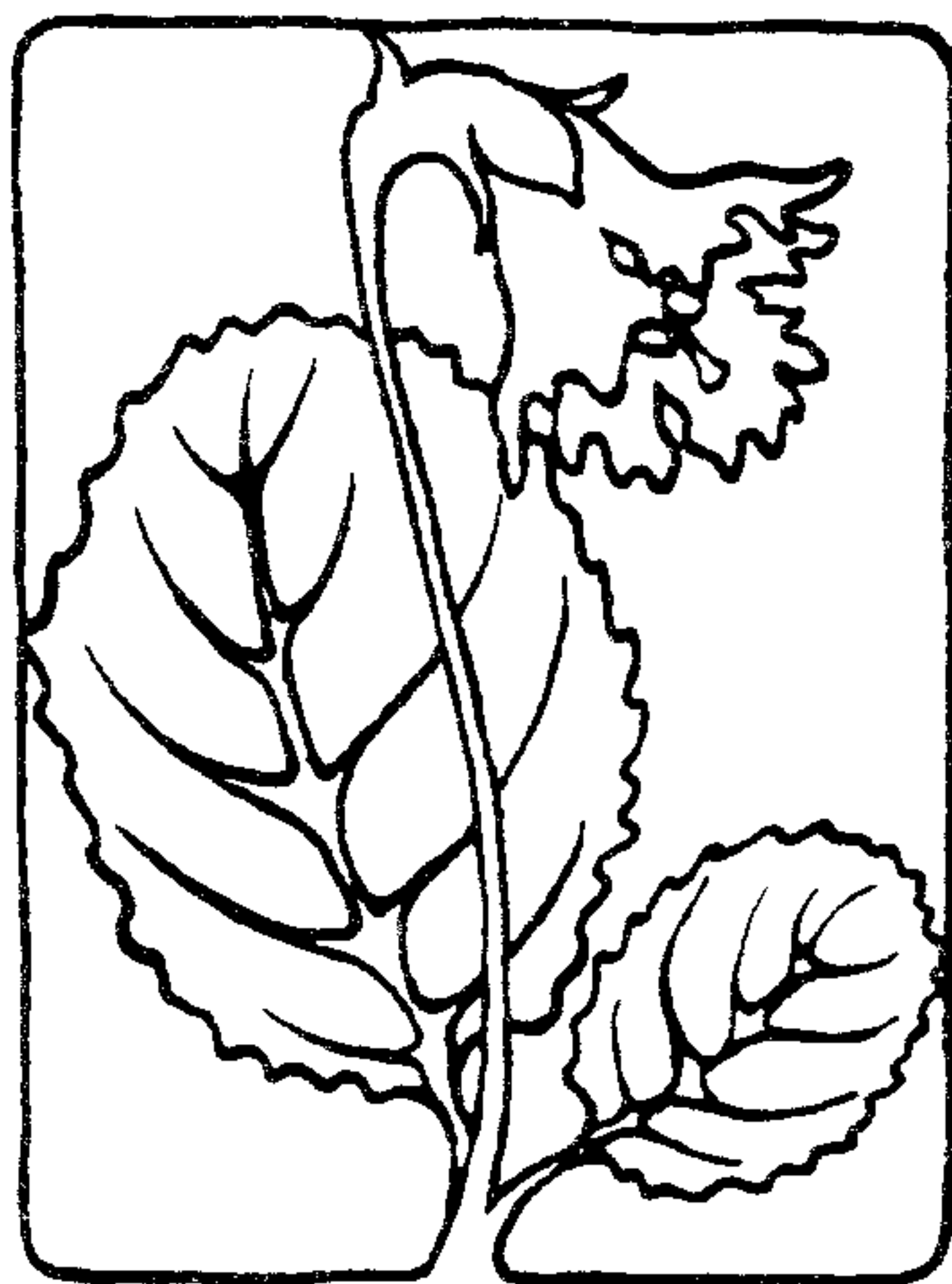


SHORTIA

NEWSLETTER OF THE
WESTERN CAROLINA BOTANICAL CLUB

WINTER 1989 - 90



DOROTHY RATHMANN, Editor

FROM THE PRESIDENT.....Bill Verduin

Remember the Buck Springs Nature Trail we have been hearing about for so long? Beginning to wonder if it would ever get off the ground -- no, I mean on the ground? Well, I'm happy to report a giant step toward completion.

