Introduction to the First Edition

This book has grown out of our long-standing interest in wild-flowers and our increasing appreciation of the extraordinary diversity we have found as we photographed them in all parts of the state. The varied topography, soil types, rainfall, and temperature combine to give Texas more than 5,000 species. They are found from elevations of 8,000 feet in the Guadalupe Mountains of west Texas to the subtropical Rio Grande Valley near sea level, and from the Chihuahuan Desert to southeast Texas, where the annual rainfall is 56 inches.

We were tempted to include as many as possible of the larger, showier, more colorful species, as well as those harbingers of spring, the violets, bluets, and others, which have, since our childhood, promised the end of winter and the beginning of longer, brighter, warmer days. While the reader will find here many of these favorites, we have also tried to include in our selection representative specimens from all parts of the state.

We were impressed by the fact that the inconspicuous flowers often grow where nothing else is to be found. It is an arresting sight when, on the rocky slopes of the sunbaked Chihuahuan Desert, for example, one comes across the delicately beautiful Four-nerved Daisy or the Prickleleaf Gilia. Somehow their appeal is magnified by the stark setting.

People the world over draw satisfaction from studying, classifying, collecting, sketching, photographing, or simply observing

wildflowers. When circumstances deprive us of this pleasure we begin to understand how much a part of our lives flowers are—as integral and rewarding as bird songs, blue skies, rain showers, the smell of rich earth, or the crispness of a change of seasons.

We have attempted to organize this book for a broad audience, for what we might describe as the interested layperson. As with all scientific disciplines, botany has of necessity developed its own professional language. For the professional that scheme is necessary and valuable, but too many laypersons get lost in terminology when they must wade through it in order to make the simplest identification. A lapful of dictionaries, textbooks, and glossaries is neither essential nor especially conducive to the enjoyment of flowers. We have included a short glossary of terms that are regularly used to make descriptions of flowers more meaningful and precise. These terms should not distract one from the purpose of the book, which is to promote the recognition and enjoyment of wildflowers. It is our hope that the organization will prove satisfactory both for readers seeking no more than a quick confirmation of a plant's identity and for those embarking upon a more sophisticated study.

Identification of flowers down through family and genus is rarely very difficult, but determining the species can be tedious and often frustrating. This is true for the scientist as well as the knowledgeable amateur. In the preparation of this book we have sometimes found disagreement between eminent scientists as to the classification of flowers. It has extended not only to the species but also sometimes to the genus, and occasionally even to the family. For example, there are many species of *Verbena* in Texas. Some of them differ so slightly that no amateur could detect any difference whatever, nor could the scientist, either, without a microscope. Based on these minute variations, a flower is assigned to one species or another. Over a period of time, however, botanists finally come to a common agreement about most plants. In the process, old classifications sometimes disappear and are replaced by new ones. This should not discourage the amateur, however, who may find the genus to be sufficiently definitive. Should one's interest carry one further, a 10X hand lens will be helpful in all cases, essential in some.

Though books such as this one typically devote much space to matters of plant classification, it is not necessary to know the name of a flower in order to appreciate it. People drive hundreds of miles in favorable years to see the desert floor in bloom, or to enjoy a high mountain meadow ablaze with the brief, intense colors of summer, without knowing the name of a single flower they see—and they are amply rewarded. A personal experience one spring made this point convincingly as we stopped to see a man and his wife in a lonely location surrounded by forty miles of desert. The husband was not there, and his wife told us, “Bill rode up the canyon this morning to see if the wildflowers are blooming.” He returned shortly with a small bouquet he had gathered. These people knew the flowers—knew them more completely and appreciated them more fully than most persons we have known; where they grew, when they bloomed, their size, shape, color, markings, and other details. We realized again that it is better to know the nature of a flower than its name.

Still, most people want to know the names of flowers, as this facilitates communication and seems to bring the flowers closer to us. If they do not know the name they will give it one; hence, the many common names. Since common names vary from one place to another, they are not useful to denote particular plants. We have included common names but have also used the Latin names, which are definitive and do not vary from place to place.

