

FLOWERS OF THE GREAT SMOKIES

JESSE M. SHAVER, DEPARTMENT OF BIOLOGY—GEORGE PEABODY COLLEGE

Different people are attracted to the Great Smoky Mountains for different reasons. The lover of beautiful scenery visits them to feast his eyes on their varied forms and colors; the hunter and the fisherman find here abundant supplies for gun and rod; the business man sees in the Great Smokies power for turning great turbines,—hardwood to build splendid interiors and costly furniture, and a great host of tourists who will bring with them a golden tide of cash money.

For some of us there is another reason why we are personally interested in this project. We want a place where the wild life of our mountains will be preserved and made accessible for study. We want a sanctuary for our rare and beautiful mountain flowers, birds, and trees. To call attention to some of the most beautiful and rare plants of this region is the purpose of this paper.

As we approach the lower mountain slopes we are quite likely to follow a stream. Here every submerged rock is likely to be coated with the thread-like masses of the Mountain River Weed (*Podostemon abrotanoides*), which in summer will have small flowers about the size of a pin head. Pond weeds (*Potamogeton claytoni*) occur near the margins of the stream and its course is marked by tangles of Mountain Laurel (*Kalmia latifolia*) on the lower slopes of the ravines. Here also occurs the dense masses of Dog Hobble (*Leucothoë catesbaei*) which the mountaineers claim entangles dogs or other large animals when they carelessly run into its dense thicket. Miss Lounsberry in *Southern Wild Flowers*, says that the mountaineers of North Carolina claim that bears can beat their way through this tangle and thus escape the dogs which cannot follow. In winter it is very pretty due to the red flower buds. It is much used for decorations, even being sold on the market near Christmas time. In common with the Mountain Laurel (called locally "Ivy"), and some other plants of the Heath family, it is poisonous to live stock although rarely eaten except by very hungry animals. The Flame Azalea (*Azalea lutea*) occurs on the slopes by these mountain brooks. Bartram was much impressed by this Azalea, and in his *Travels* says: "This epithet, *Fiery*, I annex to this most celebrated species of azalea as being expressive of the appearance of its flowers which are in general of the color of the finest red leather, orange and bright gold, as well as yellow and cream color. These various splendid colors are not only on separate plants, but frequently all the varieties and shades are seen in separate branches on the same plant, and the clusters of blossoms cover the shrubs in such incredible profusion on the hillsides, that suddenly opening to view from dark shades, we are alarmed with the apprehension of the woods being set on

fire." Miss Lounsberry states that solid acres are sometimes covered with its wonderful bloom. Three other azaleas also occur in these mountains, *Azalea nudiflora*, *Azalea arborescens*, and *Azalea viscosa*, but the Flame Azalea is the most lovely of all.

Further up the slopes where they are dryer occurs the Mountain Dog Hobble (*Leucothoe recurva*) with wand-like, recurved branches, dense pendulous racemes of waxy flowers and in autumn with brilliant red leaves. Here also occurs the Mountain Fetter Bush (*Andromeda floribunda*) with its evergreen leaves and numerous pure white flowers—a beautiful plant but rather uncommon. In places the fringe tree occurs in numbers. Gattinger in his *Flora* speaks of it as occurring in dense groves on the Potsdam Limestone above Parksville in greater vigor and abundance than he had ever before witnessed: and doubtless these conditions exist in other sections of the mountains. In the deep mold nestle rarely beautiful orchids such as *Hexalectris aphylla*, *Peramium pubescens*, *Pogonia ophioglossoides*, *Pogonia verticillata*, *Cypripedium reginae*, *Cypripedium acaule* (the Moccasin Flower), and *Cypripedium hirsutum*. "Prostrate and decaying trunks are completely wrapped up in mosses, liverworts and lichens, for which this region is a selected homestead." "Embedded in the soft pillows of moss, some delicate, shade-loving plants enjoy a well-protected and concealed existence—the Mountain Bluets (*Houstonia serpyllifolia*), the frail and subtle *Circaea alpina*, Canada and Downy Yellow Violets (*Viola canadensis* and *pubescens*), and the span-high *Mitella diphylla* or Miterwort, with a spike of white flowers, followed by miter-shaped seed capsules." Rare ferns occupy the crevices and the club moss (*Selaginella* sp.) occurs where water seeps over rock ledges.

In the moist and shady gorges, the fern-like leaves of the Bleeding Heart (*Dicentra eximia*) seek to hide the beautiful hearts while the Climbing Fumitory (*Adlumia fungosa*) with its neat and dainty foliage and flowers, blooms nearby. In the shrubby undergrowth occurs the rare shrub, Buckleya (*Buckleya distichophylla*). "Of all the rare plants in America, it is one of the most rare. In experimenta with it at Biltmore, it was discovered that it was a parasite on a great variety of hosts but that it preferred the roots of the Hemlock (*Tsuga canadensis*). Similarly, the Oil Nut (*Pyrularia pubera*) which accompanies Buckleya in the underbrush, was a parasitic plant, but with a great variety of hosts. According to Miss Lounsberry, the mountaineers call the Oil Nut, "rabbitwood," because the rabbits in winter gnaw its bark, almost completely peeling it in some cases. Gingseng (*Panax quinquefol*) the "sang" of the mountaineer, still may be found, although it is now rare. Still many regard its roots as a cure for all diseases and an antidote for all poisons. In these shady places Smooth-leaved Dutchman's Pipe (*Aristolochia macrophylla*) with its queer pipe-like flowers and large leaves, luxuriates.

