

BEN AVON AREA HISTORICAL ASSOCIATION

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300 Camp Horne Road
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James Aston

Ben Avon Metallurgical Engineer
June 14, 1876 - September 25, 1962

By Tracy Ferguson

Bury, England during the second half of the 19th century was home to the textile industry. Cotton mills abounded and the Rivers Roch and Irwell provided power for the spinning mills. No sewers existed and the houses were close together supplying the perfect cauldron for the rapid spread of disease. It was common practice to sleep several people in each bed and, unfortunately, the average age of death was 13.8 years. Into this environment a child was born on June 14, 1876 to Thomas and Mary Aston whom they named James Aston. For reasons unknown to this author, the family moved to the United States in 1879, perhaps to give their son and daughter, Bessie, brighter futures. They settled in Milwaukee, Wisconsin when James was four. Milwaukee had a predominantly German population then and wheat production and shipping, breweries and tanneries were the primary industries.

James attended the Milwaukee public schools and eventually graduated from the University of Wisconsin in 1898

with a B.S. degree in electrical engineering. Following his father and grandfather into the iron industry, he worked in his father's foundry in Milwaukee for ten years before returning to the University of Wisconsin to do research on iron alloys. He earned a degree in 1912 in Chemical Engineering and went to work as a professor of



metallurgy at the University of Cincinnati for the next three years. Then, a brief stint as a metallurgical engineer for the U.S. Bureau of Mines brought him to Pittsburgh.

By the time he landed in Pittsburgh in 1915, James was married to Ellen G. Felsen and had two young daughters, Alice, age twelve, and Ruth, age seven. The 1920 U.S. Census shows them residing in Ben Avon on Forest Avenue. Soon after, they purchased their home at 7315 Perrysville Avenue where James and Ellen lived out their lives. His

mining and metallurgy department at the Carnegie Institute of Technology (now Carnegie Mellon University) and his years as a metallurgist and consultant for the A.M. Byers Company, America's oldest and largest producer of wrought iron products. For nearly ten years, he worked for Carnegie Tech and consulted at A.M. Byers concurrently. He was



Puddlers remove an iron ball from a puddling furnace

illustrious career included a professorship and department head position in the

awarded the distinguished Robert W. Hunt medal and an Honorary Doctorate

of Science degree in 1933 from the University of Wisconsin.

James Aston was best known for inventing a new process for making wrought iron, the Aston process, which greatly increased production and controlled for quality and uniformity of the product. Prior to the Aston process, wrought iron or "worked iron" was produced by melting the raw material pig iron in a hearth with oxidizing agents to remove impurities. A skilled worker called a "puddler" would use long bars to stir the seething mixture to oxidize the impurities and carbon out of the pig iron, leaving spongy wrought iron balls as a product. In *A Brief History of Iron and Steel Production* by Saint Anselm College Professor Joseph S. Spoerl, the puddler was described as such: "Only men of remarkable strength and endurance could stand up to the heat for hours, turn and stir the thick porridge of liquescent metal, and draw off the blobs of pasty wrought iron. The puddlers were the aristocracy of the proletariat, proud, clannish, set apart by sweat and blood. Few of them lived past forty." After the puddlers removed the wrought iron balls, the balls were then forged and rolled into flat iron sheets, rails or bars. In contrast, the Aston process took molten steel from a Bessemer converter and poured it into cooler liquid slag, which caused the impurities to be released in the form of gasses, again leaving spongy balls of wrought iron. This process eliminated the need for hand puddling. Three to four tons of wrought iron was made per batch with this new method.

