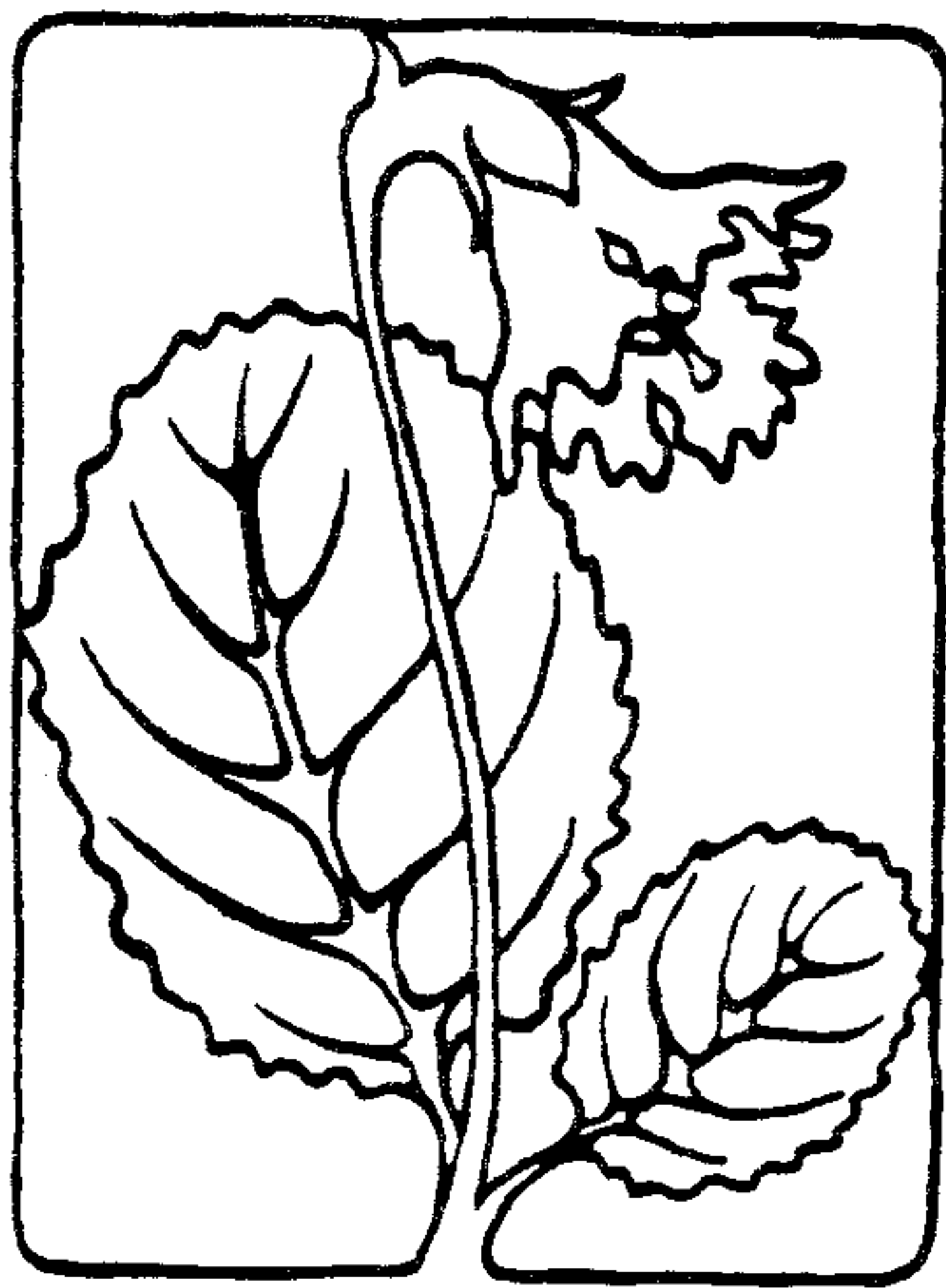


SHORTIA

NEWSLETTER OF THE
WESTERN CAROLINA BOTANICAL CLUB

AUTUMN 1990



DOROTHY RATHMANN, Editor

OFFICERS

President:	Bill Verduin	Treasurer:	John Saby
Vice President:	Dean Crawford	Recorder:	Elton Hansens
Secretary:	Charlotte Carman	Historian:	Louise Foresman

