insurance and the hospital industry in Western Pennsylvania.

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Refactories: The Hidden Industry
By Corinne Azen Krause

The American brick industry has been the subject of rising interest over the past 25 years. Spurred by historic renovation projects in many urban communities across the United States, as well as the "collectibility" of bricks as antiques, the interest in American domestic brick production has resulted in the publishing of numerous articles, on subjects ranging from restoration techniques for brick facades to examinations of the chronological changes in the manufacturing processes. These works, however, have largely concentrated on the domestic brick used in the construction of houses or other structures, with little attention paid to industrial usage of brick. Corinne Azen Krause provides a major source of information on this largely neglected area of brick manufacture.

Aply titled, Refactories: The Hidden Industry, presents a well balanced overview of United States refractories from 1860 to 1985. The growth of American industries, most notably the iron and steel, glass and ceramic manufactories, in the post Civil War era created a demand for refractory brick, or "fire brick," used in the lining of furnaces, boilers and fireplaces. This is clearly shown in the examination of early refractory production in the United States prior to 1860, which was concerned with meeting the needs of small scale manufactories and business, with the demand for better and larger quantities of refractory materials brought about by the industrialization of the post-1865 period. The subsequent evolution of the refractory industry, from its consolidation into larger firms in the early part of this century through the changes brought about by the decline of the steel industry and the development of new needs for refractory materials by modern manufacturers, receives equally illuminating treatment.

Of particular interest is her examination of the manufacturing processes and labor conditions which characterized the refractory industry between 1900 and 1950. Beginning in 1900 the development of mechanized manufacturing techniques, such as the machine-press, which eliminated hand molding of the bricks, coupled with improved firing processes made possible by the introduction of the tunnel kiln circa 1919, allowed for increased production with concomitant savings in labor and fuel costs. Her comparison of twentieth century refractory technology with the manufacturing techniques of the late nineteenth century serve to illustrate not only the differences in productivity but also the role of the American refractory industry as an integral part of the industrial development of the nation. Krause's description of the manufacturing process is very clearly stated and well illustrated through photographs, making the production of refractory materials and associated working conditions understandable to the layperson as well as the specialist.

The book has numerous strengths, foremost of which is the clearly defined terminology employed by the manufacturers of refractory materials. All too often works dealing with technological processes fail to explain or define the industrial terminology such that the average reader can comprehend what is being described.

The growth of American industry in the post Civil War era created a demand for refractory brick.

— a situation which Krause nicely avoids. Another strength of the book lies in its format, which allows the reader to easily compare the development of the refractory industry between various regions of the country, particularly in chapters One through Four, which present the historical overview of the industry. Finally, the closing chapter of the book presents brief histories of 38 individual companies that produced refractory materials, which is an aid for further research. Overall, Krause has done an outstanding job of bringing to light a largely ignored history. Given the dearth of material on the refractory industry and its historical context, her work serves as an entry point for further research on the subject.

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Forging a Union of Steel: Philip Murray, SWOC, and the United Steelworkers
Paul F. Clark, Peter Gottlieb and Donald Kennedy, editors.

As Ronald Filipelli notes in his introduction to this collection of essays on Philip Murray, the Steel Workers Organizing Committee, and the United Steelworkers of America, few studies exist on the CIO movement in