Dick Smith and Elton Hansens had long ago picked 24 "stations" in which to put a numbered post which would relate to text in a guidebook. The Park Service had made the six-by-six posts and they were ready to go into the ground.

Then came the "week that was." On Monday I tagged along with Dick and Elton to a meeting with Park people to iron out last minute details. Tuesday we three plus Tom Hallowell, armed with a probe, searched each general location for a specific spot between the very generous supply of rocks where we could get the post two feet into the ground. Wednesday with the additional assistance of Rudy Henkel, Dean Crawford, Chuck Snow, and Alan Jackson we set the first six posts.

Saturday most all of the above, plus Lowell Orbison, reported for duty bright and early. We were joined by five eager young members of the Brevard College Environmental Awareness group who had volunteered their services. By noon -- would you believe it? -- we had all the posts firmly planted! Dick will now give the text one last once-over and then turn it over to the Park Service for printing.

As far as I know, this is one of the largest community service projects the Club has ever undertaken. And it's a good one. This is a heavily used trail and our contributions will greatly increase the pleasure of the hike for many people. From the minutes of the founding meeting in 1973, one of the purposes of WCBC is "For the education of interested persons in the enjoyment and appreciation of wildflowers and other plants." In this project we are certainly fulfilling one of our purposes.

On behalf of the Club, let me express our thanks to the Brevard young people who provided muscle -- which is in short supply among our membership. And hearty thanks to all the Club members who pitched in when willing hands were needed. But a special word of appreciation to Dick Smith and Elton Hansens who spent many, many more hours on this project than all of the rest of us combined -- and without whom this project would never have been undertaken. Thanks from all of us!

NEW MEMBERS -- ADDITIONS TO 1989 MEMBERSHIP LIST

Hendersonville, NC 28739 unless otherwise indicated

- Lewis, Barbara, 901B Rutledge Annex.....697-1454
- McCurdy, Dale, 129 Bel Mar Lane.....

NEW BOOK REVIEW.....Barbara Hallowell

WILD PLANTS OF AMERICA: A SELECT GUIDE FOR THE NATURALIST AND TRAVELER -- Richard M. Smith; John Wiley & Sons, NY, 1989 (Available from WCBC member Richard M. Smith, \$12.95 paperback, \$22.95 cloth, or at bookstores.)

If you've been hunting that one handy book which can lead to botanizing hot spots in this wonderful land, STOP! Dick Smith has created it for us with WILD PLANTS OF AMERICA. What good fortune!

Even before reading the book, one is struck by the stunning cactus blossom on its cover and the numerous illustrations scattered throughout its clear-printed pages. Dick, the artist, treats us with drawings not only simple and accurate but artistic. Some even include a little friend who shares habitat with the pictured plant, enriching the effect, even adding a touch of humor (e.g. pp. 43, 100, 128).

The Contents, with chapter subjects titled by geographic region, stirs an active traveler's yen to hop into the car and head for the nearest site. It boosts an armchair traveler's urge to flop into an easy chair with WILD PLANTS OF AMERICA in hand.

Most readers I talked with turned first to familiar places, Chapters 5-9 -- the Smokies, Pisgah National Forest, mountain balds, and trails familiar to WCBC members, then to other places they'd already been.

When you start reading, you find Dick the skilled writer, botanist, psychologist. With concise, beautifully chosen words, he sets you in place in each geological region and creates its mood. You find it irresistible. Then he guides you, giving specific directions, to locations of special botanic interest in that region, telling what to look for. As you journey from cover to cover, you experience a coast to coast botanical trip. You want to return to places you've been to see more. And happily, Dick understands his reader -- he gives enough to inform and entice but not enough to bore.

