

Nature Study



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NATURE STUDY

AND THE

HANDICAPPED

— The American Nature Study Society —

Dear ANSS Members:

This special issue is to focus some attention on opportunities we can provide for handicapped people.

There has been a trend away from the standard braille sign and separate nature trail.

This letter sent to me by Walter A. Jones, chief naturalist with the Environmental Education Center, Lord Stirling Park in New Jersey, is an excellent summary of many new attitudes and developments involving handicapped people and environmental facilities.

*Marshal T. Case
Associate Editor*

Dear Mr. Case:

We are developing numerous facilities and opportunities for handicapped individuals, including wheelchair confined, blind, deaf, and elderly. For example, our building is designed to accommodate handicapped through almost the whole facility, especially the public use areas.

We are working on a trail specifically suited for the handicapped (wheelchair and blind), and our exhibits will incorporate features for both blind and deaf. What we are not doing is developing a braille trail or designating any specific area, facility, or program for the handicapped. This is based on recommendations of the American Association for the Blind, other organizations for the handicapped, and two studies done on our behalf by graduate students regarding the needs of handicapped.

Braille trails are not to be encouraged nor are rope guides. The handicapped groups themselves ask we do not call special attention to the handicap, but rather simply remove barriers which prevent them from using and enjoying the same facilities non-handicapped do. This is called "main streaming" to use their parlance.

Our "special use trail," now in development, will have audio interpretive units for the blind and sighted, will be landscaped with plants (in raised beds) which have interesting textures, odors, or which make sounds. There will be no ropes, rails, or braille signs which are more interesting to the sighted than they are useful to the handicapped. Enclosed is some information about our Center and our programs. Thank you for your interest.

Sincerely,

WALTER A. JONES, Chief Naturalist
Environmental Education Center, Lord Stirling Park
190 Lord Stirling Road, Basking Ridge, New Jersey

Nature Study and The Handicapped

One need only watch youngsters who cannot read, young persons who cannot speak a word of English in an English-speaking classroom, children who cannot hear or have limited vision blossom and glow with pleasure as they explore the bark of trees, the feel of grass and earth and rocks, of hot and cold sidewalks with the wonderful array of tactile senses at their finger tips—and all over their bodies—or watch any group of youngsters of varying skills respond to a growing plant, a living animal or develop the concepts of simple machines with a board and an improvised fulcrum to realize that learning first hand can be a joyous occasion and a great way to tear down the barriers that tend to isolate persons who are limited in one or more ways by virtue of language, birth or accident.

With mainlining the order of the day more and more teachers will find handicapped children in their classrooms. Often experiments to find "what will happen if . . .", along with experiences with plants and animals indoors and outdoors can help these children learn a great deal while it helps them become a part of the group. In addition there may be special benefits that are important to all people but that may have special significance to those with handicaps.

For instance, when we think of nature activities for teaching the blind we tend to think of all the activities that can be carried out utilizing other senses than sight and of the satisfactions that children and adults can have from this enrichment but Anna Ascarelli points out other benefits as well. Anna Ascarelli has invested her life in teaching the blind, first at Perkins School for the Blind in Boston and now at Jersey City at St. Joseph's School for the Blind. St. Joseph's is a school for the multi-handicapped and every child has at least one other limitation (none are deaf).

In Martha Ross Swope's junior high age special education class in Lebanon, Pennsylvania, we see young people taking pride in what they can accomplish as citizens which carries over to an acceptance of themselves, their limitations and their gifts and is expressed finally in concern for others.

USING NATURAL SCIENCE TO HELP BLIND CHILDREN TUNE IN TO THE WORLD AND EXPAND THEIR HORIZONS

Anna Ascarelli

Perkins School for the Blind is located in an area of lawns, trees and flowers where children can have many contacts with nature. Some of the experiences which our young people enjoyed were the same experiences as those enjoyed by sighted individuals: climbing trees, using the tactile senses to appreciate the texture of tree bark, the varying temperatures of different materials exposed to the sun or of the same material in sun and shade, the feel of grass and earth on bare feet, of wet earth and dry earth underfoot, the sounds of the river, of birds, of the wind blowing leaves.

There were other aspects, however, that were peculiarly their own. There are different sounds for different seasons. Rain, sleet, hail, snow all sound different. Temperature differences help us mark the flow of seasons.

Some blind children, and particularly the multiple-handicapped ones, lack a sense of time which is an essential dimension of life. Helping them sense time spans—seasons as well as day and night—gives them a measure of security. Our own rhythm needs to be a part of nature but if one cannot feel nature's rhythms then the world can be a terrifying place.

