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Review of Encyclopedic Dictionary of Plant Breeding and Related Subjects

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Encyclopedic Dictionary of Plant Breeding and Related Subjects. Rolf H.J. Schlegel. 2003. ISBN 1-56022-950-0. Food Products Press of the Haworth Reference Press, Binghamton, NY. 563p. Dr. Schlegel is to be commended for compiling such a comprehensive reference combining the disciplines of plant breeding, botany, agriculture, seed science, horticulture, cell & tissue culture, genetics, and statistics _ over two dozen fields in all, from molecular to ecological. So often, such information is fragmented in highly technical, species-specific or discipline-specific references.

Upon receiving the book, I first wondered if there might be a more accurate title than the somewhat ambiguous one it was given. Is it an encyclopedia, or is it a dictionary? Why not mention the "related subjects" in the title? I thought of several variations on the current title, but none of them described the book more completely without being overly verbose (*e.g.* A Dictionary of Plant Breeding, Botany, Biotechnology and Related Disciplines With Tables and Figures and a List of Crop Species _ ugh!). After a more thorough examination, I concluded that the title indeed was appropriate.

Over 75% of the book is a dictionary of terms, written such that it is comprehensible to most botanists. There is extensive cross listing, as well as noting the particular discipline(s) with which each definition is associated. This cross listing is an important addition, since there are a number of terms that are defined differently in different contexts (*clone*, for example). A significant proportion of the terms are botanical, focusing largely on reproductive structures and processes, as would be expected, but there also are terms specific to methodologies, such as microscopy, biotechnology and experimental design. It's a comprehensive compilation, in that it includes historical terms found in the early plant breeding literature, as well as the current terminology of this age of genetic engineering and genomics.

The second section of the book is a 56-page listing of important crop plants and related species, alphabetized by common name. The listings include scientific names and descriptions and chromosome number/DNA content for some species. I find it particularly practical that it is organized by common name (with extensive cross listing of pseudonyms), giving it an applied focus. Many listings are rather brief, but globally important crop species are given more in-depth descriptions. It is interesting to note the diversity of crop species currently in cultivation, or with future economic potential. To round out this section, descriptions of a number of invasive and/or exotic species that are problematic to certain cultivated crops are included.

The last section includes 35 tables and 41 figures that convey a broad spectrum of information such as selection schemes, genetic ratios, segregation patterns, chromosome numbers and configurations, nutritional compositions, and genomic/ploidy relationships. The tables and figures are referenced in the dictionary section, thus making this book encyclopedic as well (hence the name). The figures illustrating a variety of breeding schemes and field plot designs make it particularly worth purchasing. One drawback to the figures, however, is that the halftones and dotted lines are somewhat faint. I think Schlegel's book would be even more useful if it were to include illustrations to accompany several of the definitions, thus

making it even more encyclopedic. For example, incorporating diagrams of the different flower morphologies would more completely describe them than simple definitions or tables.

The three-page bibliography at the end of the book includes some noteworthy references, but it is somewhat brief. Perhaps a "Suggestions for Further Reading" section that is subdivided to correspond to the disciplines represented in this volume could be included in a second edition, thus making it even more valuable as a reference tool.

In summary, I would recommend that this volume be on the bookshelf of every biologist involved in teaching and research in classical, as well as biotechnological, plant improvement. It would make a very useful reference to accompany standard plant breeding texts such as those by Allard, Briggs & Knowles, and Pohlman & Sleper. - Henry R. Owen, Eastern Illinois University, Charleston, IL 61920