I asked several readers for comments and heard:

I like the format; a really workable reference book.

It's so readable! Carries you right along. You want more.

I like it as a diary of recollected pleasures.

The answer to people's questions on where to go and what to see.

The choice of words is polished, the phrasing beautifully balanced.

It has not only botany but bits of geology and history.

The drawings are as beautifully and economically executed as the prose.

Readers are sure to carry this indispensable guidebook on trips. Other pluses: Contents of Illustrations, complete index, and listing of Botanic Gardens and Arboretums. Missing: a bibliography.

Dick, congratulations on a beautiful, useful book -- but you've set a precedent! Now Jean and you must travel even more and come up with indispensable Guidebook Vol. II -- even more places for readers to go!

ROCK OUTCROP COMMUNITIES.....Elisabeth Feil

The very words bring back memories:

of the steep cliffs in southern Ontario with a few pines, deep crunchy cushions of reindeer lichen (Cladonia spp.), and beautiful pink lady's slippers (Cypripedium acaule), or the small island with wispy pink corydalis (Corydalis sempervirens) and low blueberry bushes (Vaccinium spp.) with more berries than leaves.

of Heller's blazing star (Liatris helleri), goldenrod (Solidago spithmanea), mountain bluets (Houstonia purpurea var. montana), and lyre-leaved rock cress (Arabis lyrata) on the "Profile" of Grandfather Mountain.

of the leaves of the silverling (Paronychia argyrocoma) on Big Yellow shimmering golden in the setting sun.

of Carey's saxifrage (Saxifrage careyana) on a big rock in the woods below the Chimney Rock cliffs, a thousand pearls glittering in the sun after a shower.

of lobed spleenwort (Asplenium pinnatifidum) in dry cracks on the cliffs across the valley from the "Chimney."

Not two of them are alike. How can I possibly come up with a concise, general essay about rock outcrop communities? So, I guess I just have to stop dreaming and start telling you something about the only cliffs I do know a little about -- Chimney Rock Park.

There is life on the seemingly bare vertical rocks. The black stripes are wet, slick layers of algae. On the light colored areas, many species of lichens exist in a very harsh environment that is dominated by alternating deluges and extreme dryness, great temperature extremes, and high winds. And yes, near the edge of a dry piney forest there is an area covered with reindeer lichen and pink lady's slippers. In another small spot pink corydalis may be found waving in the breeze.

On the more gently sloping, smooth rock faces, thick mats of twisted-hair spikemoss (Selaginella tortipila) are a common sight. The spikemoss got started in succession to mosses and lichens. It has no roots to anchor these mats, and many of them are washed down over the rocks by intense rainstorms. In years with favorable spring weather, some of the spikemoss mats host annuals, such as slender gerardia (Agalinis tenuifolia), ragweed (Ambrosia artemisiifolia), and orange grass or pineweed (Hypericum gentianoides). Others support grasses, ferns like rock cap fern (Polypodium virginianum) and marginal shield fern (Dryopteris marginalis), and more showy flowering plants, like goldenrod (Solidago sp.), beard tongue (Penstemon canescens) and Solomon seal (Polygonatum biflorum). Occasionally, even shrubs or a stunted tree will take hold in one of the mats. Their survival depends on the presence of cracks for anchorage and nutrient uptake.

Due to the geologic forces that put a folded mica schist on top of the massive gneiss cliffs, there is ample seepage on the rocks. This is the reason for the presence of some unusual plant species.

One of them is Biltmore sedge (Carex biltmoreana), a species that just a few years ago was thought to be possibly extirpated. On the steep east side of the mountain, it is an integral part of the herb cover in an area of about 1500 x 300 feet. It also grows on the cold north-facing cliffs in scattered locations. On some of the dripping ledges

and in wet vertical cracks it forms a separate community with ninebark (Physocarpus opulifolius).