FROM THE PRESIDENT.....Bill Verduin

True, sometimes bigger is better -- as in ice cream cones! We all enjoy big displays of flowers -- Frying Pan Gap, Bee Tree Gap, the meadow at Black Camp Gap and, of course, the Turk's-cap lilies. Spectacular in size, in number, or in variety and we "ooh" and "aah" and enjoy the beauty.

But small is beautiful, too. Just because it is small we often miss the beauty. Our loss is regrettable. The mitrewort in the spring woods is a tiny flower of spectacular beauty under a hand lens. Spiderwort is still in bloom -- have you looked closely at the stamens? Who would have thought there was so much beauty in an otherwise mundane flower.

And that pesky mint family -- hard to tell apart -- but have you looked closely at the hoods and the lips and the aprons? Just the architecture of some flowers -- the orchids and milkweeds come to mind -- is marvelous to behold.

I know I'm laboring a point I've made often in recent years, but I do not yet see a great many hand lenses on our field trips nor much use of those present. As I use mine more and more often, I'm convinced we are missing a world of beauty begging to be seen, appreciated and enjoyed.

ADDITIONS TO 1990 MEMBERSHIP LIST

Hendersonville, NC 28739 unless otherwise noted

- *Nolan, Walter & Ellanor, PO Box 213, Penrose, NC 28766.....
6642 Hyde Grove Ave., Jacksonville, FL 32210
- Tooley, Gordon & Pat, Rte. 4, Box 172, Brevard, NC 28712..... 883-8024
3423 Fiddler's Bend, Amelia Island, FL 32034
- *Wellborn, Jeffrey & Patricia, Rte. 1, Box 193 (28792)..... 685-0115

* New Member

PHOTOS NEEDED FOR HISTORY BOOK.....Louise Foresman

Many of you may know that my camera has been "on the blink" for most of the spring and early summer. Consequently we have few pictures of our trips for the 1990 History Book which presently is being put together.

Also, we have no pictures prior to 1982. I think some of you must have photos taken during the early years of the Club. I particularly would like some of members and officers for the Club's first decade.

If any of you have photos (either slides or prints) of people or of the trail and surrounding area, please send or bring them to me. After copying, I will see that they are returned to you promptly. Thank you!

THE APPALACHIAN MIGRATORY CORRIDOR

(Excerpt from article by Murray Evans in THE HIGHLANDS BULLETIN, a publication of the Southern Appalachian Highlands Conservancy, in 1989)

"The above name is my invention for an idea whose time is coming, but which is by no means my own. We talk about biodiversity, land ethic, natural areas, endangered species, even megaherbivores on the mountain. We tend to think of conservation as static: National Parks, National Forests, parks, natural areas, a buffer zone around an endangered bat cave, a preserved bog for the bog turtle, high elevation preserves for the Southern Appalachian endemic and disjunct plants and animals, or even a way of life.

"All this assumes that our environment (be it biological, geological, climatological, or whatever) is static; but it's not. Change and adaptation is.....

"When we set aside a patch of ground to preserve an organism, there is absolutely no guarantee that it will stay there. It may stay there long enough to satisfy our short term needs. But in the long run there is a good probability that what we think we want to save will move out because conditions change to the point where the organism is no longer adapted to that place which we have preserved for it.

"The idea of an Appalachian Migratory Corridor then becomes fairly obvious. The new idea is not new. The Appalachians are a mountain arc that extend the now northern biota far into the southern reaches. The corridor could be more than just a foot path for bipeds, The Appalachian Trail. It could be a corridor wide and diverse enough to allow natural migrations to take place in the face of natural climatic change. It could be relatively wide through National Parks, National Forests, and other major preserves such as the Adirondack Preserve.....

