

Recently a botanical colleague of mine was contacted by the police to see if she could help them solve a crime. A young woman had disappeared and there was reason to suspect foul play involving a male acquaintance of hers. The police had found tiny bits of plant material in the man's car, and asked if my colleague could identify them. She was able not only to identify two or three different plants, but also knew where that particular association of plants grew. She took the police to the area, and within 20 minutes they found the woman's body. The man was subsequently charged with and convicted of murder.

The field of forensics sometimes uses microscopic bits of plant material to help solve crimes, but in addition to forensics, botany today plays a special role in many interests of both major and nonmajor students. For example, in this text topics such as global warming, ozone layer depletion, acid rain, genetic engineering, organic gardening, Native American and pioneer uses of plants, pollution and recycling, houseplants, backyard vegetable gardening, natural dye plants, poisonous and hallucinogenic plants, nutritional values of edible plants, and many other topics are discussed. To intelligently pursue such topics one needs to understand how plants are constructed, and how they function. To this end the text assumes little prior knowledge of the sciences on the part of the student, but covers basic botany, without excessively resorting to technical terms. The coverage, however, includes sufficient depth to prepare students to go farther in the field, should they choose to do so.

The text is arranged so that certain sections can be omitted in shorter courses. Such sections may include topics such as, "Soils," "Molecular Genetics," "Phylum Psilotophyta," etc. Because botany instructors vary greatly in their opinions about the depth of coverage needed for photosynthesis and respiration in an introductory botany course open to both majors and nonmajors, the topics are presented at three different levels. Some instructors will find one or two levels sufficient, whereas others will want to include all three.

I have found that both majors in botany and nonmajors who may initially be disinterested in the subject matter of a required course, frequently become engrossed if the material is related repeatedly to their popular interests. This is reflected, as intimated above, in the considerable amount of ecology and ethnobotany included with traditional botany throughout the book.

"I reviewed one of the leading competitor's textbooks for this course and still feel that Stern is outstanding for the course we teach. The relatively short chapters and the ease of reading make this an excellent book for introductory botany."

Kathleen Wood, University of Mary Hardin-Baylor

ORGANIZATION OF THE TEXT

A relatively conventional sequence of botanical subjects is followed. Chapters 1 and 2 cover introductory and background information; Chapters 3 through 11 deal with structure and function; Chapters 12 and 13 introduce meiosis and genetics. Chapter 14 discusses plant propagation and biotechnology; Chapter 15 introduces evolution; Chapter 16 deals with classification; Chapters 17 through 23 stress, in phylogenetic sequence, the diversity of organisms traditionally regarded as plants, and Chapter 24 deals with ethnobotanical aspects and other information of general interest pertaining to sixteen major plant families or groups of families. Chapters 25 and 26 present an overview of the vast topic of ecology, although ecological topics and applied botany are included in the preceding chapters as well. Some of these topics are broached in anecdotes that introduce the chapters, while others are mentioned in the ecological review summaries, in the human and ecological review sections, and in the extensive appendices.

LEARNING AIDS

A chapter outline, review questions, discussion questions, and additional reading lists are provided for each chapter. New terms are defined as they are introduced, and those used more than once are boldfaced and included in a pronunciation glossary. Although scientific names are given in some instances, their use has been minimized throughout the text. However, a list of the scientific names of all organisms mentioned throughout the text is given in Appendix 1. Appendix 2 deals with biological controls and companion planting. Appendix 3 includes wild edible plants, poisonous plants, medicinal plants, hallucinogenic plants, spices, tropical fruits, and natural dye plants. Appendix 4 gives horticultural information on houseplants, along with brief discussions on how to cultivate vegetables. Nutritional values of the vegetables are included. Appendix 5 covers metric equivalents and conversion tables.

NEW TO THIS EDITION

The eleventh edition has retained the hallmark style and pedagogy that have made it one of the most enduring and popular introductory plant biology books on the market. At the same time, this edition has undergone important

revisions to: (1) enhance the visual impact of photos by adding new images and replacing others with higher-quality images, (2) update the content, revising concepts and facts as needed, and (3) modernize the art package, producing a more bold and colorful set of illustrations. Some specific improvements for this edition include the following:

- There are several dozen new photos that are more up to date, are in sharper focus, provide a better overall view of anatomical structures, and provide features that complement new information in the chapters.
- Some new artwork designs have either been modified or changed as suggested by reviewers. One example is a new diagram showing the four levels of protein structure in a plant protein (rubisco). This replaces the former illustration based on hemoglobin structure.
- Other artwork has been updated or revised for clarity. For example, in the protein synthesis illustration, an E (exit) site has been added to conform to the current model of the translation machinery. In addition, the DNA replication illustration has been extensively altered to make it easier for students to understand.
- The same emphasis on traditional life cycles has been retained, as this is considered to be one of the most important attributes of the book, distinguishing it from most other plant biology books. The life cycles provide accurate color-coding to distinguish between haploid and diploid structures. In addition, selected life cycles have been enhanced with inset photographs and artistic representations to show how these structures appear in the field, as well as with the aid of a microscope. Several dozen inset micrographs have been added to the life cycles.

