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Introduction and Plant Biology. An appreciation of the difficulties involved in investigating such a diversity of interests is important for understanding the scope of this book.

In this book, I propose to survey what is known about plant phytochemistry and the role that secondary metabolites may play in biological relationships. These relationships hopefully will also reinforce the basic concepts that function and value of the compounds within the plants themselves. Many compounds are utilized for energy or used to fulfill other requirements that involve oxygen. For example, fatty acids from triglycerides have long been recognized as energy sources for the synthesis of a germinating seed. Recently, a

new appreciation has been gained for many secondary metabolites having the ability to change in plant chemistry and morphology, and thus increasing either plant roots that were formerly uncooperative. Root colonization, root penetration, tissue occupancy, metabolic competition, allelopathy, and a vast array of other responses are but examples of these evolutionary processes.

An understanding of the biosynthetic pathways leading to secondary metabolites and a knowledge of the chemical structural types present and their distributions among plant groups have proven useful for the study of biogeographic patterns and for achieving an understanding of plant phyto-