The A.M. Byers Company built a new wrought iron plant in Ambridge, PA along Ohio River Boulevard in 1929 and 1930 designed specifically to use the Aston process. This estimated \$10,000,000 plant ushered in a new era in the

manufacture of this metal. Although the new process displaced one group of skilled workers, the hand puddlers, the new plant brought close to 1,000 new jobs to the many unemployed locals after the 1929 Depression hit. A history of the A.M. Byers Company by William J. Bowan stated that, "The work force of the A.M. Byers Company was made up of ten or more ethnic groups; such as the Slavs (consisting of Slavish [sic], Hungarian, Poles, Ukrainians, Russians, Croatia,[sic] Serbians), Germans, Italians, and Scots. The workers were virtually a melting pot of first and second generation Americans of the early immigrants. The 1929 'Depression' fell upon Ambridge in October of that year. So when A.M. Byers opened one year later in 1930, there was a large influx of local unemployed men- plus the addition of so called 'Out-of-Towners' from the coal fields of Western Pennsylvania and West Virginia as well as other steel mills of Beaver County and Pittsburgh. The workforce grew so as to fill the accumulated back orders and replacement demand for this specialized metal. The plant's Bessemer converter furnaces were located about one-hundred and fifty feet inside the chain link fence bordering Rt. 88 [now Rt. 65-ed.]. The memorable scene of blowing furnace mouths, spewing showers of sparks, and volcanic columns of varying colored smoke high into the air was an awe inspiring spectacle to passing motorists, especially to out of state tourists. This production show would repeat approximately each half hour at this place along the former National 'Lincoln Highway,' now called Duss Avenue. At times strong winds and breezes would carry the sparks and fallout out onto the highway causing some paint searing spots for those uninformed motorists who

stopped and lingered.” The Ambridge plant helped many survive the Depression years, but it closed in 1969 due to the mass production of less expensive steel. Today, wrought iron is no longer commercially produced, although old wrought iron is reworked into new products.

While living in Ben Avon, Aston also co-authored two books: the re-writing of *Johnson's Materials of Construction* with M.O. Withery in 1919 and *Wrought Iron: Its Manufacture Characteristics and Applications* with Edward B. Story in 1939. His daughter Alice, who had been born in Milwaukee, Wisconsin, married William Hammond Schellhammer in Wellsburg, West Virginia on December 3, 1924. They set up housekeeping in Warren, PA and had four children, two daughters and two sons. William was a traffic manager at the Hammond Iron Works, a railway car and tank manufacturing company. Alice was widowed at a young age when her husband died in 1949, just days before his forty-fifth birthday. Daughter Ruth graduated from Carnegie Tech's School of Drama and performed at the Pitt Theater with the George Sharpe Players, a Pittsburgh stock company featuring light comedies, farce, melodramas and mysteries. Ruth also had a dramatic role in a radio promotional campaign in 1929 on KDKA for the soon-to-be-released "Tailspin Tommy" comic strip. In later years, she worked as a lecturer and guide. In 1939, she married John C. Wright, a tool and die factory representative, but the marriage ended in divorce. Ruth died after a brief illness a year after her father died; Ruth was fifty-six. James died in Suburban General Hospital on September 25, 1962 at the age of 86, a long way from his Bury, England birthplace and decades beyond

his teenage years. His wife continued to live in their Ben Avon home until her death at home on January 27, 1986 at the remarkable age of 106. Ellen was a member of the Woodland United Presbyterian Church and a friend of former Ben Avon resident, Betty Haughin, of the now defunct "City and Suburban Life" newspaper Chit Chat column fame. Betty stated, "I cherish memories of Ellen, and times we shared together. She had been to many foreign countries, and in years when women weren't that traveled. I loved to hear her talk about her trips with husband, Dr. Jim. Books were her constant companions, and her garden! How she did love that, and caring for it. Her green thumb guaranteed a bumper crop, be it roses or flowers of any type, along with vegetables in the summer, or Christmas cactus and indoor plants which bloomed in colorful profusion on her dining room window seat all winter long. "At the time of her death, she had four grandchildren, eight great-grandchildren and four great-great-grandchildren. James and Ellen Aston are buried at the Allegheny County Memorial Park in McCandless.

