's firebox and thermic syphons. The apparently oldest tool is an undated steam hammer. So important is the machine-tool collection that project administrators say that if they were starting over, they'd acquire a machine shop first and then go looking for a locomotive to fix.

### Project 1225

**REPLICA OIL WELL TO PGH.** Quaker State Corp of Oil City, Pa., donated a replica of McClintock No. 1, the world's oldest continuously operating oil well, to the Pittsburgh History & Landmarks Foundation in Oct. The replica is an operating unit consisting of renovated equipment dating to the 19th cen. It includes an engine designed to run on natural gas, an eccentric power unit, rod line, pumping jack, and a period wooden oil tank. At Station Square in Pittsburgh [see *SIAN* Summer 1991:11], a simulated flow of oil into the tank is visible. The equipment was restored by students in the oil field operations class of the Venango County Area Vocational & Technical School in Oil City.

**OREGON HISTORIC BRIDGE TOUR.** Portland's Outdoor Recreation program is offering a day-long bus tour of the bridges built along the Oregon coast in the 1930s by Conde McCullough.

McCullough (1847-1946) spent 27 years as state bridge engineer and asst. state highway engineer and is noted for his visually pleasing engineering designs, according to historian of technology Donald C. Jackson [SIA]. The July 31, 1993, tour is sponsored by the City of Portland, Bureau of Parks & Recreation, and credit is available through the Univ. of Portland.

Tour guides will be: Sharon Wood [SIA], author of *The Portland Bridge Book* (Oregon Hist. Soc., Portland, 1989, \$13); Robert Hadlow, author of a new biography of McCullough and of "Oregon's Isaac Lee Patterson Memorial Bridge: The First Use of the Freyssinet Method of Concrete Construction in the U.S., 1932" (in *IA* 16, 1990, no. 2); and Walter Hart, a retired Oregon state bridge engineer.

Participants will walk through the 1,500-ton steel arch of the new Alsea Bay Bridge at Waldport and visit the adjacent \$400,000 Historic Alsea Bay Bridge Interpretive Center, where they can view a film of the demolition of the 1936 bridge.

The tour also will visit the Yaquina Bay Bridge at Newport and its unique \$12 million renovation. The three-year project, to be completed in 1995, uses "impressed current cathodic protection," employing zinc coating, computers, and a 12-volt current working together to prevent further corrosion of the 56-year-old bridge.

The tour costs \$59, which includes transportation and dinner on the Oregon coast. For additional info. & pre-registration contact Portland Bureau of Parks & Recreation, Rm. 1302, 1120 S.W. 5th, Portland OR 97204-1933 (503-796-5132).

**SOUTHERN ENGINEERS QUERY.** James J. Jacobsen wishes to communicate with others researching 19th-cen. Southern civil and mechanical engineers, and to locate sources in professional engineering archives and state archives. Contact him at 4215 Northwest Dr., Des Moines IA 50310 (day: 515-281-4358, eve: 515-274-3625).

AN ON-LINE FORUM FOR ARCHEOLOGISTS and related professions was proposed to the CompuServe info. service, to include topics of professional concern as well as political, legal, and PR aspects. Each subdiscipline and special interest would have an opportunity to form a separate bulletin board. To participate in planning or join an initial list of members, contact David L. Carlson on CompuServ 75206,1503. CompuServe can be reached through Internet or Bitnet.



### CONTRIBUTORS TO THIS ISSUE

Susan K. Appel, Champaign, Ill.; Ed Arata, Knight Foundry, Sutter Creek, Calif.; Aron Eisenpress, New York City; Herbert H. Harwood, Balto., Md.; John P. Johnson: Historic Palm Beach County Preservation Board; Leedom Lefferts, Drew Univ.; Lance Metz, Hugh Moore Historical Park & Museums, Easton, Pa.; Richard T. O'Connor, HABS/HAER, NPS, Homestead, Pa.; Frank Orr, Anacortes, Wash.; Bierce Riley, Morristown, N.J.; Charlene Roise, Hess Roise Historical Consultants, Minneapolis, Minn.; Terra Museum of American Art, Chicago; Gerry Weinstein, New York City; and Sharon M. Wood, Portland, Ore.