"Adjustments would be a necessity where the 'corridor' encounters settlement and industry. We need to explore adaptations of our land ethic that could combine natural areas with appropriate settlement and land use.....

"This mingling of natural area with appropriate land use, private and public, is where I see the Roan Highlands and SAHC. We could be part of an 'Apmicor'."

RECORDER'S REPORT.....Elton J. Hansens

In the Summer 1990 issue of Shortia we detailed plans for more useful records of field trips and other meetings and this project moved forward in the last 3 months, when 17 trips were scheduled. Profiles, trip reports and lists of plants in bloom have been prepared for 13 of these trips. One trip was rained out and complete reports could not be finished on the other two. The reports are both interesting and informative.

TIDBITS FROM TRIP REPORTS.

Attendance ranged from 4 to about 40. The Moore's Cove trip on May 4 was rained out. The Roan Mountain trip on July 9, because of threatening weather, was changed to Mount Mitchell and Bee Tree Gap on the Parkway. We go to Craggy Gardens to see Rhododendron catawbiense and this was a complete bust this year. Not a single blossom or bud was seen. Displays of ferns were noteworthy at Big East Fork Trail on May 14 and Henry Creek on July 6. Sometimes an insignificant flower puts on a significant display; such was the case with Circaea quadrisulcata, enchanter's nightshade, in a small area on the Henry Creek trail.

The Day at Holmes State Forest resulted in a fine hike on the Long Trail in the morning, bountiful food, and a hard shower about 1 p.m. The crowd cleared out fast. Pinnacle Mountain delivered with some unusual flowers and also stings by yellow jackets. Anyone who is allergic to stinging insects should be sure to carry a protective kit on all trips.

Particularly fine floral displays were seen at Frying Pan Gap and Buck Spring Nature Trail. Bee Tree Gap on July 9 was a riot of color -- almost a solid carpet of bloom. Phlox, whorled loosestrife, brown-eyed susans, yarrow, columbine, ox-eye daisies and many others contributed to a spectacular display. Big Laurel Creek -- By general agreement we should not schedule another trip here at this time of year -- try September next time.

A LIST OF UNCOMMON FLOWERS seen this quarter is an arbitrary selection by the Recorder.

- | | |
|----------------------------|----------------------------------|
| Corydalis flavula | yellow corydalis |
| Delphinium tricorne | dwarf larkspur |
| Dodecatheon meadia | shooting star |
| Orobanche uniflora | one-flowered cancerroot |
| Potentilla tridentata | three-toothed cinquefoil |
| Thalictrum clavatum | lady-rue |
| Adlumina fungosa | climbing fumitory (not in bloom) |
| Cypripedium calceolus | yellow lady's slipper |
| Habenaria psycodes | purple-fringed orchis |
| Circaea alpina | dwarf enchanter's nightshade |
| Helianthemum canadense | frostweed |
| Apocyanum androsaemifolium | spreading dogbane |
| Lysimachia ciliata | fringed loosestrife |
| Aureolaria pedicularia | fern-leaved false foxglove |
| Lechea racemulosa | pinweed |
| Hypericum gentianoides | pinweed |
| Liatris spicata | spiked blazing star |
| Shrankia microphylla | sensitive briar |
| Stylosanthes biflora | pencil flower |
| Talinum teretifolium | fameflower (buds) |
| Tephrosia virginiana | goat's rue |
| Arenaria groenlandica | thyme-leaved sandwort |

LET'S TAKE A WALK.....ELTON J. HANSENS

Sun drenched fall days are a good time to go exploring for new experiences in nature. Let's take this walk through some open meadows and along roadsides where we will look especially for goldenrods. As we move along we will also recognize asters, sunflowers, Joe-pye-weed, and many others which, along with goldenrods, belong to the Asteraceae (Aster family). These are also called composites referring to the old family name Compositae.

