Preface

The basic worldwide geographic framework for understanding relations between climate and plant or vegetation types involves the recognition of regular bioclimatic zones, such as tropical, temperate, and further subdivisions. In global bioclimatic zonation, one zone is the warm-temperate, which has generally warm (if not hot) summers and relatively mild winters, but with some frost, which distinguishes this zone from the tropical climates. Many warm-temperate climates are also generally humid, with year-round rainfall. As a result, the “zonal” (i.e., potential natural) vegetation of the warm-temperate zone is considered to be evergreen broad-leaved forest, such as the “laurel forests” of East Asia, southern Brazil, and the cloud belt of some parts of the Canary Islands. The trees typically have quite pliable, often glossy, thin-leathery evergreen leaves; build relatively deep root systems; and grow rapidly under the good climate conditions.

In some parts of the Northern Hemisphere, though, some more “southern” deciduous temperate (summergreen) forests, mostly oak forests, extend into the warm-temperate zone, where winters are just a bit too cold for the broad-leaved evergreen trees, though summers are still quite warm. That deciduous forests may occur regularly in the warm-temperate zone, under such conditions, was first recognized by the Japanese ecologist Tatsuō Kira, who called these forests “warm-temperate deciduous.” This book represents the first attempt to recognize and describe “warm-temperate deciduous forests” as a consistent forest type representing a consistent response to similar climatic situations around the entire Northern Hemisphere. Most of the chapters included herein are from papers presented in 2011, in a special session on warm-temperate deciduous forests (also a first), held at the annual meeting of the International Association for Vegetation Science in Lyon.

Forest composition, structure, and environmental relations are treated in this book in various ways, some emphasizing bioclimatic relationships, some following traditional phytosociological analysis, plus some other methodologies. Some chapters on more specialized aspects are also included, in particular on various aspects of two prototype warm-temperate deciduous tree species, namely, downy oak (Quercus pubescens) from southern Europe and Chinese cork oak (Quercus variabilis) from East Asia. The book begins with a general overview chapter on the concept of warm-temperate deciduousness, and there is an attempt at the end to quantify the climatic limits of potential temperate forest regions and to map them accordingly, around the entire Northern Hemisphere.

As in any large area with diverse language and cultural regions, there are problems of terminology. The terms used herein for bioclimatic zonation represent what appears to be the global consensus on concepts, types, and names. The official Chinese national classification system is quite different, however, and some terms are in direct conflict. For example, in the Chinese system, all temperate deciduous forests have been called “warm-temperate” (despite winter temperatures to -30°C or lower), and all evergreen broad-leaved forests are usually assigned to the “subtropical” zone (if not tropical). For this book, only the more globally consistent terminology is used. This is explained in the “Overview” chapter, along with an attempt to explain the Chinese discrepancy.

Another difference involves people’s names. In East Asia the family name comes first, followed by given names. For Japanese, there is no problem, because Japanese scientists
follow the Western order quite consistently when using Western languages. Chinese and Korean names, on the other hand, are shown much less consistently, and it has become fashionable among eager young Chinese researchers to use the Western name order consistently, even when not dictated by their publishers. This can be quite confusing for people not familiar with Chinese and Korean names. Family names in both Chinese and Korean are normally of one syllable, followed usually (but not always) by two given names. The problem comes when there is only one given name (one syllable), but even this can be overcome simply by observing the pattern used for other names in the particular publication. In this book, Chinese and Korean names are given in their natural order (family name first), with the two given names hyphenated; Japanese names are given in Western order. The only exception is in some registered names of phytosociological syntaxa, which may be idiosyncratic.

Literature references are given in the direct, common-sense format used formerly by the Ecological Society of America. In this format, the first author (of multiples) has the family name first and subsequent authors follow with given and family names in their normal order—without inversions and without all those unnecessary, obfuscating commas that make the gothic, but now “accepted” format so difficult to read. Note that, in the format used herein, there is no comma in any Chinese or Korean name because there can be no inversions of family and given names.

Diacritical marks are unavoidable in order to retain some correct meanings and pronunciations, especially in Japanese. For long vowels, a macron is used on o (ō) and u (ū), while the other long vowels are indicated (as in written Japanese) by doubling the vowel, i.e., aa or ii, or by the convention “ei” for long e. Although it has recently become fashionable in Japan to omit macrons in Romanization, the difference between long and short vowels is not trivial. It represents different spellings, difference in syllable stress, and often quite different meanings. For example, short o means small (小) but long ō means large (大). Other things being equal, a syllable with a long vowel is much more likely to be stressed than one with only a short vowel—as also in English and most languages. In Chinese, each syllable carries one of four possible tones. Tone marks, though, are usually not shown herein, since these do not represent differences in spelling, either in pinyin (the Chinese phonetic Romanization system) or in Western renditions.

Finally, understanding some place names, especially in China, will be much easier if the reader is willing to learn just three East Asian words. A mountain (or mountains) is shan in Chinese and san in both Japanese and Korean; ling (Chinese) is a range of mountains. Thus, [the] Changbai-Shan is the mountains along the border between China and North Korea, Fuji-san is Mt. Fuji, and the Da Xing An Ling (Chinese) is the Greater Hinggan mountain range that separates Inner Mongolia (to the west) from Chinese Manchuria (to the east).

Sadly we must also note that Tatsuo Kira passed away in 2011, at age 91. He once told me (Box) that he kept his imagination young by dividing his scientific career into roughly 10-year segments, in each one of which he studied something entirely different from before. Perhaps this is a good model for many of us—his life was a model for all of us. It seems fitting, therefore, that we dedicate this book to his memory.

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