There are other reasons for learning to tune in to outdoor sounds. Sounds and the tactile senses can tell us much about weather. Weather is important to blind people. The sound of things moving in a strong wind may disguise other sounds. It may also change odors, bringing in unfamiliar ones or dispelling familiar ones. Any of these can result in a loss of landmarks, of disorientation, for someone traveling alone.

At Perkins the children had a garden. They planted and cared for vegetable crops. Some were quick-harvest spring crops, others, like corn, were something to look forward to when they returned from summer vacation. Again, in addition to learning about plants, soil and growth, there was the

aspect of time and seasonal change.

Pets that are small and gentle can bring real pleasure to blind children. At the same time the children are learning about taking care of another living thing, about having something dependent on them, as well as learning nutrition, cleanliness, and sometimes—multiplication! Invertebrate animals and the cold-blooded vertebrates are generally unsatisfactory, however.

While many of the concepts that are important to learn are biological and environmental, physical science can greatly enrich the curriculum. Things that children can experience, can manipulate, and can learn from by doing, can add pleasure and satisfaction as well as develop an understanding of the natural world. These include experiments with balance, gravity, simple machines, air pressure and home-made musical instruments.

Science teaching is much less effective with the prepared materials that are on the market today which are used with a specific result in mind, then packaged and put away. Simple materials and outdoor experiences help the children grow in understanding of their world. Anything that broadens the horizons of these young people at the same time that it helps them relate to their environment is tremendously important and learning about the natural world by observation and experimentation is an essential technique for accomplishing this.

CONSERVATION EXPERIENCES WITH THE MENTALLY HANDICAPPED: RECYCLING PAPER—SAVE THOSE TREES!

Martha Ross Swope

Ask not — what is America doing for us but what can we do for America.

America is made of people—all kinds of people: the brilliant, the average, and the not-so-brilliant or mentally handicapped. But even the mentally handicapped can make major contributions to conservation. To cultivate a community awareness for our future citizens the natural place to begin is in the public schools.

It is important that in our teaching

we point out that we must not be passive spectators but active participants. I teach a class of junior high special education students with I.Q.'s of 53 to 80 who will ultimately receive a high school diploma and take their places as future citizens contributing to our community. (With an occupational program in our senior high level many of our students are employed before graduation.)

If the class is going to be "active participants" some planning must be done.

In a new adventure of recycling paper a coordinated program was developed with the school and the recycling company. Fliers were sent out to each homeroom explaining our intentions and the need for their cooperation and participation.

PREPARATION OF BOXES: We collected empty cartons from stores—one for each homeroom. The class decided on the information that should be placed on the side panel. Eventually we agreed on this list:

RECYCLING BOX NUMBER
ROOM NUMBER
TEACHER'S NAME

**Please do not wrinkle the paper.
Place only newspaper, notepaper
and tablet paper in the box.
Continue to use waste can for
gum, tissues, etc.**

They discovered that putting this information on large white sheets of paper and pasting them onto the carton was the best way to present the material.

Many boxes were needed for the more than thirty homerooms in the building. Everyone of my students had to prepare the label for at least one. Boxes were everywhere, for we kept them, admiring our writing from day to day, until all were ready to be delivered.

COMMITTEES WERE FORMED: Boxes had to be collected, emptied and returned quickly and quietly. The work schedule was limited to 45 minutes each Friday at the end of the day. The work area was left clean and tidy.

The paper had to be tied up. If students were finished with their work assignments during the week they could be chosen to tie up paper with a "foreman" from the class to keep things running smoothly and to inform me of any problems.

The school provided a truck at least once a month to take the paper to the recycling plant. Students loaded the paper and we received a report immediately upon the truck's return on the number of pounds of paper and the amount of money earned.

NEXT PROBLEM — USE OF MONEY: Without any discussion paper was handed out and each student was told to write down suggestions. It was amazing how many of these students thought of other people. Suggestions included, "give it to CARE," "Cancer," "take a field trip," "give it to the physically handicapped," "buy something for the school." "Buy something for the school" was the final vote after much discussion.

A HAPPY IDEA: What could we buy that everyone could enjoy? We did the work but everyone contributed the paper. After looking around the school, inside and outside, and looking through catalogs for ideas and prices someone came up with the idea of a tree. It was one of many thoughtful ideas, e.g. a state flag (the school had one), a microscope (not everyone could use it), something beautiful for the library where everyone could see it. Still without suggestions from the teacher—this was their project—they selected the tree. The principal was invited to the class to hear the ideas, pro and con, and their final decision and agreed that a tree would be just great.

