

Preface

The abilities to think critically and communicate effectively are the most important skills that a student can develop during his or her formal education. Consequently, we have written this practical book to help you develop those skills as you learn about plants; what plants are, how they function, how they interact with each other and the environment, where they came from, and how we use them. As is the nature of all textbooks, ours contains an abundance of interesting "facts", but the real emphasis of this practical book is how we know. We have, as much as possible, de-emphasized the details of some of our knowledge and reduced the overwhelming number of new terms that usually appear in the text. In their place, we have substituted more of the process of science.

Our emphasis on scientific process involves explaining Botany as botany is done. Specifically, we describe the competing hypotheses that Botanists have devised to answer questions about botanical phenomena, the experiments done by botanists to test these hypotheses, interpretations of data, and the many unanswered questions and unresolved conflicts that remain. This approach differs significantly from that of merely presenting definitions and the conclusions of experiments (i.e. the "facts" of botany).

We also pose many questions, some of which we do not answer and others of which we answer by showing you how botanists have addressed those questions. We do this to mirror the nature of botany: botanists generate knowledge by posing and testing hypotheses. Nevertheless, there are many things that we still do not know about plants. We hope that these questions, both answered and unanswered, will trigger your curiosity and help you sharpen your critical thinking skills.

In addition to learning about how we know, throughout this book you'll also learn about what we know. We present this information in the context of various principles (e.g. the relation of structure and function) and integrate into an information form work.

We have used these features to present information with authority, breadth, and quality. Although we have treated some topics in depth. We have not written a botanical encyclopaedia. That is, this text is not a compendium, but rather a stimulus. Because hope you develop those questions in every chapter.

We have tried to make this practical textbook entertaining and accessible; we believe these features are critical to making students better learners, instructors and better teachers. To accomplish this, we have rejected the awkward, stoic writing style typical of "scientific writing". In place, you will find an engaging text that stresses communication and understanding.

We hope that practical Botany helps you learn about and appreciate plants structure. If you have questions, suggestions, or comments about what you read, let us know.

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