Of special interest is deerhair bulrush (Scirpus cespitosus var. callosus), a plant that I have seen in Alaska on permafrost "meadows." In the Park it occupies the most inhospitable, exposed cracks on the vertical cliffs where no other species can compete. Wherever conditions are only marginally better, Biltmore sedge or sometimes mountain dandelion (Krigia montana) share a spot with the deerhair bulrush. The bulrush here is obviously dependent on the seepage on this cliff. Why, then, does it occur along the Parkway below Grandfather Mountain in the same clump with turkey-beard (Xerophyllum asphodeloides), a xeric species?

In another interesting spot on the steep cliffs a wet plant community has developed. Round-leaved sundew (Drosera rotundifolia) is common here at the edge of a mat of Sphagnum spp. and Michaux' saxifrage (Saxifraga michauxii). With increasing depth other typical wetland plants occur, such as sundrops (Oenothera tetragona), cowbane (Oxypolis rigidior), beak rush (Rhynchospora sp.), meadow spikemoss (Selaginella apoda), ladies' tresses (Spiranthes cernuum), lady rue (Thalictrum clavatum), tassel rue (Trautvetteria carolinensis), slender yellow-eyed grass (Xyris torta), green wood orchis (Habenaria clavellata), and others.

And then there are flourishing clumps of small-flowered alumroot (Heuchera parviflora) under an overhang without any apparent water supply.

The diversity even on this relatively small area is so great that I have come to believe that we will never be able to fathom all the intricacies of life -- no matter how smart we may become.

**CRAGGIES, THE ENDANGERED GARDEN.....Park Ranger Sue Jennings
Blue Ridge Parkway**

The great Craggy Mountains is home to a marvelously rich variety of plants and animals. Recognized for its unique plant communities, 16 of which are listed by the state as endangered plant species, Craggy Gardens scenic area has been designated by the State of North Carolina as a Natural Heritage Area. This area, locally known as the Craggies, includes dramatic rock outcrops, steep rugged mountain peaks rising to 6,000' in height, soft grassy balds with rhododendron thickets adorning the hillsides, valleys dominated by cove hardwoods and virgin hemlocks, and a wide assortment of wildflowers. Just as variable is the weather. Cold, damp, billowing fog can rapidly move in, enshrouding the peaks and domes in an eerie cloak of gray. Violent thunderstorms roll across the mountains, and the bitter winter winds can build a layer of ice more than 10" thick on trees and crowns.

The Craggies are indeed a special place. They are also of significant importance to Parkway Superintendent Gary Everhardt, as the exposed rock outcrops of Craggy pinnacle provide the necessary habitat for a number of rare and endangered plants. Nestled in the crevices and ledges of the rocks, these plants, which may be relics from the last glacial period, struggle to survive. While they are adapted to the extremes of wet and dry, hot and cold, they have no defense against the trampling footsteps of visitors. Like fibers in a worn carpet, the integrity and survival of the rare plant community is being threatened by visitors walking across the rocks and ledges of Craggy pinnacle. Already, a dramatic decline has occurred in the plant populations from trampling.

Part of the problem is that the rare plants do not call attention to themselves. They do not have colorful flowers; they are small in size; and several are mistaken for common grasses. Thus, visitors are not cognizant of the damage they are causing as they leap from one rocky ledge to another. The primary difficulty is associated with a number of unofficial trails that traverse the pinnacle on the south facing slope (just beyond the visitor center). Through the years, a network of these routes has been created by visitors, unaware of the official trail location. Many of the bushwacked trails pass through the rare plant communities. During peak season, 518 people per weekend day were observed using the rock outcrops for climbing, viewing, and seating. The most tempting places to put one's foot happen to be the last refuge for these plants, whose ancestors were present in the days of the mountains' infancy.