Climbing Bitter Sweet (*Celastrus scandens*), Honeysuckles (*Lonicera flava* and *Dioica*), and the Bush Honeysuckle (*Diervilla trifida*) help to make up the undergrowth. The Climbing Bitter Sweet has pretty red berries which hang on far into the winter and make very pretty decorations. On the drier slopes buttercups, such as *Ranunculus fascicularis* and others may be found.

"A little yellow buttercup
 Stood laughing in the sun;
 The grass all green around it,
 The summer just begun,
 Its saucy little head abrim
 With happiness and fun."

On the slopes are found also the Trailing Arbutus (*Epigaea repens*) "snugly lying on the ground its elfin pink and white face hidden under the grim and rusty leaves." It is also called in some sections the Mayflower, because it is thought to be the first flower which greeted the pilgrims on their arrival at Plymouth Rock.

At the summit of the mountains are many very rare and lovely plants. The Purple Laurel or Catawba Rhododendron (*Rhododendron catawbiense*) forms immense thickets on these summits which in June when it is in flower, are thickets of pink with a little fir (*Abies fraseri*) mixed in for contrast. The scene is then one of indescribable beauty. Lower down these thickets will be formed of the Catawba Rhododendron mixed with the Great Laurel (*Rhododendron maximum*), a rhododendron of a lighter pink or almost white color. At the edges of the clumps of rhododendrons may occur clumps of the Mountain Heather or Sand Myrtle (*Dendrium buxifolium*), a plant which is characteristic of the sandy pine barrens of New Jersey. Other rare plants of the mountain summits are: *Solidago glommerta*, *S. monticola*, *S. spithamea*, several species of *Saxifraga*, the *Diphylcia cymosa*, *Sedum roseum*, *Geum radiatum*, *Geum geniculatum*, *Boykinia aconitifolia*.

Although none of the summits of the Smoky Mountains are bare of vegetation or of timber, there are small areas where the growth is of low shrubby or herbaceous vegetation. Here we have small examples of what have sometimes been called mountain meadows. "Various shrubs and herbaceous plants, which are indigenous to the latter region [Northern Ohio], and do not now occupy the intervening zone, luxuriate in this cool and cloud-enveloped zone. The glory of the prairies has passed away in the Middle and Northern States, but their untainted splendor survives here in these untrodden mountain meadows."—*Gattinger*. Among the shrubs are several species of Huckleberry or Blueberry (*Vaccinium sp.*), *Stuartia* (*Stuartia pentagyna*) with its large and showy white flowers, Round-leaved Currant (*Ribes rotundifolia*), two species of Holly (*Ilex monticola* and *mollis*), Wintergreen

(*Gaultheria procumbens*), the Arborescent Azalea and a low Creeping Willow (*Salix humilis*).

Gattinger says, "The gems of this conservatory, however, are the herbaceous plants, which thrive here with unusual vigor." In moist places is the Marsh Marigold (*Caltha palustris*) with its great masses of yellow flowers—each flower one and a half inches across—making golden vistas in the marshy places.

"The lush marsh marigold shines like fire
In swamps and hollows gray."

Asa Gray's Lily (*Lilium grayi*), named after the man who first found it on Roane Mountain in 1840, and the Carolina Lily (*Lilium carolinianum*) are strikingly beautiful with their orange flowers. The Carolina Lily may grow as high as seven feet and have as many as twenty-five flowers on a stalk. It is very abundant here. The Bunch Flower (*Melanthium virginicum*), grows to the height of five to six feet and has hundreds of small, star-shaped, cream-colored flowers in an immense spreading panicle. Some of its leaves may be eighteen inches long. Various *Stenanthiums* rise to the height of four or five feet. The Purple-flowering Raspberry is here with its large showy flowers and big, simple leaves. The Wild Indigoes—both White and Blue (*Baptisia alba* and *tinctoria*) join with Oswego Tea (*Monarda didyma*) to add to the riot of color. The grasses, too, are tall growing.

Now we are at the top of the mountain and we have finished—just a glance, it was, at some of the wonderfully lovely and beautiful plants found on a trip from the foot to the top of the Smoky Mountains. May this trip stimulate you to want to know more of the exquisite plant creations in Tennessee, and to travel *on-foot* through some of this fairy land.

Gattinger, the pioneer Tennessee botanist, said, "My travels had no resemblance with the rambles of the roaming nomad who prostrated himself before the phantom of the burning bush and received a mission for conquest.

"My path was lighted by a milder sun; it led over humming and blooming meadows to the silent forest, where a friendly Dryad received me into her shade, inviting to musing repose. She interpreted to me the sounds of the rustling leaves, the chirping of the cicada, the melody of the sweet songsters, and enjoined me to search and reason." I could wish no higher success for your travels.

"Come ye into the summer woods;
There entereth no annoy;
All greenly wave the chestnut leaves,
And the earth is full of joy.

"I cannot tell you half the sights
Of beauty you may see,
The burst of golden sunshine,
And many a shady tree."

—Mary Howitt.