“The illustrations in Stern are why I use the book. I refer, in particular, to the chapters that survey the plant kingdom. In choosing a text I want to make sure that the photos and illustrations make the point about the survey and about plant anatomy. Stern does this very well.”

L. Michael Hill, Bridgewater College

- Chapters 25 (Ecology) and 26 (Biomes) have been updated and expanded to be more comprehensive and current in coverage. New material includes information on succession after volcanic eruption, erosion during Hurricane Katrina and the recent tsunami, aquifer depletion, and global warming.
- Overall text modifications and updates, as recommended by reviewers, have been made to nearly every chapter of the book.
- Brighter colors and a more straightforward layout (with no overlapping pictures) have been incorporated as part of the presentation style to make the book more engaging.
- References for suggested readings have been updated in all chapters.

“The descriptions of the individual members of the protists are among the best I have found in an introductory botany text. The author certainly engages the reader with his ability to make botany relevant to the reader. Key strengths include the extensive descriptions of the various algal groups and their methods of sexual and asexual reproduction [Chapter 18]. Making these organisms relevant to the everyday life of the student is a major accomplishment.”

Cherie Wetzel, City College of San Francisco

ACKNOWLEDGMENTS

The valuable contributions of Dr. James Enderby Bidlack and Dr. Shelley H. Jansky, who rewrote and updated Chapters 3, Cells; 10, Plant Metabolism; 13, Genetics; 14, Plant Breeding and Propagation; 25, Ecology; and 26, Biomes, for this edition and previous editions are gratefully acknowledged. Dr. Daniel Scheirer, who contributed most of the “Plant Sciences Inquiry” boxed readings, and Dr. Manuel Molles, who provided highlighted ecological summaries for each chapter, both enhanced the text with what they wrote. The help of these gifted individuals is most appreciated.

Others who read parts of the manuscripts of various editions and made many helpful suggestions include Richard S. Demaree, Jr., Patricia Edelmann, Robert I. Ediger, Larry Hanne, Donald T. Kowalski, Robert B. McNairn, and Robert Schlising. Additional appreciated encouragement and contributions were made by Isabella A. Abbott, Donald E. Brink, Jr., Gerald Carr, William F. Derr, Timothy Devine, Beverly Marcum, Robert McNulty, Paul C. Silva, Lorraine Wiley, the faculty and staff of the Department of Biological Sciences, California State University, Chico, my many inspiring students, the Lyon Arboretum of the University of Hawaii, the editorial, production, and design staffs of McGraw-Hill Publishers, and most of all, my family. Special thanks are due the artists, Denise Robertson Devine, Janet Monelo, and Sharon Stern.

Finally I would like to extend thanks to the following reviewers who provided recent feedback on the text and the illustrations. Their help has been invaluable in shaping the eleventh edition of *Introductory Plant Biology*. Upon reaching this milestone eleventh edition, I would also like to once again extend my gratitude to the reviewers of earlier editions, who have provided considerable comments and suggestions. Although too numerous to include here, their contributions have been much appreciated.

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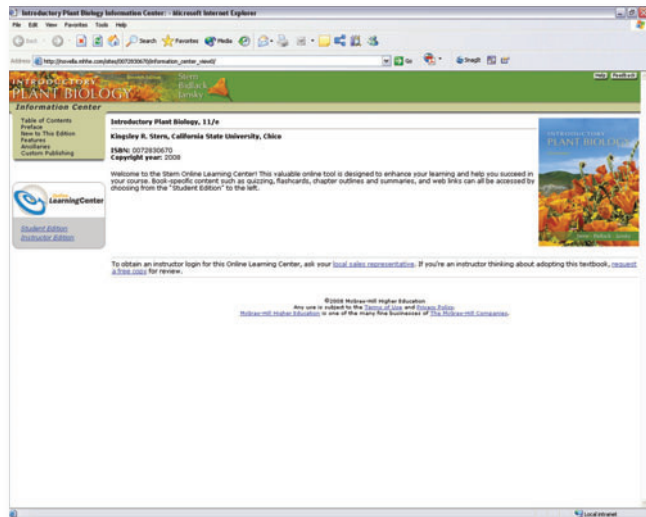
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The Amazing Lives of Plants: The Reproductive Lives of Mosses, Pines, Ferns, Flowers, and Leaves CD-ROM or DVD (CD ISBN: 978-0-07-294047-3; CD MHID: 0-07-294047-6) (DVD ISBN: 978-0-07-294339-9; DVD MHID: 0-07-294339-4)

Available upon adoption, *The Amazing Lives of Plants* includes five independent segments: “Mosses,” “Ferns,” “Pines,” “Flowers,” and “Leaves.” Their reproductive lives are presented in a vivid, full-color combination of live video footage and sharp animation. Subtitled text makes it easy to cue up for use in lecture, and the pace of the program is suitable for students taking notes.