With thanks.

## Edward Lamson Henry's The Butler Hard Rubber Factory



Edward Lamson Henry (1841-1919), The Butler Hard Rubber Factory, 1882, oil on canvas, 27 3/8 x 55 1/4 ins. Daniel J. Terra Collection, 38.1984. Courtesy. Terra Museum of American Art, Chicago.

The sprawling structure in Edward Lamson Henry's (1841-1919) *The Butler Hard Rubber Factory* dominates the painting as it continues to dominate the village of Butler, located about 25 miles northwest of New York City. The "Mill," as it is known locally, produced hard rubber items such as telephone parts, pipe stems, combs, and jewelry in its early years. During World War II, consumer products were discontinued in favor of defense-related goods, mainly battery separators for submarines. In later years, it also made linings for railroad tankers and the Ace line of combs and bowling balls.

Established in 1869, Butler went through a series of ownerships and periods of financial instability until Richard Butler became a major stockholder and president in 1879. Never living near the mill, Butler presided over the operation from his New York office. The mill operated by the Goodyear process until 1888, when supt. William Kiel was granted an independent patent for vulcanizing rubber. The process involved chopping and mixing raw rubber with sulfur, followed by heating with pressurized steam.

Situated on a plain below a sharp bend in the Pequannock River, a 30-ft. fall provided 260 hp for the turbines that originally powered the processing equipment. The river was dammed and a mile-long raceway was created, which emptied into Kikeout Brook beyond the mill. The extension of the N.J. Midland Railroad (later the N.Y., Susquehanna & Western) to Butler linked the remote area with Jersey City and the Port of N.Y.

The wood frame structure in Henry's painting was gradually replaced by a complex of 3-story brick buildings around a central millyard where the square smokestack was located. In 1898 it became the American Hard Rubber Co. A fire in 1957 destroyed the company's wholly owned subsidiary, Pequannock Rubber Co., adjacent to the mill, which reclaimed rubber from tires and other soft rubber products. Shortly afterwards, the firm acquired a series of other manufacturing companies and the corporate name was changed to Amerace, reflecting the growing importance of the company's non-rubber businesses. Operations continued in Butler until 1974.

The painting was commissioned by Richard Butler in 1882 and depicts the expansion made under his early direction. The road in the foreground became Main Street. Commercial development has been limited to the near side of street since the railroad passes between mill and road. To the far right is the water box at end of the headrace, behind which, on the hill, is the supt.'s house. The central section of the mill (with the skylights) contains the vulcanizers. In the one-story section to the left of the main entrance, boxes were fabricated for shipment of goods. Beyond this, Henry shows the rail siding that led to the yard. On the far left is a meadow, later filled to create a public park.

Henry was born in Charleston, S.C., and moved to N.Y. as a child. He showed an early interest in drawing and studied first with a cousin who was an engraver and illustrator, then later at the Pa. Academy of the Fine Arts. At 19 he traveled to Europe and studied under Gustave Courbet, among others. The *Butler Hard Rubber Factory* shows Courbet's influence in the realistic treatment of the subject. Although slightly idealized, the geographic features such as Kikeout Mountain



AMERICAN HARD RUBBER CO., Butler, N.J.

Left: Postcard c1905, showing the southeast front with boxcars entering the center yard. The far right end faces Main St. Collection of Bierce Riley.

Right: Postcard c1915. Offices, opening onto Park Place, occupy the new section to the left of the tracks. Collection of Bierce Riley.

(behind the tallest stack) and other landforms are true. The inclusion of two trains and a horse-drawn wagon (center, beside two-story section) demonstrate Henry's interest in the evolution of transportation systems that is a more dominant theme in some of his other works.

The painting hung in the plant manager's office until 1974, when the mill was sold. The painting was restored in 1975, when it was appraised at \$5,000. A decade later it was sold to a dealer for approximately \$50,000 and is now in the Terra Museum of American Art in Chicago and has been reproduced on note cards.