All composites have highly specialized flowers and their description requires a special vocabulary. A few terms will be included here. That portion of the plant which has flowers is called the inflorescence and the individual flowers are in heads. Each head of the goldenrod is more or less cylindrical and is enclosed in a sheath of bracts called an involucre. To see the actual flowers tear away the involucre and with a hand lens you can see the tightly packed bouquet of minute yellow flowers. Note that many, many heads usually make up the inflorescence. The inflorescence may include many branches of the plant or be confined close to the main stem.

As we move along pick an aster or a sunflower and satisfy yourself that the inflorescence is in heads. In these flowers we have large "petals" projecting from the head which are known as ray flowers and they surround the many tubular disk flowers in the rest of the head.

Characteristics of the stem, leaves and inflorescence are used in identification: e.g. stems are smooth or hairy, leaves have 1 or 3 main veins, leaves are smooth or rough, toothed or entire, the inflorescence is corymbose, paniculate or racemose, etc. Of course, the details of the inflorescence are important for determination of the various species. Obviously, identification of Solidago is difficult when such minute characteristics are necessary. Not all authors agree on the details of some species.

Our best source of information on goldenrods is the authoritative "Manual of the Vascular Flora of the Carolinas" by Radford, A. E., H. E. Ahles and C. R. Bell. They list 39 species of Solidago, 38 goldenrods and one silverrod.

Identification may be somewhat easier using the 2-page "Key to Western Carolina Solidago" by Harvey Krouse, a former president of WCBC. This typewritten key is available from the WCBC Recorder and includes just the species in our area. In my experience, this key is difficult and I become very frustrated trying to identify any but the few easy goldenrods.

As we walk, paying special attention to goldenrods, we are impressed by the grace and beauty of the plants. To enjoy them we do not need to know the details of plant structure nor do we need to indulge in the difficult task of identifying the plant species. The masses of flowers and their color cause us to pause. The sheer beauty is enough.

Goldenrods are attractive to many insects especially on a sunny day when the plants are in full bloom. Nectar and pollen attract many kinds of bees, wasps, parasitic wasps, beetles, butterflies, skippers, moths and other insects. Honey bees make up a goodly portion of the visitors. Back in their hives the nectar is converted to the distinctive goldenrod honey, a well known robust flavored honey. Butterflies and skippers add beautiful color to the scene as they rest and feed. Look closely and you can see the proboscis being unrolled and successively probing the tiny flowers.

Not all insects visit goldenrods for nectar and pollen; many feed directly on the leaves, stems, and inflorescence either by eating these plant parts or by sucking out the juices. Many tiny beetles and caterpillars are consummate feeders. Pennsylvania soldier beetles are attractive yellow and black beetles about 3/4 inch long which are very active on goldenrod and feed on pollen and nectar. One of the more striking beetles attracted to the feast is the long-horned locust borer. It is yellow and black. Probably you will also recognize fireflies.

However, I am more interested in the various dramas that are played out on the goldenrod stage. I once took a picture of a butterfly which remained remarkably still. Only after I finished shooting did I notice, concealed among the heads, the crab spider which had captured the butterfly and killed it. You must look sharply to detect these spiders but they are often there. Similarly the cute little ambush bug, about half an inch long, will crawl down between the heads, anchor itself with four legs and hold the powerful forelegs which are modified for grasping in readiness to capture an unsuspecting insect. I have seen one of these insects with its beak inserted in a honey bee and very recently saw a spotted cucumber beetle in the grasp of an immature ambush bug.

Just today I visited a plant and picked off a curled leaf and inside was a small ladybird beetle larva gobbling down an aphid. Plants like goldenrods which attract so many kinds of insects also attract an array of parasites and predators. These insects include sucking insects such as the ambush bug and assassin bug and chewing predators including the praying mantis and ladybird beetle and its larvae.

The most abundant insects on goldenrod are aphids. They are so small that many people never see them. Let us look at a colony closely. The colony starts in the spring when the eggs hatch. The tiny nymphs grow to mature females in a short time. These females, without mating, give birth to nymphs which soon mature into more females. One generation after another follows in rapid succession. Sometime in the fall winged males and females are produced and these mate and lay eggs, often on a different plant. These eggs hatch the following spring. Because I do not know which aphid species we have been watching I can't be sure of the precise details of the cycle. Many aphid species vary from the usual life history.

