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BOOK REVIEW

Genetic Engineering Applications for Industry

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Noyes Data Corp., Park Ridge, NJ, 1981; $72; 580 pages

In 1981 the US Government Printing Office published a report, "Impacts of Applied Genetics: Micro-organisms, Plants, and Animals," prepared by the Office of Technology Assessment (OTA) of the US Congress. The report, which addressed a number of issues including levels of federal support of research and development, perceived risks of recombinant DNA research, and patenting of organisms, was based in part on a set of working papers prepared under OTA contracts.

"Genetic Engineering Applications for Industry," also published in 1981, is a collection of four of these working papers. According to the Foreword, the publishers feel that the publication of these documents is warranted based on the considerable technical information they contain, most of which did not make it into the final OTA report. The four chapters:

Part I: Industrial Aspects (65 pages): This article considers markets for bulk chemicals as well as pharmaceuticals, including enzymes and protein hormones, and the possible impact of modern molecular genetics on these markets.

Part II: Chemical Industry (74 pages): This chapter concentrates on the possibilities for producing bulk chemicals by fermentation of strains developed by molecular genetics.

Part III: Medical Aspects of Molecular Genetics (343 pages): Written in the vein of a marketing study, this long article is a perceptive look at the opportunities for biotechnology in the pharmaceutical industry and at some of the companies, large and small, involved. Because this area of biotechnology is moving so rapidly, this chapter, based largely on pre-1980 literature,

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is significantly outdated and would be most valuable if read as a historical introduction.

Part IV: Pharmaceutical Industry and Medical Research (93 pages): The closing chapter can be summarized as a less critical, less well-organized, but better referenced duplication of Part III.

These working papers often duplicate, and sometimes contradict, each other. The two sections on the pharmaceutical industry are considerably out of date, not only because of advances in endocrinology and in gene cloning, but also because of other developments, such as in human disease. For example, in the past three years the advance of AIDS has cast a pall on the market for serum-derived proteins, making the marketing prospects for alternative sources of hepatitis vaccine, factor VIII, and other products much more favorable.

In most cases the data provided in the working papers was probably sufficient to help OTA to prepare its report and to make policy recommendations. It is hard to conceive of any other use for these documents. Most of the sections are deficient as scientific reviews: references are sparse; coverage is unbalanced; and data tables are insufficiently footnoted. As a group these reports lack the consistency and quality that can be achieved by a good editor working closely with authors.

My recommendation is that those who are tempted to purchase this volume should instead obtain the OTA report, which is balanced, integrated, and well-written, then hone in on particular subjects by seeking out more-up-to-date technical reviews or marketing studies.

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