The distribution of flowers over the state is constantly changing because their seeds are dispersed by wind, water, birds, animals, automobiles, and other agents. We can describe the general areas where different species grow, but a flower is often found well beyond its generally accepted range. Simply put, a flower grows where you find it. The Texas Department of Transportation has done a fine job of seeding the wide rights-of-way along our highways with native flowers and does not mow the vegetation until after the flowers have gone to seed. This has resulted in a remarkable floral display in many areas of the state. Even in areas never touched by human efforts at reseeding, numbers of species can be found along every road. They may not be obvious to people who are hurrying from here to there, but those who take a break and step out of their automobiles will be surprised, if not refreshed, at

the display almost at their feet. We have often stopped in the most unlikely places—what some would call “waste places”—and have rarely gone unrewarded.

Blooming periods also vary, and many times a species that blooms in the spring will bloom again in the fall if the moisture and temperature are favorable. This is especially true in southwest Texas, where the blooming period is often related as much to moisture as it is to the season of the year. Sometimes a species will disappear from the landscape and not be seen for several years, but under favorable conditions it will reappear in impressive numbers.

Pollination of flowers is an important process, both to the flower and to the insect that accomplishes it. Insects are attracted to flowers by their color, fragrance, or nectar. It is interesting that colorful, conspicuous flowers are seldom fragrant, as fragrance is not necessary for them to attract insects. The honeybee is perhaps the best-known insect in the pollinating process, assisting the plant and making honey at the same time. Farmers are glad to pay beekeepers to put bees in their crops as it increases the yield substantially. To us, however, butterflies are more interesting, as they are sometimes as beautiful as the flowers. In photographing the flowers of some species, we often ended up spending more time photographing the butterflies that were attracted to them.

One of the most specific relationships in the pollinating process is that of the *Yucca* and the *Pronuba* moth, which have become so interdependent that neither can survive without the other. The moth does not visit the flowers of any other species but makes sure it pollinates this one well. It gathers a ball of pollen from one flower and deposits it on the pistil of another, even rubbing it in with its head after laying its eggs half an inch below. When the larvae develop they feed on the seed. Of the thirty or so species of *Yucca*, of which Texas has several, all except one depend on a species of the *Pronuba* moth for pollination, a different moth species for each plant species. The moth does not eat the pollen or the nectar, but the larvae live in the plant's ovary, thus perpetuating their own species and that of the *Yucca*. No moth, no *Yucca*, and vice versa.

Many flowers close at night, some by day. We had an interesting experience with one of them—*Hibiscus lasiocarpus*, or False

Cotton—late one afternoon when we stopped to photograph it. Several of the blossoms had already closed so tightly that it seemed as if they had never opened. Carefully we pulled the petals apart on one of them to see how they overlapped each other, and when we lifted the last petal we found a bumblebee right in the center. We opened seven others and found bumblebees in five of them. We did not know whether they had chosen the flowers as a good place to spend the night or whether they had inadvertently stayed past closing time and were trapped.

All of our photographs were taken in the field where the flowers grew in their natural environment. We like to show their natural habitat, to put them “in their place.” Usually we take two pictures—one of the whole plant and a close-up of the flower. This has presented some difficult choices in selecting pictures for this book, as we could not include both.

Photography is always rewarding but can sometimes be tedious. When, for instance, one is photographing a west Texas flower in March, and a strong wind whips the long-stemmed flower 180 degrees in a fitful dance for five minutes without letup, and you wait for that one fleeting instant when it comes to a dead stop, with the merciless sun burning your face as you wait—well, it takes all of one’s patience and half one’s religion to maintain equanimity. At that point, there is a good argument for removing the flower to a protected area and composing the picture in leisurely comfort.

In east Texas it is much the same. You set up for a picture only to find you are knee-deep in grassburs, that you have aroused a mound of fire ants or brushed against a nettle, or that you have become host to chiggers, ticks, or mosquitoes. But then, what satisfaction would there be in walking up to a flower on a calm, clear day, setting up the tripod, and “pulling the trigger”?

Many wildflowers are suitable for gardens, and we have mentioned some of these in the text. Persons interested in using them in home landscaping will find many seed companies that specialize in wildflower seeds. The Lady Bird Johnson Wildflower Center’s website (www.wildflower.org) serves as a clearinghouse for information on native plants, seed collection, commercial sources, and wildflower propagation.

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CAMPBELL LOUGHMILLER (1906–1992)