

Preface

Living plants capture our attention with their bright colors, with the fragrances of their flowers, and with their uses as food plants or as medicinal herbs. The subject of chemistry, on the other hand, tends to invoke thoughts of abstract, difficult to understand concepts and is often seen as disconnected from the living world. This book intends to ease access to chemistry, particularly organic chemistry, by combining it with examples from the world of plants.

Everyday observations of the natural world may bring on questions such as “Why do leaves change color in the fall?”, “What makes roses smell sweet?”, “What makes pine cones sticky?” and “What adds the sharp taste to mustard seeds?” These questions—and many more—are answered in this book by providing an understandable introduction to organic chemistry. Many texts on plant chemistry provide in-depth information that requires considerable knowledge of chemistry. Others provide information in a narrative style, with few chemical structures. This book takes an in-between approach. After an introduction to chemistry concepts as they relate to plants, the book progresses to the fascinating organic structures of plant scents, pigments, and toxins and then concludes with human uses of plant substances.

The experiences from teaching a popular undergraduate college level course to non-chemistry majors have provided the materials for this book. The author has also taught numerous field seminars

The Chemistry of Plants: Perfumes, Pigments, and Poisons

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Published by the Royal Society of Chemistry, www.rsc.org

in plant chemistry, at botanical gardens and at national parks, addressing general audiences who were interested in plants. The questions and comments from students, and topics that people were particularly interested in, have greatly contributed to the content of this book.

The text is designed to be useful both to readers who proceed chapter by chapter, and to those who decide to select chapters of special interest. Formulas and chemical structures may look daunting at first. To make the chemistry more accessible, numerous photos of characteristic plants accompany the chemical structures.

Many people have supported me in the preparation of this book, and their help is acknowledged with deep gratitude. Joan Hamilton provided encouraging and most knowledgeable assistance to get the book project started. Prof. Marc Anderson generously provided instructions on the drawing of figures. I am most grateful to Prof. Urs Séquin, Dr. Eileen Nottoli, and Verena Rau who critically read and re-read the entire book, provided advice on content, commented on clearness, and scanned for errors. Stimulating discussions with faculty members of the Chemistry and Biochemistry Department at San Francisco State University about the book's topics provided ideas and helpful insights. Plant materials for photography, with expert plant advice and checking of plant names, were generously provided by Martin Grantham, Greenhouse Curator at San Francisco State University. The contributions of plants and helpful recommendations by staff at the University of California Botanical Garden in Berkeley, and the Regional Parks Botanic Garden in Berkeley, are gratefully acknowledged. Many thanks also go to my friends with great gardens who generously offered the bounty of their plant crops for taking photographs. I am very grateful for the interest and the enthusiasm of students and field-trip audiences that encouraged the writing of this book. My special thanks go to Janet Freshwater, Alice Toby-Brant, and the staff at the Royal Society of Chemistry whose encouragement, support, and expert editorial assistance made this book possible.

Last but not least, I am grateful to my husband Carlo for his patience and support, and for providing cheerful company on photo expeditions.