LEARNING ABOUT TREES: From there we zoomed in on trees and our knowledge concerning ecology grew, too. For we learned that trees make a difference. They:

Make it cooler in the summer by providing shade.

Make it warmer in the winter by providing shelter and serving as a wind break.

Provide homes and shelter for birds, who in turn help reduce insect pests.

Make an area more attractive, so increase property values.

Screen impurities and dust from the air.

Provide a barrier that helps screen out noise.

Put oxygen into the air.

We put the above information on each invitation, written in their best handwriting. We invited two representatives from each home room to the tree planting ceremony along with the superintendent, the principal, one science teacher and a newspaper reporter.

After doing research on kinds of trees and preparing reports we selected a sugar maple for its beauty and because future classes would be able to tap it and learn about making maple syrup.

OTHER SUBJECTS: We read tree poems. Ideas grew and grew. We decided that we should have programs to distribute at the ceremony. The art

teacher was asked to help with this, and was delighted to have the opportunity to do something that had special meaning for the group,

FINALLY, the hole was dug by class members. The nursery man came and actually planted the tree, giving important tips on planting and care.

The program response from administration and teachers was enthusiastic and recycling became more than just a conservation project — it helped bridge a gap between the special education class and the rest of the school system. Because we became **involved** we needed the help of others and proved that we, too, can contribute to environmental improvement.

SOUTH JERSEY WOODCOCK

Ruth Yarrow

Above, luminous blue darkens.

Pines bristles against it,

Stars prick through.

Suddenly, a sharp whistle of wings

Cuts a spiral

Up into the infinite blue.

A pause, then curved notes,

Like liquid leaves,

Dance downward.

Silence

Is measured in the dusk

With a bawdy, buzzing beep.

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Gardens, Crafts and Special Children

by MARSHAL T. CASE

Mentally retarded youngsters have much to offer other people in any community. And, as a new trend spreads all over the United States, many of us find ourselves fortunate to become involved with these special young men and women.

A group of us at the State Audubon Society in Connecticut had an opportunity to develop a program for children referred to as "educables," youngsters with a very low I.Q. range. We established our **Nature Workshop for Retarded Teenagers** for those young people in the 30 to 70 I.Q. range (age range of 14 to 19). Most of the participants had never had the opportunity to explore outside at all, especially in a wildlife sanctuary situation.

A special foundation grant was received to establish a summer workshop program. The mechanics of setting up the program included consultation with several town and city school department heads for special education, organizing a small volunteer steering committee including one parent of a mentally retarded youngster, and hiring a special education teacher to work with staff naturalists and volunteers at the Audubon Center throughout the summer months.

Once the director for the program was hired, it was his job to coordinate the volunteers in establishing the summer schedule and to work with the special education school department heads to identify those youngsters, in designated school systems, in need of such a program. And, hopefully, to gather a compatible group.

A weekday schedule was established for the summer months of July and August and an Orientation Saturday was held for workshop participants and their families. This served the dual purpose of giving a preview of the facility and staff to the youngsters and assuring the parents of a potentially productive summer for their children.

The workshop consisted of five day weeks with an 8 a.m. to 3 p.m. work day. The participants came to work prepared to do trail work as the outdoor activities were an important part of the learning experience. None of the students had worked with garden

tools, shovels and other pieces of hand equipment.

It was very important to frequently change the activity, as the attention span of the youngsters was very short. Everything from games and crafts to bird walks and seining for fish kept everybody busy.

The most significant project was the creation of a hummingbird garden with a wheelchair trail for physically handicapped people. The youngsters knew they were helping a special project and worked all summer to complete a wood chip trail and establish a variety of plantings including some two dozen special plants for hummingbirds. Mentally handicapped youngsters creating a facility for physically handicapped people!

During succeeding years these teenagers enjoyed a garden that was established with additional Saturday spring workshops. Seeds were planted indoors and by early summer when the regular sessions began, small plants were ready to be transferred to a "truck garden" area on the corner of an old field in the sanctuary. Daily routine of watering and weeding brought the plants (beans, pumpkins, tomatoes, corn, squash) along beautifully and by mid-summer a small harvest would begin. A vegetable stand was established in the front lobby of the nature center and proceeds from sales were donated to the Audubon Society in thanks for providing the facility and staff help to make the program possible. And, at pumpkin harvest time, each teenager took one home to his or her family.