Clearly, a new management concern presents itself at Craggy pinnacle. The National Park Service has a dual mandate to provide access for public use and enjoyment, while preserving the natural environment. It is in the spirit of this charge that Superintendent Everhardt has authorized funds for a stone-walled overlook for the pinnacle based on quantitative and qualitative research of visitor use at Craggy pinnacle. The overlook will feature a central area with four alcoves leading out from the center. Visitors will subtly be led into the alcoves by the views and privacy, while being prevented from accessing the fragile rock outcrops. To further attract visitors, a display identifying the mountain peaks will be set in each alcove. The rock wall is designed to blend in with the natural environment. Utilizing native stone, each alcove mimics the dominant lines of the nearby outcrops, following the natural contours of the site. This will provide a natural harmonious feeling in the overlook, while physically discouraging access to the rock.

On site interpretation will also serve as an effective tool for protecting the rare plant habitat. A park ranger will be roving the area to alert visitors to the fragile habitat, interpret the site, and insure that the visitors remain on the official trails. The ranger will also be available to field questions regarding the Parkway in general. Trail signs directing visitors to the official trails and informing them of the fragility of the area will be installed at various points to promote visitor understanding and compliance. The bushwacked trails will be closed off to discourage their use and the attendant problems of soil erosion on the southern slope of the pinnacle. The trail signs and additional staff should reduce confusion as to where the pinnacle trail begins, as well as enhance the visitor's experience by providing direct contact with a park naturalist.

The National Park Service is dedicated to visitor enjoyment through education, conservation, and preservation. We are proud to offer the unique features of Craggy Gardens natural area to the public. The conflict of intensive use in a fragile environment is a challenging management problem. This integrated strategy of research, design, and interpretation provides for continued public use without sacrificing habitat and its rare tenants. The ultimate responsibility, however, lies with individual compliance.

TRAIL CHANGES: In order to protect the rare plants, access to the pinnacle from the south side (visitor center side) will be prohibited and all unofficial trails to the peak will be closed off. The official trail head to the peak begins at the Dome View parking area 1/8 mile north of the visitor center. From the picnic grounds, the Carter Creek Trail will join the Mountains-to-the-Sea Trail heading north to reconnect with the existing Carter Falls Trail at a location well beyond the pinnacle and endangered plant habitat.

LOOK AGAIN !

There are a lot fewer trees with leaves that grow opposite each other rather than alternately. In fact, there is a little mnemonic to help us keep track of the four major ones: MAD BUCK, which is an acronym of Maple, Ash and Dogwood plus an abbreviation of Buckeye. (In regions where Horse Chestnuts outnumber Buckeyes, MAD HORSE serves just as well.)

There would seem to be no chance of confusing these four genera. Dogwoods and Maples both have simple leaves, but in one they are ovate and in the other they are conspicuously lobed. The rest are compound, those of Ash being pinnate in the arrangement of their leaflets, while Buckeye and Horse Chestnut leaves are palmate.



ACER NEGUNDO

This would work if it were not for the non-conformist Acer negundo, a tree that bears the appropriate though unimaginative common name of Ash-leaved Maple as well as one which could hardly be more incongruous, Box Elder. Here we have a Maple with opposite, pinnately-compound leaves that suggest White Ash (Fraxinus americana), which is the principal representative of its genus in our area--except for some convenient differences. White Ash leaves usually have seven leaflets instead of only three or five, and they are entire or nearly so, whereas those of Acer negundo have coarse, irregular teeth and sometimes even shallow lobes. In addition, mature specimens can attain twice the height of Ash-leaved Maples.



FRAXINUS AMERICANA

Maples and Ashes are easy to distinguish when in blossom, but the flowering season is very brief, while the seed vessels, or samaras, can be observed over a much longer period. Those of Acer negundo are typical of the Maples, and consist of twin divergent "wings" each containing a large seed. In the case of Fraxinus americana, they are single and much narrower, shaped somewhat like canoe paddles.

