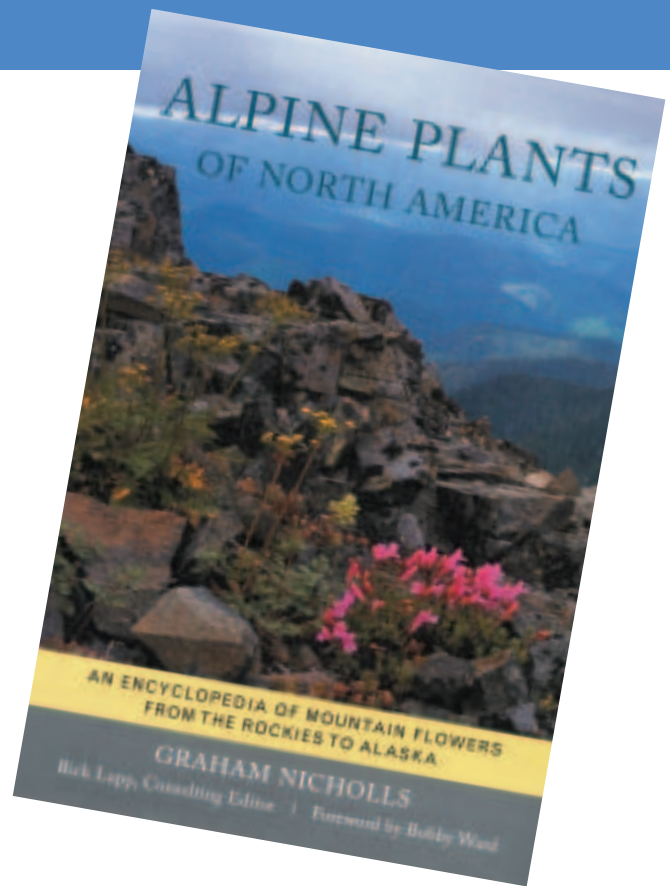


## Alpine Plants of North America: An Encyclopedia of Mountain Flowers from the Rockies to Alaska

Graham Nicholls

Timber Press Inc, The Haseltine Building, 133 SW Second Avenue, Suite 450, Portland, Oregon 97204. Hardcover, 344 p, 495 color photos, 2 maps, 19 x 27 cm (7.5 x 10.5 in), 2002, ISBN 0-99192-548-9, US\$ 50.



Graham Nicholls is an Englishman with a 40+ y passion for alpine plants. He is a horticultural researcher, writer, photographer, and expert rock gardener who has spent a good deal of his time and energy unlocking secrets to growing alpine plants in the British climate. His book *Alpine Plants of North America* is clearly a life's work and a labor of love. *Alpine Plants of North America* covers an immense piece of western North American real estate. Mr Nicholls' work covers plants growing as far north as the Brook's Range above the Arctic Circle south to the Sierra Nevada of California and the Southern Rockies of New Mexico. It is amazing how much of this immense territory the author has visited, judging by the range of location photos found in the book.

Mr Nicholls, already an experienced rock gardener, became infatuated with western North American alpine plants after a trip to the region in 1982. Along with a love of western alpinism came frustration—no publication covered this group of plants, and, more important for a plant grower, none existed with decent horticultural information. He was told that the only solution was to write one himself, particularly since one was greatly needed. Finally in 1995, with renewed encouragement from an American friend and fellow alpine enthusiast, Mr Nicholls began this impressive to look at and easy to read book. The book's extensive bibliography shows that while many major works on alpinism exist, although none focus specifically on North American alpinism.

The preface discusses the author's concept of an alpine plant, gives notes on Latin nomenclature, and includes a short discussion of collecting ethics. Nicholls' definition of an alpine plant is broad, flexible, and practical. Rejecting a strict ecological definition (a plant principally growing at or above mountain timber line), his wider concept includes many species that are not strict alpinists at all. These plants, usually cushion plants lower than 40 cm (16 in) high, are instead horticultural alpinists, whose stature and requirements (rather than ecological range) make them suitable for alpine rock gardens. I applaud his broader concept of alpinism, for it renders *Alpine Plants of North America* much more useful to the practical rock gardener, and makes for a much more inclusive treatment of mountain plants for the hiker and traveler.