Today, Butler's mill is a model of adaptive reuse, serving as office and commercial space. It continues to occupy most of the south side of Main Street and the west side of the park. Butler, N.J., evolved as a factory town, under the paternalistic influence of the company that provided financial support for the schools, churches, and civic organizations. While the economic dominance of the rubber industry has faded, the atmosphere of the company town is still strong and the structure is still referred to as simply the Mill. *B.R.* 

## NOTES

THE BLACKWELL ENCYCLOPEDIA OF INDUSTRIAL ARCHAEOLOGY is a major new volume on international IA, edited by Barrie Trinder, Historical Advisor to Ironbridge Museum (and guide-to-be for the fall 1993 SIA study tour to England & Wales). The advisory editors are Axel Fohl, David H. Shayt [SIA], Stuart Smith, Michael Stratton, and Robert M. Vogel [SIA]. This collection draws together the different strands of IA into a pioneering collection covering individual countries and their sites, and addresses the key issues of preservation and conservation in a set of theoretical entries. Most countries of the developed world are covered in great detail. Significant industrial pioneers, 1650-1950, have biographical entries. The volume is organized alphabetically, and comprises 800 pp., 100 photos, 50 line illus., and 30 maps. Avail. for \$120 + \$2.50 p&h (\$7 overseas; Canadian orders to include 7% GST) from Blackwell Publishers, 60 Depot Rd., Colchester VT 05446 (1-800-488-2665).

IA IN FILM & VIDEO. The Smithsonian Videohistory Collection was created between 1986 and 1992. Smithsonian scholars produced original video footage for 22 different projects reflecting the Institution's concern with the conduct of contemporary science and technology. Projects were recorded in offices, factories, quarries, laboratories, and observatories to capture site, process, artifacts, and interaction most effectively. VHS copies are provided for research and the videotape has been transcribed. At least two videos in the collection are of interest to *SIAN* readers, "Vermont Structural Slate" and the "Waltham Clock Co."

The Vermont Structural Slate Co. (VSS) in Fair Haven, Vt., was founded in 1859. As of 1989, it was one of 20 remaining U.S. companies that produced slate. The company operated several quarries, including the oldest active quarry in Vt., the Eureka, which opened for slate production in 1852. VSS has continued to use 19th-cen. machinery for most operations, although there have been attempts to upgrade with modern equipment. William Worthington [SIA] recorded VSS quarrying techniques in Oct. 1989 to document remaining 19th-cen. industrial techniques before the instiallation of modern equipment. For example, Worthington recorded the operation of the old cableway system (c1859-1989) that removed slate from the Eureka pit, as well as the more modern use of cranes, diesel shovels, and dump trucks. He also documented various methods and equipment for making slate shingles. The project resulted in three videotapes (4 hrs.) and 63 pages of transcripts.

The Waltham [Mass.] Clock Co., modern successor to the first American watch manufacturer, Waltham Watch Co., was founded in 1850. Waltham employees pioneered the machines and techniques necessary for the mass-production of pocket watches that made the company the dominant American watchmaker in the 19th cen. and early 20th. The electronics revolution, beginning in the 1970s, made mechanical watches and watchmakers nearly obsolete. At the time of the video recording in 1989, Waltham Clock was the last firm in the U.S. still producing mechanical watches. The recording was done by Carlene E. Stephens [SIA] and resulted in four videotapes (6 hrs. 20 mins) and 170 pages of transcripts.

The videos are described in *Guide to the Collections of the Smithsonian Videohistory Program* (Smithsonian Institution Archives, June 1992, 128 pp.). For copies of the guide and tape/transcript availability information, contact the SI Archives, MRC 414, Wash. DC 20560 (202-357-1420).

## "Sandpaper museum" opens in Two Harbors, Minn.



The John Dwan Office Building in Two Harbors, Minn., birthplace of Minnesota Mining & Manufacturing in 1902 and new home to the 3M "sandpaper museum." C. Roise photo.

It was two-for-one IA last June when the "sandpaper museum" (AKA 3M/Dwan Museum) was opened in the John Dwan Office Building [NR], marking the 90th anniversary of the internationally known manufacturer, 3M. The Dwan Office Building at 201 Waterfront Dr. in Two Harbors, Minn., on Lake Superior, was the site where the Minnesota Mining & Manufacturing Co. was incorporated in 1902. It served as the young firm's corporate HQ until 1916. In honor of the anniversary, the 3M Foundation gave a grant to the local Lake County Historical Society to purchase the building, renovate it, and establish a museum on the first floor.

