

*Cities of Light and Heat: Domesticating Gas and Electricity in Urban America.* By Mark H. Rose. (University Park: Pennsylvania State University Press, 1995. Pp. xviii, 229. Notes, illustrations, tables, bibliographic essay, index. \$34.50.)

*Cities of Light and Heat* is a segmented study of the development and spread of gas and electric consumption in two cities and the nation as a whole. The first two chapters chronicle the creation of gas and electric utilities in Kansas City and Denver and the pressures that prompted the spread of utility infrastructure outside of the city centers. Personalities, political realities, competition, and new technologies all influenced the chronology and geography of gas and electric distribution in these cities in the nineteenth and early twentieth centuries. Peculiar in this process was the decision to abandon the cost of delivery to the individual customer as the sole determinant of price. Instead of charging more distant customers at a higher rate, utility officials and politicians eventually worked together to spread the costs of building their systems evenly over all customers.

To overcome customer resistance and increase consumption, promoters turned to sales innovations and the public schools. Manufactured gas proved costly compared to coal. This prevented even a highly trained and motivated sales force from converting enough city residents to gas heat. More sales came when natural gas arrived, first in Kansas City in 1907, then much later in Denver in 1928. Denver's proximity to cheap coal kept natural gas at bay twenty years longer than in Kansas City, but the fact that natural gas contained more than twice the heat potential of manufactured gas helped make it a success. A gas furnace, went the sales pitch, allowed a man to quit worrying about his wife at home being a stoker and janitor. It kept the house warm with a thermostat and eliminated ashes. A simultaneous campaign in the schools to promote gas and electric appliances built a base of future consumer demand for the convenience and cleanliness of the new technologies.

Of the two figures sketched in the fifth chapter, J. C. Nichols's creation of the Country Club District of Kansas City merits more interest than Roy Munroe. While Munroe spent his life as sales manager for Denver Gas promoting gas and appliance sales, Nichols financed and built homes and shopping districts for Kansas City residents. By building his new shopping center near suburban residential developments, he anticipated future trends in many ways, in spite of predictions of failure. Rose uses these examples to document the increased consumption of utility services and the spread of wires and pipelines wherever suburbanization went.

In the final two chapters the author looks at the spread of the culture of gas and electric usage in the United States from 1920 to

1985, but he does this statistically and anecdotally. He leaves the reader wishing for a more detailed treatment of the creation and early years of the Denver and Kansas City companies, or a fuller description of the spread of appliances and heated living spaces touched upon in the other chapters.

Rose's topics, considerations of motive, and his bibliographic essay will make this a useful work for those interested in urban history, the diffusion of technology, and the American culture of comfort.

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*Sustainable Agriculture in the American Midwest: Lessons from the Past, Prospects for the Future.* Edited by Gregory McIsaac and William R. Edwards. (Urbana: University of Illinois Press, 1994. Pp. x, 291. References, tables, maps, illustrations, figures, index. \$32.95.)

This collection of twelve essays, lucidly introduced and eloquently concluded by Gregory McIsaac, asks whether and how mid-western agriculture can be sustained. The contributors are mostly scientists who bring knowledge of agricultural engineering, soils, climates, and geography to the discussion. A few of them specialize in social studies, notably agricultural economics and anthropology, but none are historians. Their discussion principally concerns the future, not history, but they acknowledge that "studying the past . . . may help us to divine the future" (p. 1). Accordingly, the essays examine agriculture's history as well as its prospects and deserve a broad audience of readers who care about the Midwest's part of that history and need clear, readable guidance to its technical and environmental aspects.

The book's attention to the past begins with McIsaac's introductory essay, which includes a brief history of the terms "sustainable" and "sustainability" as they have been applied to agriculture. It would be good to sustain agriculture, nearly everyone agrees, but what is needed to give agriculture sustainability varies with the interests and academic disciplines of those who have studied the subject. In his concluding essay, McIsaac fervently argues that the division of academics into separate disciplinary tribes has blocked really inclusive studies of what sustaining agriculture requires. Sustainability gets studied in fragments even on land grant campuses which should, and perhaps increasingly will, foster holistic studies of agriculture and its prospects. McIsaac's general argu-