First the Profit

*First the Seed.* By Jack Ralph Kloppenburg, Jr. Cambridge University Press, 1988, 349 pages, $37.50

**Reviewed by Mary K. Knudson**

Many people believe that achievements in plant breeding have benefited the farmer and consumer by increasing yields. Jack Kloppenburg attempts to refute this notion. But, without a background in Marxist theory, the reader may find this book a difficult read.

Kloppenburg argues that profit maximization motives behind the plant breeding programs of the seed industry have been detrimental to the farmer. The farmer has become more dependent on the input industry, with seed now being an input the farmer must buy. Kloppenburg calls this the "commodification" of seed. He examines this transformation in the means of agricultural production by providing a rich historical discussion supplemented with detailed statistical information and interprets this transformation using a Marxian economic framework. Kloppenburg hopes we can apply information from his study to regulate the seed industry, which is becoming more corporate and focused on biotechnology. However, his analysis is sometimes tenuous, and his conclusions are simplified.

This book is unique in the perspective it takes and its scholarship. Neoclassical economists typically look at ways to correct for market failure. Kloppenburg's perspective is that correcting for a market failure, or even having a market, is not always desirable for society overall.

Kloppenburg has done a scholarly job in detailing and documenting the historical development of the seed industry. He begins with the germplasm Columbus picked up on his 1492 voyage and takes us to the present day with the emergence of biotechnology and its role in seed development. Kloppenburg informs us what events took place in the industry's development, who the players were, and what incentives were involved. Kloppenburg's bibliography includes a healthy distribution of proceedings from professional meetings, popular and professional journals, professional association and corporate reports, government publications, and interviews. He cites neoclassical economists such as Zvi Griliches, Willard Cochrane, and Vernon Ruttan, breeders such as Peter Day and Donald DuVick, Marxian economists such as Jean-Paul Berlan, geneticists such as Arnel R. Hallauer, biologists such as Richard Lewontin, and popular writers such as Rachel Carson (*Silent Spring*) and Dan Morgan (*Merchants of Grain*)

It is possible to read each chapter separately without any trouble, and some chapters are particularly useful to economists. Those readers interested in international development should read chapter 7, in which Kloppenburg discusses the issue of germplasm transfer between countries of the North and the South. Readers interested in public finance and returns to research should read chapters 6 and 8, in which Kloppenburg discusses the impact of the Plant Variety Protection Act on the private sector and the current research and funding relationship between the universities and private sector.

In his final chapter, Kloppenburg presents his solution to the problems he foresees with the growing corporate sector in seed development. He writes:

"Research priorities are too important to be left to research directors, management types, or scientists. The public has a right to demand not just accountability from the scientific community but also a voice in determining the goals and purposes to which science and technology are directed." (p. 278)

However, Kloppenburg does not discuss how a relatively uninformed public can acquire the knowledge necessary to direct the course of plant breeding research. Indeed, if Kloppenburg's analysis is correct, one might suppose that the same forces that the private sector used to sway public breeding programs may also sway an ignorant and uninterested public. Having expended considerable energy in detailing the significance of the problems in the U.S. seed industry, Kloppenburg should have devoted more attention to formulating and discussing possible solutions.

The reader will find a knowledge of Marxist theory useful. Readers unfamiliar with Marxist terminology may balk at such convoluted sentences as

"Where the immediate and complete expropriation of the independent producer is constrained, capital seeks to establish the hegemony of
exchange-value as opposed to use-value by binding the autonomous producers inextricably to the commodity form, to bring them ultimately under capitalist relations of production” (p 26)

Kloppenburg has done an admirable job in analyzing the emergence of the seed industry even though his analysis can be weak at times. This book is an excellent choice for people who are interested in neo-Marxist theory, the seed industry, or biotechnology. It is comprehensive and addresses some important issues facing the seed industry.