Dick Smith

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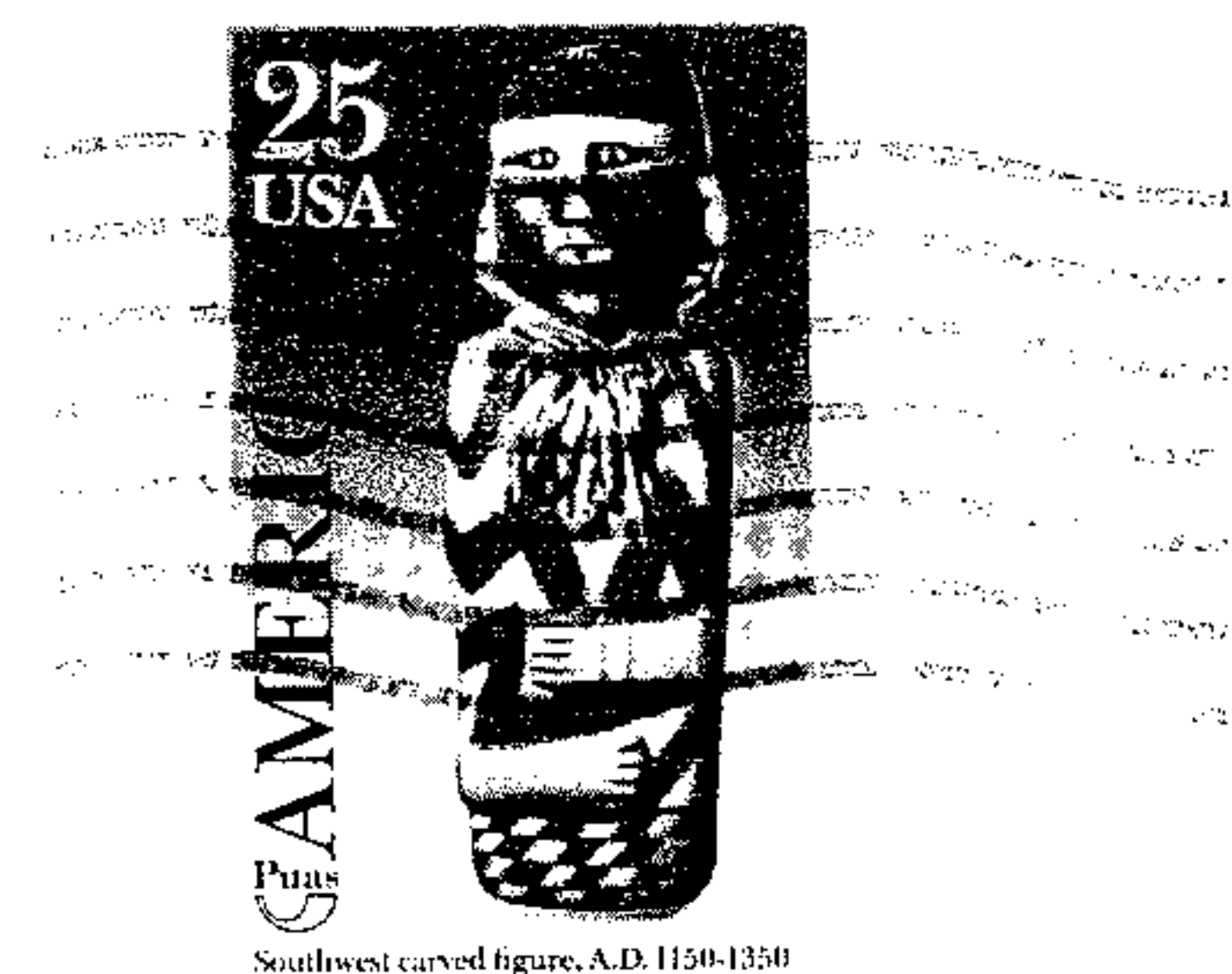
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