

Preface

Readers of previous editions of this text will notice a significant new feature of the Sixth Edition from the cover alone: the title has been changed from *Plant Physiology* to *Plant Physiology and Development*. The new title reflects a major reorganization of Unit III (*Growth and Development*) along developmental lines. Instead of separate chapters on the structure and function of individual photoreceptors and hormones, the interactions of photoreceptors and hormones are described in the context of the plant life cycle, from seed to seed. This change in approach has been facilitated by the virtual explosion of information on the interactions of signaling pathways and gene networks during the past four years. Among the many new topics that are being covered for the first time in the Sixth Edition are seed dormancy, germination, seedling establishment, root and shoot architecture, gametophyte development, pollination, seed development, fruit development, biotic interactions, and plant senescence. The resulting up-to-date, comprehensive, and meticulously illustrated presentation of plant development will provide students with an unprecedented appreciation of the integration of light, hormones, and other signaling agents that regulate the various stages of the plant life cycle.

The chapters in Units I and II covering traditional plant physiological topics such as water relations, mineral nutrition, transport, photosynthesis, and respiration, have also been extensively updated for the Sixth Edition. These processes function more or less continuously throughout the life of the plant and, in our view, attempting to insert them arbitrarily into a particular stage of the life cycle is not only misleading, it disrupts the flow of the developmental narrative. Therefore, for pedagogical reasons, we have

maintained the integrity of the physiological chapters at the front end of the book. After mastering the basic physiological processes discussed in Units I and II, students are fully prepared to focus their attention on the signaling pathways and gene networks that govern the temporal changes that occur during the plant life cycle, as described in Unit III.

Besides the title change, a second important novel feature of the Sixth Edition can be gleaned from the cover: the addition of two new editors, Ian Max Møller, Associate Professor at the Department of Molecular Biology and Genetics at Aarhus University, Denmark, and Angus Murphy, Professor and Chair, Department of Plant Science and Landscape Architecture at the University of Maryland in College Park. Max Møller served as a Developmental Editor for the text as a whole, assessing every chapter for level, consistency, and pedagogy. Angus Murphy spearheaded the reorganization of Unit III and was a contributing author on several of the chapters. Both new editors have been invaluable during the preparation of the Sixth Edition, and their presence ensures that continuity will be preserved for many more editions of the text. In addition, Wendy Peer, Assistant Professor in the Department of Environmental Science and Technology at the University of Maryland, also made important contributions to the redesign of Unit III as well as serving as a contributing author to several chapters.

Editors	Sub-editors
L. T.	I. M. M.
E. Z.	A. M.