3M was created to exploit what was thought to be a local deposit of corundum, a valuable industrial abrasive second in hardness only to diamonds. At the time, there were only two corundum mines in North America and one had opened in Ontario in 1900. In 1903-04, a crushing and screening operation was begun at nearby Crystal Bay, but sales were poor and, eventually, it turned out not to be corundum at all, but a low-grade anorthosite with no value as an abrasive. It didn't suit the sandpaper that 3M had begun producing in 1905 to exploit their now-phantom "corundum." They turned instead to imported garnet, attracted new capital from St. Paul, and moved their manufacturing plant to Duluth. When Duluth's damp lakeshore climate proved unsatisfactory for sandpaper manufacture, the operation was moved south to St. Paul, where it grew into the giant manufacturing complex it is today.

The museum occupies the first floor's several rooms and chronicles the company's business development, technology, and "household-name" products, such as Scotch tape and Post-it notes. Most important, however, the exhibit explores sandpaper: its components, development, manufacture, marketing, and uses. The basic concept of sandpaper is ancient, but it was not produced commercially in the U.S. until 1855.

Sandpaper is an everyday item usually taken for granted, but it has a surprising array of applications, from cleaning eggshells to finishing leather to polishing high-tech computer components, and it comes in an incredible array of abrasives, colors and textures. Examples of many are there for visitors to touch. A "sandpaper sculpture" is comprised of a variety



Panel on "Wetordry" paper in sandpaper exhibit. C. Roise photo.

of before-and-after mineral samples, along with examples of items needing abrading and forms in which sandpaper is used (disks, cones, belts, sheets). The announcement for the museum's opening was printed on the back of sheets of 3M sandpaper.

Additional information is available from the museum's developer, Charlene Roise of Hess Roise Historical Consultants, 405 Cedar Ave. S. #200, Minneapolis MN 55454 (612-338-1987; fax 338-2668).

## SITES

SADDLE-TREE PROJECT HITS ARCHIVAL GOLD. A major cache of documents was discovered at the former Ben Schroeder Saddle Tree Co. [HAER] in Madison, Ind. The complex is America's last 19th-cen. saddle-tree factory [see SIAN Fall 1991:3; a saddle tree is the internal wooden frame of a riding saddle]. A large cardboard container was found during preparations for a major inventory of the site's small-object collection. Inside the box were thousands of business documents, dating from 1879 to 1923, that had been carefully packed away in the 1920s. They provide a rare, detailed look at the Schroeders and the American saddle-tree industry. Among the finds: a series of letters describing an early 20th-cen. price-fixing scheme among U.S. saddle-tree manufacturers; purchase orders for machinery still in the factory; a complete record of a little-known glove-making venture; and fire-insurance policies that have shed light on the development of the factory operation.

Meanwhile, work continues on the inventory. The smallobject collection includes antique hand tools, patterns, saddletree parts, and a wide variety of related objects. The inventory project is funded by a matching grant from the Indiana Heritage Research Grant Program.

Recently a new exhibit, "Last in the Land: The Schroeder Saddletree Factory," opened at the Jefferson County Hist. Society, 615 West First St., in nearby Madison. It traces the history of the firm and is open 10-4 daily. Info.: John Staicer, Dir., Schroeder Saddle Tree Project, Historic Madison Foundation Inc., 500 West St., Madison IN 47250 (812-265-3426/2967).

## SITES & STRUCTURES



The Konrilakis tannery in Hermoupolis, a large establishment, which retains much of its machinery, including a gas engine by Petter of Yeovil, England, and a roller press by Georges Lutz-G Krempp of Paris. It specialized in making very hard leather for straps used in textile machines. Leather processing on a small scale continues in the works. M. Stratton photo.