Because aphids produce living young and because all stages feed almost constantly, aphid populations grow to unbelievable numbers completely covering the plant and ultimately destroying it. Look sharply at the aphid colony and you will see all sizes of nymphs, many molted skins, and perhaps females giving birth to young.

What a marvelous place for predators! Look for them among the aphids. Both larval and adult ladybird beetles feed voraciously on aphids. Maggots of syrphids (flower flies) also live in aphid colonies and eat large numbers of their aphid prey. None-the-less predators can rarely keep up with the aphid reproductive ability.

We could continue to discuss many other relationships between insects visiting goldenrod and between the plant and the insects. One more might be mentioned and that is the goldenrod gall. As you look at goldenrods watch for round swellings on the stems. These are caused by the goldenrod gall fly. The female fly lays an egg in the stem and the plant responds by forming the gall. The fly grows through its life-stages in the gall and the following spring emerges as an attractive fly with patterned wings to repeat the cycle.

Enough for this walk.

LOOK AGAIN !

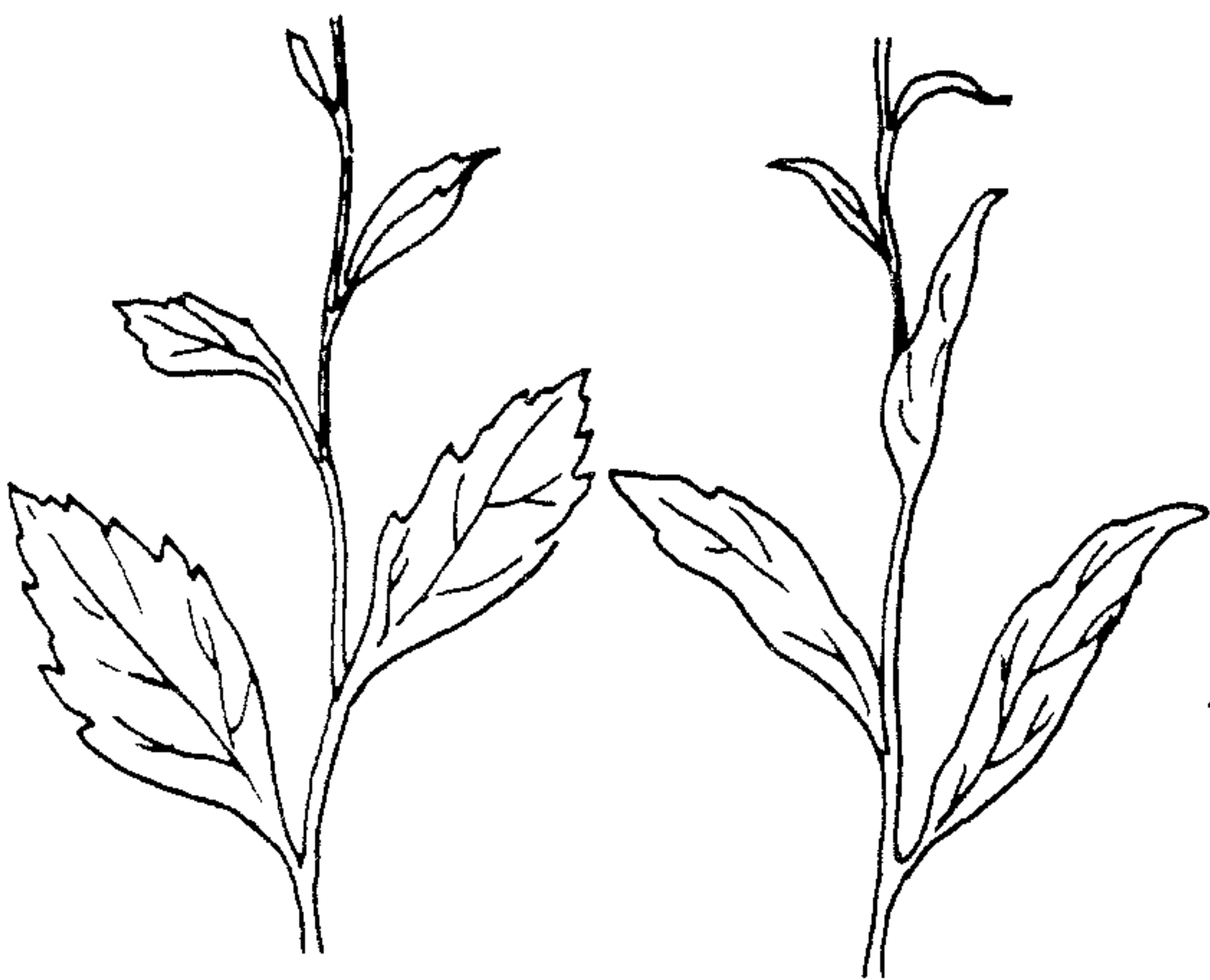
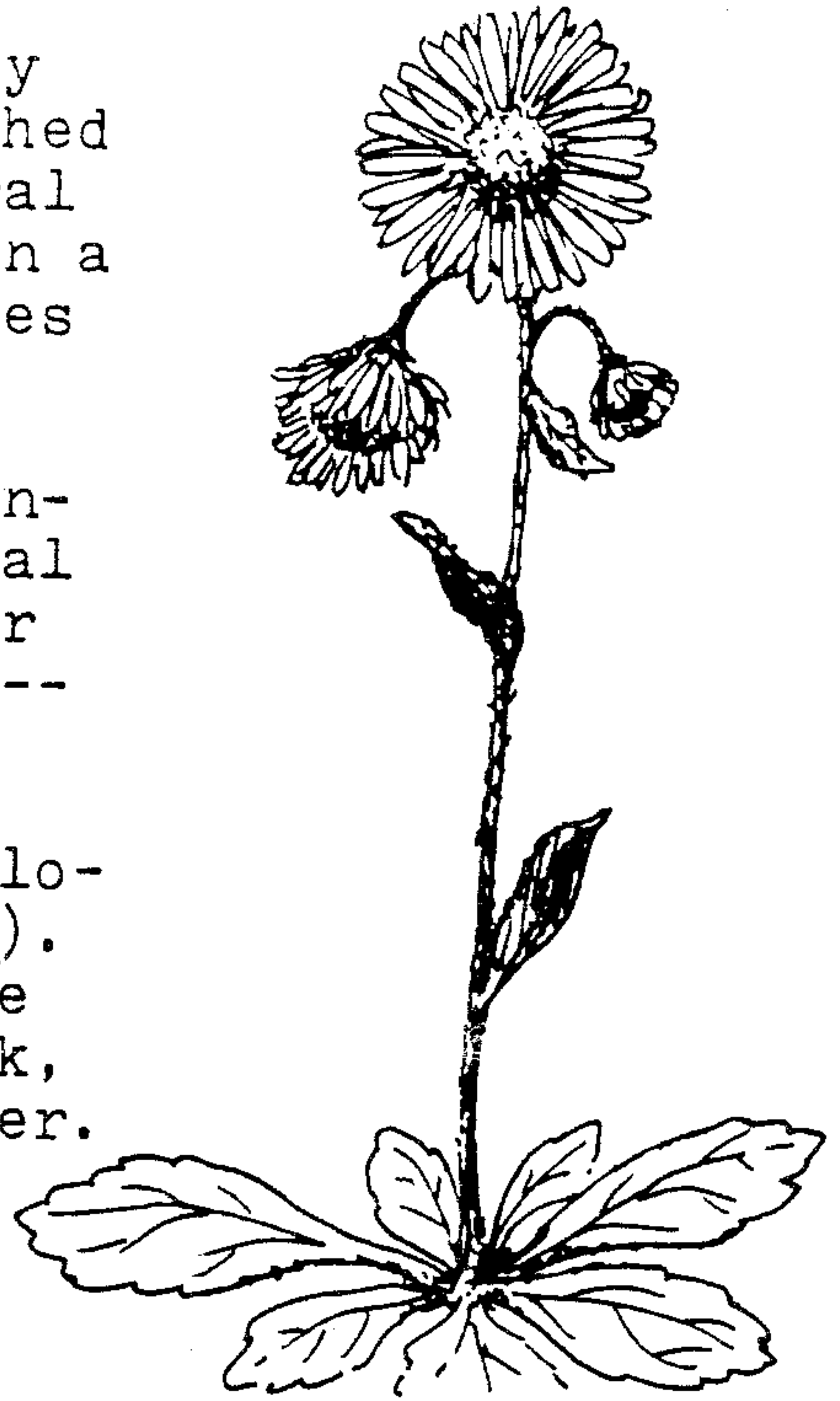
To anyone who is perplexed by the multiplicity of Aster species the Fleabanes (Erigeron) are a welcome relief, since only five kinds are to be encountered in the western Carolina mountains.