The "Ben Avon Doctrine"

by Peter Herchenroether

We all have heard of famous 'doctrines', such as the Monroe Doctrine that declared the policy of the United States was to preclude European powers from interfering in the affairs of the Americas. Most post World War II Presidents have announced doctrines of their own, with varying degrees of acceptance and retention.

In law, there are many doctrines as well, such as the doctrine of *stare decisis*, by which courts give deference to previous decisions with similar facts, or

the *assumption of risk* doctrine by which injuries occurring while voluntarily participating in an inherently risky activity (skydiving, mountain climbing, hang gliding) are not always compensated.

When courts, especially the U.S. Supreme Court, rule on a new matter and establishes a new principle of law, a doctrine may be born. It is often given the name of that case.

Did you know that Ben Avon was party to one such case and that its ruling became known as the “Ben Avon Doctrine”? The Doctrine declared that the rates set by a utility company could be determined by a court proceeding, rather than by a regulatory agency.

The regulators argued that they were so knowledgeable about the industry that their determination of a company’s rates for consumers should be sustained, if appealed by the company to the courts, unless they were found to have acted irrationally. The utility company argued that that Constitution required that they have a right to a determination by a court, not just a regulatory agency, as a matter of its right to not have its property ‘taken’ by a governmental action without “due process”. The utility company prevailed.

In 1920, the U.S. Supreme Court heard an appeal of a case initially brought by Ben Avon Borough, and others, involving the manner in which water utility rates were determined. Ben Avon sought to have the Pennsylvania Public Service Commission (PSC, now the PUC) review how the Ohio Valley Water Company determined the rates for the purchase of water to its citizens. The PSC ruled that the rates were too high and ordered reductions. The Water Company appealed to the courts to have its rates reinstated. The PA Superior Court agreed but it was later overruled by the PA Supreme Court. In effect, the PA Supreme Court held that the courts should not engage in a detailed analysis of whether the PSC was correct or not; just on whether its findings were an abuse of its discretion as a regulatory agency. That is, the PA Supreme Court held that the PSC is better equipped to understand the details of how a utility company functions to determine the rates that are necessary to provide a reasonable rate of return for its investment and no court could expect to have that same ability. While the Water Company was entitled to appeal the PSC’s decision, the court should limit its review to determine if the PSC acted reasonably,

and not decide the specific rates to be charged on its own.

The Water Company appealed the PA Supreme Court’s decision to the U. S. Supreme Court and won, based on the Court holding that to deny a utility the right to have a court review the basis for its rates in detail was a denial of its Constitutional right to not be deprived of property without due process.

The holding that utility companies whose rates are regulated by the government must have a full hearing by a court, not just an agency, before any rates could be reduced became known as the “Ben Avon Doctrine”. *Ohio Valley Water Co. v. Ben Avon Borough et al*, 253 U.S. 287, 40 S.Ct. 527 (1920). The case was sent back to the Pennsylvania courts for the purpose of providing such a hearing.

The Ben Avon Doctrine has had to struggle to be respected over the years as legal scholars have challenged its constitutional base. It has not been applied consistently over the years. The U.S. Supreme Court has often ignored it when ruling on similar matters, but it has not affirmatively overruled it. See Glick, *Independent Judicial Review of Administrative Rate Making: The Rise and Demise of the Ben Avon Doctrine*, *Fordham Law Review* Vol. 40, Issue 2, Article 4.

While the Ben Avon Doctrine may as yet be affirmatively overruled, for now it may be pulled from the shelf and dusted off to support a utility company’s right to its ‘day in court’ to substantiate its rates. And we can remember that Ben Avon Borough initiated the case by which legal scholars have engaged in a heated debate about what ‘due process’ means in the Constitution.

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We cover all five Avonworth municipalities: Ohio and Kilbuck Townships and the Boroughs of Ben Avon, Emsworth and Ben Avon Heights.

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