

DEBORAH FITZGERALD. *The Business of Breeding: Hybrid Corn in Illinois, 1890-1940*.

Ithaca: Cornell University Press. 1990. Pp. xi, 247. \$29.95.

Deborah Fitzgerald is guided, she says, by two questions: how pure science becomes applied science, and how science at land-grant universities differs from science in private agribusiness. The story of hybrid corn is her vehicle for pursuing these questions. She discovers that the traditional differentiation between pure science in universities and applied science in companies was by no means so definite.

Before the business of breeding, farmers practiced selection, the folk method of seed saving and improvement. Even as conscious efforts at corn breeding got underway, they were fairly simple. "Anybody can cross corn," Henry Wallace said. Neither did Mendelian genetics magically transform corn breeding, for even within the federal Bureau of Plant Industry, C. P. Hartley remained committed to selection and to homely extension work with boys' clubs—this despite Donald F. Jones's breakthrough in hybridization, the double cross method.

Scientific corn breeding and hybridization proved potent, however, because they benefited from "a peculiar juncture of pure and applied science" (p. 42). College botanists took up corn breeding in order to work out Mendelian principles, while private breeders labored for profit. This juncture was uneasy. Funk Brothers, a major seed company, developed cozy relations with the U.S. Department of Agriculture (USDA), while in the field agricultural colleges and seed companies vied for control of "the machine" of corn breeding and for the "attention and respect" of farmers. As Fitzgerald weighs the matter, the seed houses won: "No longer just seed houses, they became dispensers of scientific knowledge" (p. 214).

Fitzgerald's book is a splendid contribution, splendid for its sound research, its clear

exposition, and particularly for its conception. Its conclusions cannot be gainsaid; it will endure as a standard work.

The book may not be quite so pathbreaking as the author claims, however. She asserts that "agricultural historians have neglected the relationship between science, technology, and agriculture" (p. 1) and that historians of science and technology likewise have neglected agriculture. This is hardly the case. Agricultural historians, in fact, often seem obsessed with science and technology, to the exclusion of matters cultural. Most early work along these lines—much like early corn breeding—was unsophisticated (A. C. True comes to mind), and generally USDA-whiggish, but today it is easy to assemble a bibliography of historians including such names as Earl Hayter, Margaret W. Rossiter, Ronald Tobey, Pete Daniel, Alan Marcus, and Doug Hurt (for a casual beginning), documenting sustained attention to agricultural science and technology.

Finally, it may be helpful to add that in the business of corn breeding, as in agricultural science broadly defined, there is one powerful agent not accounted for by Fitzgerald. She does an excellent job defining the roles of public agencies, agribusiness, and farmers (at least as represented by farm organizations), but this leaves unanswered questions such as why hybrid corn should be developed and promoted at a time when farmers were piling up grain surpluses. The missing agent here is the public interest, or the perception of the public interest, the force behind much of American agricultural policy from the Progressive era through most of this century.

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