As a group, they are recognizable by their many ray-flowers, and can be distinguished from the Asters by the fact that the involucre bracts are of uniform size and are arranged in a single row instead of overlapping like shingles on a roof.

Erigeron pulchellus, or Robin's Plantain, is a hairy plant that arises from a basal rosette of leaves in early spring. Its flower heads are the largest--up to 1½ inches across--with white rays often tinged with lavender.

Following this at widely scattered locations is Common Fleabane (E. philadelphicus). This species is notable for having 100 or more exceedingly fine rays, usually a delicate pink, making up a head less than one inch in diameter. Its upper leaves clasp the stem.

Two others, with slightly smaller inflorescences, white or flushed with pink, bloom from late spring or early summer until fall. Daisy Fleabane (E. annuus) has sessile leaves with sharp teeth, and spreading hairs on the lower stem. In the similar Lesser Daisy Fleabane (E. strigosus) the leaves are mostly untoothed, and the hairs are appressed.



E. ANNUUS

E. STRIGOSUS

In contrast to these attractive wildflowers, Horseweed (E. canadensis) is a rank, diffuse weed. It has multitudes of tiny flower heads each of which has a few very short white rays.

Dick Smith

Vol. XII, No. 3

S H O R T I A

Autumn 1990

A quarterly publication of the Western Carolina Botanical Club

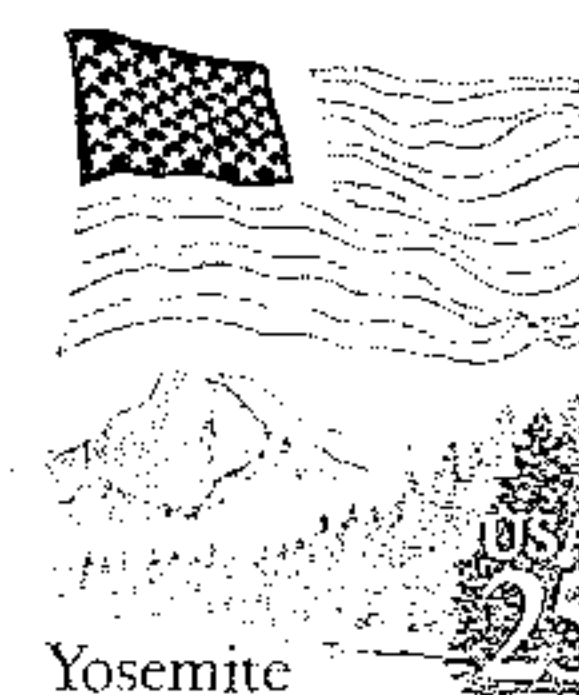
Editor: Dorothy Rathmann

Distribution: Frances Gadd

Please submit contributions for next issue by November 15, 1990 to:
Dorothy Rathmann, Editor
Carolina Village Box 23
Hendersonville, NC 28792

SHORTIA

c/o Frances Gadd
218 Pheasant Run
Hendersonville, NC 28739



FIRST CLASS

L. & H. Pearson
2514 Kanuga Road
Hendersonvil, NC 28739