ANCIENT INDUSTRIES OF HERMOUPOLIS. The City of Hermoupolis on the island of Syros flourished in the 19th cen. as a center for shipbuilding, leather working, lead processing, flour milling, and textiles-all industries established by refugees who fled to the island from places like Chios and Zmyrna (Izmir) during the Greek War of Independence in the 1820s. The Centre for Neohellenic Research in Athens is developing an ambitious program of research on the island's industries. Michael Stratton and Barrie Trinder of the Ironbridge Institute in England recently visited Hermoupolis to report on the significance of its industrial monuments, thus making it possible to add a substantial Greek element to the Institute's internationally oriented postgraduate program in IA. A version of their report will appear in Industrial Archaeology Review during 1993. The foundation is developing an oral history program and is anxious to trace former residents of Hermoupolis now living in the U.S. who recall its industries. If you can help in any way, contact Christine Agriantoni, who is reponsible for the program, at the Center for Neohellenic Research, Natl. Hellenic Research Foundation (NHRF), 48 Vas Constantinou Ave., Athens 115 35 Greece.

**OLDEST SALT MINE THREATENED.** The 700-year-old salt mine in Wieliczka, Poland is endangered by leaking water and slime, according to recent press reports. The flooding threatens huge galleries with sculptures carved by miners out of the salt. There are figures of saints along with sculptures depicting the mine's history and legends. The mine, first opened in 1285, is on UNESCO's list of World Cultural Heritage sites and is considered to be the world's oldest continuously active mine. Excavations were curtailed in 1980 to preserve the mine and recent salt production is derived from boiling brine that comes from permanent leaks. Flooding began last April when one of 270 known leaks suddenly increased from a trickle to a major flow. Water now has come into a fourth of the mine's nine levels and the lowest has been completely flooded.

**TEXTILE MUSEUM UNDERTAKES FULLING MILL EXHIBIT.** The Museum of American Textile History, at its new home in Lowell, Mass., has begun the installation of the

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rare 19th-cen. fulling stock that was acquired last year. It will be the centerpiece of the Museum's new cloth-finishing exhibit, along with a recently constructed replica 12-ft. undershot waterwheel. Visitors will see the wheel in motion, with a view through a floor opening to the lower level where the canal bordering the museum can be seen. The museum found prototypes for the construction of the wheel at two fulling mills built along the Blackstone River in Pawtucket, R.I., before 1809. Each of these mills was powered by a 12-ft. undershot wheel with 22-in. floats. The wheel was fabricated by Quinn Brothers (steelwork) and Northeast Windows & Doors (woodwork). Info.: MATH, 800 Massachusetts Ave., North Andover MA 01845 (508-686-0191).

### MATH Newsletter

"THE MILL & THE COMMUNITY" is a new, permanent exhibit on the people, buildings, and machines associated with the knitting industries of the Winnipesaukee River valley of N.H. Info.: Belknap Mill Society, Mill Plaza, Laconia NH 03246 (603-524-8813).

### ASME CITES GINACA PINEAPPLE PROCESSOR.

The Ginaca pineapple-processing machine, which spurred commercial pineapple production in Hawaii and helped James Dole build an international company, has been named the 37th Intl. Historic Mechanical Engineering Landmark by the American Society of Mechanical Engineers. In 1911, Dole hired Henry G. Ginaca, a draftsman and engine builder, to design a machine to automate the process of cutting, trimming, and coring pineapples. As fruit dropped through Ginaca's machine, a cylinder was cut to proper diameter, trimmed top and bottom, and cored. The pineapple cylinder then was processed and canned. The original 1919 Model Ginaca was designed with a rotating sizing knife and vertical turret connected by a curved transfer tube. Although it tripled production, a faster and more complex 1925 Model, designed by the Hawaiian Pineapple Co., increased capacity from 65 to 100 fruits per minute. About 60 Model 1925 Ginaca machines were built during the 1940s and most remain in use around the world. Info.: John Varrasi, ASME, 345 East 47th St., NY NY 10017 (212-705-8158).

# Knight Foundry reborn as living-history workshop

Nineteen ninety-two has been a busy year for the historic Knight Foundry [NR] in Sutter Creek, Amador County, Calif., as it struggled to evolve from a traditional manufacturing plant to an on-going historic-site. Its owners believe that the foundry is the only remaining water-powered foundry and machine shop in the U.S., having been in continuous operation since 1873. Economic conditions forced the foundry to close in spring 1991. Now a for-profit corporation and a non-profit association for the operation and preservation of the site have been formed: Historic Knight & Co., Ltd. The new group took over in July intending to return the foundry to operating status, both to supply existing customers so they would not be lost, and to begin developing new markets.

