

preface to second edition

Since the first edition of *PLANT PATHOLOGY* appeared, several important developments have emerged, both in the field of plant pathology and in public attitudes toward food production. More people have become aware that all the food and much of the beauty around us come from plants. These people now want to know more about how to grow plants and keep them healthy. Many people also have become more aware of, and concerned about, chemical pollutants in the environment and in our food. The number of students majoring or taking courses in the various agriculture-related disciplines has increased dramatically. These students come from varied backgrounds, and many are not aiming for comprehension of the biochemical intricacies that lead to the development of disease. In fact, most students and practitioners of plant pathology are concerned primarily with the practical aspects of plant pathology: what causes the disease and what can be done about it. Most of these students are likely to take only one course in plant pathology. This course will form the basis for their attempts to diagnose and control diseases in the field, as well as to develop a general understanding of plant diseases that they can apply in their disciplines and their jobs.

The second edition of *PLANT PATHOLOGY* incorporates many of the new developments in the field. It also provides information and visual aids that should prove useful in illustrating concepts, as well as in identifying pathogens and diagnosing diseases. Thus, new chapters or sections have been added on diseases caused by mycoplasmalike organisms, rickettsialike bacteria, viroids, and protozoa. New information has been added on the genetics of plant diseases, the development of resistant varieties, and their vulnerability to new pathogen races; on the development of epidemics; on systemic fungicides and biological control of dis-

eases; on postharvest diseases of plant products and on mycotoxins and mycotoxicoses; on techniques of isolation, culturing, indexing, and identification of pathogens; and on mycorrhizae and root-nodule bacteria.

More diseases have been described in each chapter to give the instructor a greater selection in the diseases he or she chooses to cover. The diseases caused by fungi and those caused by bacteria have been organized in logical, cohesive groups according to their most important symptoms; thus, more of them are available to the instructor and student while the actual number of groups that must be covered is relatively small. In these and in the other chapters on diseases caused by specific pathogens, *selection* is the key word. It is not intended that the instructor cover all, or even half, of the diseases described. Rather, after discussion of the general properties of each group of diseases, the instructor can select one or a few of the diseases within each group for more or less detailed study.

Many more diagrams of disease cycles, of groups of pathogens and of symptoms, and of techniques and concepts of plant pathology have been added. The diagrams should help students visualize many of the concepts and will provide a handy reference for the identification of most common pathogens and the diagnosis of most important plant diseases. Moreover, numerous new photographs (macroscopic, microscopic, electron micrographs, and scanning electron micrographs) that illustrate concepts, pathogens, and symptoms have been added to make the book more stimulating and more effective.

Many people helped make the second edition possible. Of these, Ms. Joan Weeks, who prepared most of the new drawings, and Mrs. Joyce Mieg, who typed the entire manuscript with cheerfulness, efficiency, and excellence, have my most sincere appreciation and thanks. I am also thankful to Ms. Janet Murray, who prepared some of the drawings.

I wish to acknowledge the support which R. A. Rohde, Head of the Department of Plant Pathology, gave to my work on the book by making the resources of the Department available to me. I also want to thank A. J. Browning, R. J. Campana, R. E. Davis, T. O. Diener, C. A. Martinson, M. S. Mount, R. A. Rohde, D. Sands, S. H. Smith, T. A. Tattar, and R. F. Whitcomb for reviewing parts of the manuscript. Also, I am indebted to M. F. Brown, D. J. Politis, and R. N. Goodman, all of the Department of Plant Pathology, University of Missouri, for their help with numerous excellent electron micrographs; E. P. DuCharme, M. C. Shurtleff, and G. Nyland for their help in locating several photos for the book; the USDA photo library and numerous other colleagues who loaned me photographs and whose names are listed in the legends of these photographs. Finally, I want to express my thanks to the editors and the staff of Academic Press for their unexcelled cooperation in the production of this text.

GEORGE N. AGRIOS