Introductory Plant Biology Laboratory Manual, Eleventh Edition, by Stern and Bidlack (ISBN: 978-0-07-283068-2; MHID: 0-07-283068-9)

The laboratory manual that accompanies *Introductory Plant Biology* has been revised and updated. It is written for the student who is entering the study of botany. The exercises

utilize plants to introduce biological principles and the scientific method. They are written to allow for maximum flexibility in sequencing.

LEARNING SUPPLEMENTS FOR STUDENTS

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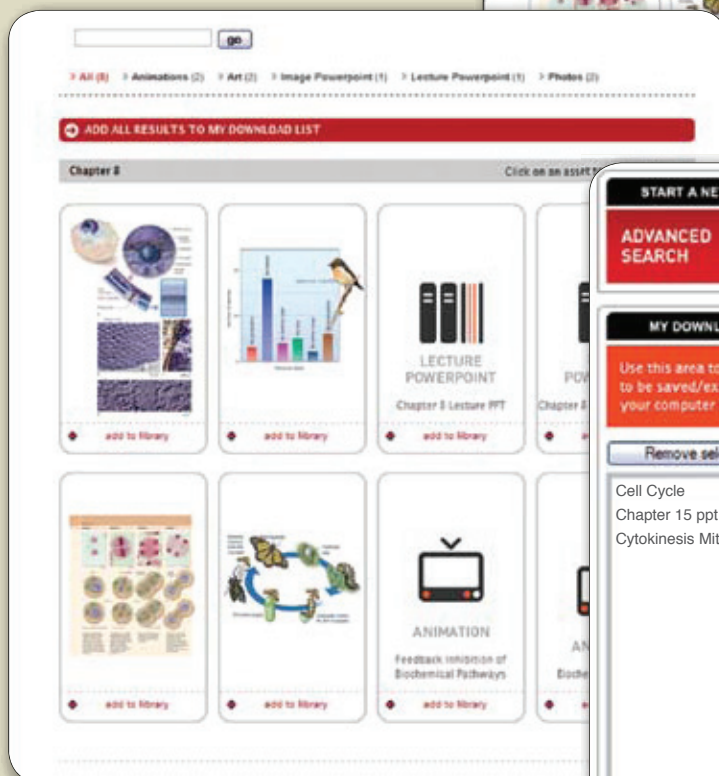
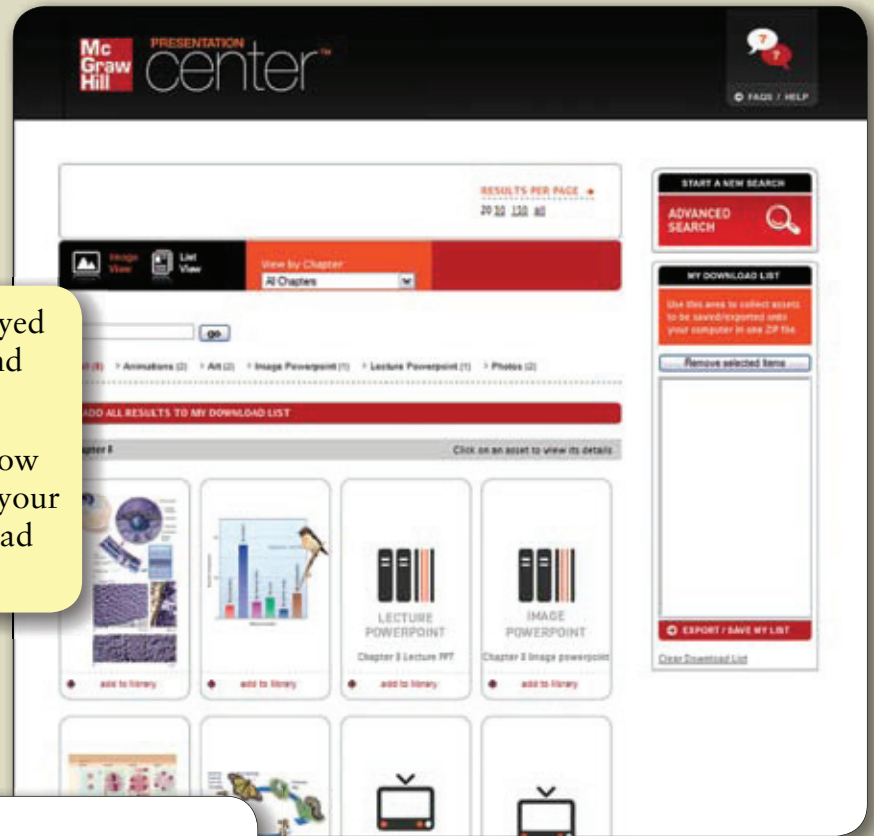
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