The Knight Foundry was designated a California Registered Historical Landmark in fall 1992 (Knight cast its own landmark plaque) and an application was prepared for recognition as an Intl. Mechanical Engineering Landmark by the American Society of Mechanical Engineers.

The Foundry was established by Samuel Knight and George Horne to provide heavy mining equipment and repair facilities for the local gold mines that were being driven ever deeper. At one time Amador County boasted some of the deepest and richest gold mines in North America, including the Kennery, Argonaut, and Central Eureka. In addition to mining equipment, Knight produced some of the first highpressure, high-efficiency, cast-iron water wheels to be used in Calif. Knight wheels and hydraulic controls were used at many of the first hydroelectric installations in the Calif. foothills and throughout the western U.S. The Knight Water Wheel was a forerunner of the Pelton Wheel, which was developed in a mining area north of Sutter Creek. Knight and Pelton were in direct competition in the 1880s and '90s. Samuel Knight held several mining-equipment patents dating from 1875 to 1899.

The central machine shop is powered by a 42-in. Knight turbine via line shafting. Large machine tools requiring more power or located in isolated areas are powered by individual Knight water motors. Many of the machine tools at the site were produced by the foundry for its own use. These include several face lathes up to 10 ft. in diam., a 7-ft. radial drill, and a 16-ft. planer. Other pieces of equipment were ordered from the East Coast and came around the Horn on sailing ships to Sutter Creek via San Francisco. At one time, Knight boasted the largest machine shop in the state outside San Francisco, a foundry with two coke-fired cupola furnaces, a pipe shop producing riveted pipe, and a complete blacksmith shop. The outbuildings that housed these operations remain on the site.

Work since July, in addition to filling existing and new orders, has included relining the melt zone of the cupola furnace. Currently, Knight is pouring every two to three weeks, producing items for commercial and industrial customers as well as items sold in the new gift shop, such as mortar and pestle sets, ingot molds, Knight name plates, bootjacks, trivets, and fireplace accessories.

Public tours of the foundry site have continued, and a selfguided, walking-tour booklet is available. It takes a visitor through 20 stations, each of which usually is a single foundry machine or operation, with technical operations carefully described.

There also are educational programs for adults and school groups, particularly the Industrial Living History Work-

**shop**. Participants may pursue projects in the foundry, machine shop, and blacksmith shop. The first three-day workshop is scheduled for June 4-6, 1993, and is limited to 20 students. The first day includes an overview of 19th-cen. manufacturing processes and a site tour. The second day is devoted to intensive sessions in the three shops. These continue on the third day, concluding with the cupola furnace preparation and pour. The workshop fee is \$350.

For information about the Knight Foundry operation, contact Ed Arata, Historic Knight & Co., Ltd., POB 158, Sutter Creek CA 95685 (209-267-5543).



Seemingly endless line of steam tractors at the 1991 Western Minn. Steam Threshers Reunion in Rollag. R. Frame photo.

**REPORT FROM ROLLAG, A "CASE" STUDY.** Writes Francis A. Orr [SIA] of Fidalgo Enterprises ("in support of recreational engineering"), Anacortes, Wash.:

"In spite of some unwanted rain on Labor Day 1992, the 150th Anniversary Exposition of the J.I. Case Co. at the Western Minnesota Steam Threshers Reunion, Rollag, Minn., was a complete success. I have been told that attendance was around 70,000. The show was opened by Helen Case Brigham, great-granddaughter of Jerome Increase Case, blowing the whistle late of the Case factory. She was assisted in this, and in the speeches, by an official from the Case Co.

"The WMSTR Show is the second-largest in the U.S., and in 1992 it was made even larger by 17 acres of J.I. Case equipment: horse-drawn, steam, and gas-powered, including some very rare items, such as two Case cars. Included were seven 110 HP Case steam tractors, Case's largest production model. These engines were videotaped, plowing in unison, a feat likely never to be repeated. One 80 HP Case steam tractor was hauled all the way from Buffalo, N.Y. The owners of this engine are professional RR salvagers, and when the WMSTR's own 80-ton steam locomotive derailed they said it was worth the whole trip just for the chance to get a steam locomotive back on the rails again.

