

settlement; (4) social dimensions of settlement, including kinship, commonality of origin, and religious affiliation; (5) the built environment, including a classification system for frontier houses; and (6) the frontier household. In reconstructing a picture of early settlement in the Salt River valley, the authors examine the roots of the frontier settlers in both cultural and geographical terms. The treatment of the Bluegrass region of Kentucky and the Upper South culture that evolved there, for example, provides a valuable perspective for understanding and interpreting the frontier settlement of Missouri.

In their concluding remarks, the authors express their belief that the real value of their study "is in demonstrating the necessity for a formal theory of human settlement" (323). Actually, though, this study has value at several levels. For those with an interest in the project area, the material presented in this volume should prove invaluable. And although the study is of a relatively small geographic area, it clearly has implications for the study of the frontier period throughout the Midwest. For those who deal at a more general level in the study of the frontier, this study provides the kinds of specific details that rarely have been available in the past. Still, the greatest value of this study is perhaps in its contribution to settlement theory. The development of explanatory and predictive models represents a significant contribution to the literature in the field.

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This Well-Wooded Land: Americans and Their Forests from Colonial Times to the Present, by Thomas R. Cox, Robert S. Maxwell, Phillip Drennon Thomas, and Joseph J. Malone. Lincoln: University of Nebraska Press, 1985. xvii, 325 pp. Illustrations, maps, notes, appendix, bibliographical essay, index. \$27.95 cloth.

An English visitor to the United States in the 1790s observed that Americans "have an unconquerable aversion to trees. . . . not one is spared; all share the same fate, and all are involved in the same general havoc" (53). In a thought-provoking study that explores why and how Americans chopped, felled, and processed trees from the early colonial period to the present, the authors accomplish more than a mere chronicle of lumbering; they peer deeply into human motives and economic causation. The result is a stimulating perspective on trees, which were so common, always taken for granted because of their plenitude, and ultimately protected by conservation and common sense.

The authors follow a chronological format and yet examine specific topics. The thirteen chapters are roughly divided into four groups,

with each author handling his own period of chronological specialty. All are specialists in one way or another with forestry: Thomas Cox is a past president of the Forest History Society; Robert Maxwell is a historian who teaches in the School of Forestry at Stephen F. Austin University (Texas); Phillip D. Thomas is dean of the College of Arts and Sciences at the University of Alaska; and the late Joseph Malone served as the head of the history department at Kansas State University. Thomas Cox notes in the preface, "we set out with a shared conviction of the centrality of forests in the American experience" (ix). The study draws from both primary and secondary sources, but the latter are mainly emphasized in the documentation since this work is designed to be read mostly by nonspecialists. Yet the study contains a treasure of sophisticated historical insight, useful to specialists as well as general readers. Aspiring graduate students seeking topics for dissertations will discover suggestions piled up like handy cordwood stacks in the superb bibliographical essay.

In the colonial and early national periods the cutting edge of the frontier expanded from the Atlantic seaboard inland to the Mississippi River. Vast tracts of trees were cut for log cabins, fence rails, and fuel wood. In the South, deforestation and overcropping of cotton played equal roles in causing the region's infamous soil erosion.

Following the Civil War, railroads dominated the remainder of the nineteenth century. Yet timber remained vital in the age of iron and steel. In 1870, 195,000 acres of timber were needed for thirty-nine million cross-ties; by 1890 that figure had doubled. Additional amounts of wood were used for trestles, stations, platforms, water towers, and box-cars. Ironically, though, America's surfeit of timber encouraged the continued building of wooden sailing ships long after other nations turned to more practical steel-hulled vessels.

The vagaries and shortcomings of the Timber and Stone Act (1878) and other similar legislation failed to allay the abusive and illegal lumbering techniques common to the American West. But the greatest tragedy came as cut-over timber tracts with large amounts of slash debris provided the tinder for fires that swept the region, leaving it bare for subsequent wind and water erosion.

The authors' treatment of the conservationists and progressives at the turn of the twentieth century follows a standard and familiar line, with special emphasis on the role of personalities such as Theodore Roosevelt and Gifford Pinchot. A major interpretive point is that the lumber industry itself was maturing by this time; "sustain-yield" forestry replaced the previous abusive "cut-and-run" logging as the new business economics for the industry. Ironically, the impact of automobiles and tourists visiting sylvan nature in the 1920s did not alarm the

preservationists of America's forests. Early advocates of forest and environmental preservation did not block the building of cement highways into the timber tracts; they even encouraged them. But they insisted that the timber stands lining the highways must be preserved and safeguarded.

In the 1930s the New Deal programs, especially the Civilian Conservation Corps (CCC), paved the way for improvement of recreational facilities, parks, and campgrounds. But the CCC's greatest contributions came in fighting forest fires and planting trees. By 1940 half of all forest planting in the nation was done by CCC units, creating a living legacy that endured for subsequent decades. Younger readers will be fascinated with the origin of the Forest Service's "Smokey Bear" program in 1945 to combat fires. Since 1945 the popular warnings of "Smokey Bear" have increased public awareness and resulted in the average number of fires in public forests being cut in half.

The authors conclude their study by pointing out that most of the nation's forestlands are still located in the East and South. But the eastern timberlands constitute forests almost entirely of second and third growth, testimony of indiscriminate leveling of trees east of the Mississippi in earlier centuries. Yet, ironically, today the most saleable timber is located in the West. The authors predict that the intensive pressures of earlier periods to cut timber indiscriminately will not recur, and that the conservationists and environmentalists have essentially won the battle. It would appear that Americans must "learn to live more with their environment and less upon it" (259). Like the mighty California redwood, this finely crafted study serves as a towering monument to solid research, and tells a beautifully written story of one of America's major natural resources. Read for pleasure or profit, it deserves close scrutiny by environmental enthusiasts and historians as well as general readers.

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Great River: An Environmental History of the Upper Mississippi, 1890-1950, by Philip V. Scarpino. Columbia: University of Missouri Press, 1985. viii, 219 pp. Notes, illustrations, bibliography, index. \$24.00 cloth.

Mark Twain was wrong when he prophesied that neither science nor technology would ever control the flow of the Mississippi River. With the completion of the Keokuk Dam in 1913, engineers had conquered the river, forever confining it to the channels they had designed and solving the problems of navigating the Des Moines rapids, which had

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