

dating back more than sixty-five hundred years. By 1492 the cultivation of corn had spread over a large part of North, South, and Central America, and its adoption by the early settlers of the American colonies included the maintenance of pure varieties of corn which were later to become so important to hybrid seed development.

It is interesting to note that Charles Darwin conducted a greenhouse experiment on corn in 1871 which he reported in his book, *Effects of Cross- and Self-Fertilization in the Vegetable Kingdom* (1876). He noted that the crossed plants grew 20 percent taller than the self-fertilized plants, an observation that led to the scientific development of today's hybrid corn. The full significance of hybrid vigor awaited the discovery of the science of genetics, which began with Gregor Mendel's description of the breeding behavior of garden peas in 1866. The authors described W. J. Beal's original contributions in 1877 using controlled crosses between differing varieties of corn which improved yield by 25 percent. Beal's work set the stage for hybridization experiments by other individuals over the next twenty-five years that made corn America's most important crop. By the early part of the twentieth century a number of high-yielding, inbred lines were established through recurrent selection, and Henry A. Wallace began vigorously promoting the development and adoption of these hybrids.

Corn and Its Early Fathers is both a fascinating history and an absorbing and very readable biography, a significant volume in Iowa State University Press's Henry A. Wallace Series on Agricultural History and Rural Studies. It should appeal to a diverse audience, mid-westerners and plant scientists in particular, and all those interested in the history and economics of agriculture. As the editor of the series points out, the authors believe hybrid corn to be "the world's greatest agricultural accomplishment of modern time."

Toward a Well-Fed World, by Don Paarlberg. Henry A. Wallace Series on Agricultural History and Rural Studies. Ames: Iowa State University Press, 1988. xviii, 270 pp. References, index. \$24.95 cloth.

REVIEWED BY ROY V. SCOTT, MISSISSIPPI STATE UNIVERSITY

This book by one of the nation's leaders in agricultural economics and the shaping of farm policy in the last thirty years or so must have been a labor of love. Don Paarlberg devoted much of his life to improving the lot of farmers and consumers of food and fiber in the United States and abroad. It is only appropriate that as an elder statesman in the field he produce a book the thesis of which is that "the world is on its way toward overcoming hunger" (253). It is also appropriate that

the book was published as a volume in Iowa State University's Henry A. Wallace Series on Agricultural History and Rural Studies, a series dedicated to a famous Iowan best known for his work on behalf of agriculture and food production.

Paarlberg's purpose is to describe, mainly for general readers, the careers and contributions of a group of remarkable individuals whom he labels "hunger fighters." These men and women played major roles in freeing the world from famine, one of the Four Horsemen of the Apocalypse. According to Paarlberg, their work can be characterized under three headings: science, food aid, and birth control. The result is a book that should be read by those interested in the advances in the past century that have disproved Thomas Malthus's grim prophecy that population must always outrun food output, with famine and starvation the inevitable result.

Scientists whose discoveries contributed to the dramatic expansion in food production constitute the largest group of individuals discussed in the book; Jethro Tull, Justin von Liebig, Louis Pasteur, Cyrus McCormick, Gregor Mendel, Justin S. Morrill, Samuel Johnson, and Seaman A. Knapp are all well known to students of agricultural history. Theodore W. Schultz, the 1979 Nobel Prize winner in economics, is included as are Mary S. Rose, a pioneer in nutrition, Henry A. Wallace, Norman Borlaug and two of his disciples in India and China, several gene splicers, and developers of antibiotics, insecticides, herbicides, and biological controls. Hugh Bennett, the crusader for soil conservation, and Nicolas Effert, a pioneer in food preservation, are discussed. An interesting chapter deals with genetics in the Soviet Union, where ideology directed scientific thought to absurd ends. The section concludes with a description of a fairly typical midwestern farm, the operation of which rests directly upon the work of these and other scientists.

Paarlberg next takes up a group of individuals who gained recognition for their work in food distribution. Among these persons are Joseph Smith, the founder of the Mormon church who planted the doctrine of mutual aid among his followers; Herbert Hoover, who headed the Belgian relief effort and later the U. S. Food Administration during World War I; and Hubert Humphrey, the sincere if naive Minnesotan who as senator and vice-president devoted much of his time to the elimination of hunger among the poor of the United States and the world. Included also are three humanitarians who fought to forestall threatening famine-like conditions in India and China. In several areas of the Third World, where famine is still a threat, an increase in the output of food must be matched by a decrease in the rate of population growth. Paarlberg's "hunger fighters" on the

demand side of the food equation include Margaret Sanger, a pioneer in birth control in the United States; Sanjah Gandhi, who sought with mixed success to deal with threatening high birth rate in India; and several birth control reformers and their policies in China and Taiwan.

Of the individuals discussed in this book only Knapp, Schultz, Wallace, Borlaug, and Hoover had any direct connection with Iowa, and in the cases of Schultz, Borlaug, and Hoover, that connection was brief. Nevertheless, they and most of the remainder of Paarlberg's "hunger fighters" had a significant impact on the state and its people. Iowans will enjoy reading this book.

Historic Missouri: A Pictorial Narrative. Second edition. Columbia: State Historical Society of Missouri, 1988. vi, 94 pp. Illustrations, bibliography. \$9.95 paper.

REVIEWED BY WILLIAM E. PARRISH, MISSISSIPPI STATE UNIVERSITY

As a part of its commemoration of the nation's bicentennial in 1976, the State Historical Society of Missouri devoted the July issue of its *Missouri Historical Review* that year to a pictorial essay of the state's history. This proved sufficiently popular that its executive committee authorized a reprinting of the material in book form. Now a second edition of that work has been prepared with an updating of the narrative and the inclusion of new illustrative materials. A list of suggested readings on the various topics in Missouri history has also been added.

The resulting volume is an attractive pictorial review of the Show-Me State, which would be valuable for classroom use as well as being of interest to those concerned with Missouri history generally. It is divided into nine chapters, ranging from "The Indians in Missouri" to "The Late Twentieth Century." Arranged chronologically, each chapter is introduced with a brief summary of the time period under consideration followed by several pages of black-and-white drawings, photographs, maps, and other materials taken from the State Historical Society's extensive collections. These include reproductions of the works of such famous artists as Karl Bodmer, whose Indian paintings are used extensively to illustrate that chapter; George Caleb Bingham, whose mid-nineteenth century genre paintings reveal so much of the lives of the average Missourian and midwesterner; and Thomas Hart Benton, whose twentieth-century murals of contemporary as well as historical subjects enliven pages throughout. There are cartoons from the society's collections of drawings by S. J. Ray of the *Kansas City Star* and Daniel Fitzpatrick of the *St. Louis Post-Dispatch*.

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