"The threshing shows, such as the one at Rollag, are the repositories of our *operating* industrial and agricultural history. I hope that in the future the SIA puts some emphasis on these shows and makes them known to members. An important source of info. on the shows in North America is the *Show Directory*, published by Stemgas Publishing Co. (POB 328, Lancaster PA 17603; \$5 ppd., Pa. residents add 6% sales tax). It lists the year's events, state by state."

## SIA AFFAIRS

## Plan for Pittsburgh, June 3-7, 1993



The great George Westinghouse Memorial Bridge, built in 1931 on the outskirts of Pittsburgh to carry the Lincoln Hwy. across Turtle Creek Valley. Courtesy Pittsburgh History & Landmarks Foundation.

Final plans are being firmed up for the 22nd Annual Conf., June 3-7, in Pittsburgh, headquartered at the Westin-William Penn Hotel, which was constructed c1900 by Connellsville coke king Henry Clay Frick. The Thursday evening welcoming reception will be held at the Frick Art Gallery, Univ. of Pittsburgh, and will open a special exhibit, "The Artist Looks at Industrial Pittsburgh," cosponsored by the Three Rivers Chapter, SIA. Additional receptions will be hosted by the Pittsburgh History & Landmarks Foundation on Friday and by the Historical Society of Western Pa. on Saturday. Also on Saturday, in addition to the slate of paper sessions assembled by the Inst. for the History of Tech. & IA, Univ. of W.V., will be the annual Bridge Symposium organized by Eric DeLony.

Process tours will explore the region's coal & coke, steel, machine shop, glass, brewing, and transportation industries. There will also be a tour of the Robotics Institute at Carnegie Mellon Univ. In the tradition of past confs., there will be a Sunday morning river tour aboard a Gateway Clipper. The Monday post-conf. tour, sponsored in part by America's Industrial Heritage Project, will visit the East Broad Top RR and industrial complex.

Pre-registration materials will be mailed in April. For additional info., contact Richard O'Connor, 2216 Hampton Ave., Pittsburgh PA 15218 (412-731-4145).

## NEWS OF MEMBERS

Ed Rutsch and his firm, Historic Conservation & Interpretation, are part of the controversial story of the African American burial ground excavation in New York City, discussed in "Bones & Bureaucrats," the cover story in the forthcoming March/April issue of *Archeology*.

### LETTER TO EDITOR

### Editor:

The 24-ft-diam. "Big Wheel" in Ed Winters collection in North Collins, N.Y., is said to be 10,000 lbs. [see *SIAN* Fall 92:1]. I believe that this is actually about a tenth of the flywheel's real weight. I made a quick estimate of the probable amount of cast iron in the wheel and, at 450 lbs. per cubic foot, I found over 90,000 lbs. This is such an impressive artifact, I think people should be allowed to appreciate the full impact of its mammoth size.

> Charles A. Emmerich Randolph, N.J.

**BAYWOOD ROYALTY TO SIA.** The Society is pleased to announce receipt of the 15th royalty check for \$80.51 from sales of *Historical Archaeology: A Guide to Substantive & Theoretical Contributions*, edited by Robert L. Schuyler [SIA], available for \$27.50 ppd. from Baywood Publishing Co., Inc., Amityville NY 11701 (516-691-1270; fax 691-1770).



**FORTHCOMING CONFS., TOURS.** Mark your calendars for future SIA events. Current plans, subject to change, have scheduled the following: 23rd Annual Conf., Toronto, June 2-5, 1994; 24th Annual Conf. in 1995 is tentatively set for Baltimore; 1993 Fall Tour, New Hampshire, Oct. 1-3; 1994 Fall Tour, still seeking sites. Info. & offers to host: Henry A. Rentschler, SIA Tours & Confs. Coordinator, POB 962, Paoli PA 19301-0962

## CALENDAR

Have a meeting, conference, or event of interest to SIA members? Submit announcements to the Editor, SIAN.