Some groups of mountain plants, for example high altitude wetlands are excluded. This means that conspicuous high altitude plants of wetter situations like *Polygonum bistortoides* and *Caltha leptosepala* are not represented. Also missing are alpine plants from the Appalachians and Adirondacks of eastern North America, which Nicholls dismisses as plants that "are mainly an extension of the arctic tundra." The reader may wonder about the floristic and ecological differences between alpine and arctic tundra plants, but there is no discussion of this or of tundra per se. Nicholls may have more properly titled his work "Alpinism of Western North America."

In his discussion of plant scientific names, Nicholls deals with the thorny concepts of species boundaries, variation

within a named species, and differing botanical opinions reflected in the names given to plants. Slightly confusing, his explanation of varietal names is nevertheless important for those readers wishing to use the book as a research tool. Nicholls explains that as a non-botanist, he has simply tried to follow current thinking.

A well-organized brief summary of climate, geology, and common alpine plants of western North America is provided. He divides the territory into 4 sections: Alaska, the Pacific Mountain Systems, Great Basin, and Rocky Mountain System. The tremendous environmental variation encompassing all these ranges is succinctly presented, and maps of Alaska and the lower 48 states are included. Some common alpine plants of each region are listed. Longer lists for the serious plant hunter are arranged by state in an appendix.

The heart of this book is an encyclopedia of species, which covers 650 species and many varieties, arranged alphabetically by genus name. I prefer arrangement by plant family, so that, for instance, all members of the composite family (Asteraceae)—*Erigeron*, *Hulsea*, *Hymenoxys*, *Townsendia*—would be found together in the text. A similar advantage would be found in cases like that of the genera *Androsace* and *Douglasia*, both in the primrose family, which are separated by many pages of text even though they are very closely related—some authorities consider them to be of 1 genus, *Androsace*. To his credit, Nicholls does make reference to the close connection between genera in the *Douglasia* entry and it is clear to me that for an average user of this book, arrangement by genus name makes navigation through the encyclopedia a little easier.

Nicholls discusses each genus as a whole, making general points about its size, scope, identifying features, ecological characteristics, and often origin of the name, which I think enlivens the discussion. This is followed by short but detailed entries on individual species, including a general field description emphasizing habit, dimensions, flower color, and inflorescence type. The descriptions are infused with just enough technical language—all words are clearly defined in the glossary—to lend some rigor. Also included are altitudinal and geographical range information, as well as preferred ecological habitat. For some species in widespread use in gardens, information is provided on popular cultivars. Often, species entries are enlivened by personal anecdotes of discovery, photography, or attempts to cultivate the plant back home.

Nicholls' photographs, which accompany many but not all the entries, are outstanding and serve as successful guides to identification. Intermixed are photographs of mountain habitat which successfully give us the feel of exploring for high elevation plants in their environments.

Sections on propagation and cultivation in the home garden complete the discussion of each genus. Nicholls' experi-

ence and research is impressive, and his interweaving of detailed natural history observations with horticultural research is clearly the unifying thread to the entire encyclopedia. Indeed, the success of *Alpine Plants of North America* rests on this successful marriage of field and greenhouse expertise.

The link between site preferences and cultivation requirements is recapped in the final section of the book. Beginning with the diversity of harsh (and very different) environments in which these plants grow, Nicholls provides warnings about trying to simulate exact habitats as well as suggestions and practical information for growing plants in containers, creating suitable beds, and using rocks in the garden. An example of Nicholls' typically British wit concerns rock placement: "Many rock gardens have that 'current bun' look about them with rocks perched on top of the bed. Rocks in an alpine bed should look like icebergs, meaning that nine-tenths of the rock is buried out of sight." The tricky business of the right soil mix and nutrient support is also discussed.

Nicholls briefly discusses a major concept and seeming paradox of alpine plants in the short preface section addressing collecting ethics. While the harshness of the alpine tundra and rock scree suggests (superficially, of course) that only the hardiest of plants may survive there, the kind of environmental toughness required—tolerance of desiccating winds and low temperatures—does not at all translate into general resilience and immunity to disturbance. Nicholls says it well: "For all its ruggedness and raw force, the alpine zone is an extremely fragile habitat that is easily damaged by insensitive visitors. Even the smallest groundcovers and cushions may be hundreds of years old; in harsh alpine conditions, it may take many years for a plant to achieve decent size, and the line between life and death can be razor thin." He notes that alpine plants dug out of the wild almost never make it in the rock garden back home. His solution is seed collection and greenhouse propagation, so that these tiny, beautiful plants may be admired widely in our gardens while left to thrive in their rugged but fragile natural habitat.

— Rob Paratley

Rob Paratley is curator of the University of Kentucky herbarium and has a special interest in alpine plants.