### 1993

May 11-14: Intl. Seminar on the Preservation of the Industrial Heritage, Technical Univ. of Gdansk, Poland. Incl. plenary session on IA. Info.: Seminar Secy., Waldemar Affelt, Politechnika Gdanska, Wydzial Budownictwa, Ladowega, ul. Majakowskiego 11/12, 80-952 Gdansk, Poland.

May 12-15: Annual Meeting, Vernacular Architecture Forum, Natchez, Miss. Info.: Belinda Steward, POB 873, Eupora MS 39744 (601-258-6405).

May 16-20: 88th Annual Meeting, American Assn. of Museums, Fort Worth, Tex. Info.: AAM, POB 40, Wash. DC 10042-0040 (202-289-9113).

**June 3-5:** Lowell Conf. on Industrial History, Lowell Natl. Historical Park. Theme: links between slavery system & textile industry. Info.: Marty Blatt, Historian, LNHP, 169 Merrimack St., Lowell MA 01852 (508-459-1025).

JUNE 3-7: 22nd ANNUAL SIA CONF., PITTSBURGH, PA. Info.: Richard O'Connor, HABS/HAER, Natl. Park Service, 108 Bishop Boyle Center, 120 E. 9th Ave., Homestead PA 15120 (412-464-0784).\*

July 3-10: 8th TIMS Symposium, The Intl. Molinological Society, Univ. College of Wales, Aberystwyth. Hosted by Cymdeithas Melinau Cymru (Welsh Mills Society). Info.: Gerallt D. Nash, 269 St. Fagans Rd., Fairwater, Cardiff, Wales CF5 3DW, U.K.

SEPT. 7-21: SIA STUDY TOUR TO ENGLAND & WALES. Info.: Henry A. Rentschler, POB 962, Paoli PA 19301 (215-644-5343). NOTE: Standby list only.

**Sept. 8-11:** Annual Meeting, American Assn. for State & Local History, Columbus, Ohio. Info.: AASLH, 530 Church St., Suite 600, Nashville TN 37219-2325.

Sept. 15-17: Symposium on "Structural Preservation of the Architectural Heritage," Rome, Italy, sponsored by the Intl.

Room 5014-MRC629 National Museum of American History Smithsonian Institution Washington, DC 20560

SOCIETY FOR

INDUSTRIAL ARCHEOLOGY Assn. for Bridge & Structural Engineering, co-sponsored by ICOMOS. Info.: IABSE Secretariat, ETH-Honggerberg, CH-8093 Zurich, Switzerland (phone Int. +41 1-377 26 47, fax Int. +41 1-371 21 31).

OCT. 1-3: SIA FALL TOUR: New Hampshire Mill Towns. Sponsored by Northern New England Chap. & HQ'd in Concord. Info.: Dennis E. Howe, Chair, 1993 Fall Tour, 22 Union St., Concord NH 03301 (W 603-225-6649; H 603-224-7563; fax 226-2548).

Oct. 8-10: Iron Masters Meeting, Scranton & Cornwall, Pa., cosponsored by the Pa. Hist. Commn. & SIA. Info.: Ed Rutsch [SIA], R.D.3, Box 120, Newton NJ 07860 (201-383-6355, fax 383-9377).

**Dec. 6-8:** Restoration 93, Intl. Conservation & Preservation Trade Event, Hynes Convention Center, Boston. In cooperation with APT. Info.: Restoration 93, c/o E. Glew Intl. (EGI), 10 Tower Office Park, Woburn MA 01801-9988 (617-933-9699, fax 933-8744)

\*Find details on this event elsewhere in this issue.

The SIA Newsletter is published quarterly by the Society for Industrial Archeology. It is sent to SIA members, who also receive the Society's journal, IA, published annually. SIA promotes the identification, interpretation, preservation, and re-use of historic industrial and engineering sites, structures, and equipment. Annual membership: individual \$25; couple, \$30; institutions, \$30; contributing, \$50; sustaining, \$100; corporate, \$250; student, \$20. Send check payable to SIA to Treasurer, Room 5014-MRC629, National Museum of American History, Smithsonian Institution, Washington, D.C. 20560; all business correspondence should be sent to that office.

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