Additional help for the program was provided by "junior staff" volunteers who worked daily with the students and who maintained the garden on weekends during harvest time. Of course there was great benefit to the volunteers as they learned more about the mentally retarded youngsters who lived in the same community and developed an awareness for a project that benefited everyone.

Fall workshops were initiated during the fourth year of the program and crafts became a focal point of activity. Wreaths were made from dried plant materials, leaf print stationery was created, and a wide variety of natural

history information was taught during these sessions.

Most rewarding for the Audubon staff, adult volunteers, junior staffers and program director, was the new outlook on special needs within a community and the acceptance of an important leadership role that provided a unique learning experience with unquestionable fringe benefits.

Scented Geraniums for the Blind

by ROBERT S. RUSSELL

Various South African Geraniums of the genus **Pelargonium** lend themselves to easy identification by blind people by touch and smell. They may be grown indoors all year and outdoors in the summer garden. The flowers are not as spectacular as the common garden geranium, **P. hortorum**, but plant hybridizers are working to improve the flower size and color.

These scented-leaved geraniums have handsome cutleaf foliage easy to identify by touch and are fragrant of lemon, apple, mint and spice when crushed between one's fingers. I remember the lemon-scented geranium of my grandmother's windowsill and how she used a leaf on the top of her apple jelly for flavor. Many of the scented soaps use the oil obtained from the leaves of this geranium. They are grown commercially in North Africa for this purpose.

Geraniums are ideal for pot culture, in fact they seem to bloom better for me if they are pot bound. I recently talked with a blind colleague that has an extensive collection of these scented geraniums. He identifies these plant friends by names related to the leaf shape—oak-leaf, fern-leaf, heart-leaf—as well as by the scent.

SKUNK CABBAGE

Ruth Yarrow

*In soft dark muck
Some red-streaked hoods
Swell as they suck
The leaking woods.*

*I pinch off a piece
With my unmittened thumb
For the stink I savor —
But smell is numb.*

*Numb like my toes
Curled up inside boots
Beneath ragged ice
With skunk cabbage roots.*

Nature Trail Gives Jobs to Unemployed

by PHILIP K. CORNELISON

What was the motivating force behind the development of a nature trail? A natural setting, a fellow worker who is a nature lover, a biologist, and the help of the Title X Program motivated the development of one in Clay County, Alabama. Clay County is almost in the shadow of Cheaha Mountain, highest point in the state. The county's highlands support a wide variety of native plants, many of which are found in only the vicinity of Cheaha Mountain. The county also contains many clear, sparkling streams and narrow but fertile floodplains. These low lands support still more native plants. So, plant life in the county is varied and abundant.

The Emergency Jobs and Unemployment Assistance Act of 1974 resulted in the Title X Job Opportunities Program which has had a distinct impact in Clay County. Supervisors of the local Soil and Water Conservation District applied for assistance under the Title X Program. The U.S. Department of Commerce allocated, through the USDA Soil Conservation Service, \$200,000 to the district for hiring some of the county's unemployed residents.

In developing the plan for the trail, the district supervisors decided to display in one place specimens of as many of the county's native plants as possible. The project which resulted is known as the Crooked Creek Nature Trail. The author and Dave Kelly, an SCS Biologist, were requested by the district to help select a suitable site for the trail and to make plans for its development. The site selected is a multipurpose floodwater retarding reservoir in the Crooked Creek Watershed. The reservoir was built with PL-566 small watershed project funds. In addition to providing protection from floods, the structure also provides water for the cities of Ashland and Lineville. Since the lake is owned by these two cities, they were asked to become co-sponsors of the nature trail. Additional assistance was rendered by the Clay County Commissioners, the Soil Conservation Service and the Crooked Creek Watershed Conservancy District.

PHILIP K. CORNELISON is District Conservationist, U.S. Dept. of Agriculture, Soil Conservation Service, Ashland, AL.

In selecting the route of the trail, topography, plant species, and general scenic values were considered.

Placing the trail on the contour minimized soil erosion. The trail was cleared and leveled by hand; it was covered with crushed limestone to maintain stability.

Location and construction of the trail was important but collection and display of the desired plants were essential to meet the objectives of the plan. Routing the trail by existing plants partially fulfilled the requirements of the planners. But it was obvious that many plants would have to be transplanted from other areas within the county. Under the leadership of Title X Coordinator, Hoyt Mattox, and with the enthusiasm and dedication of all who worked under his supervision, the number of plants assembled has far exceeded expectations of the planners. Marvin Forbus, foreman in charge of locating, collecting, and transplanting the plants, asked the author to seek assistance from several sources in identifying plants brought to the trail.

Sixty-five species of trees and shrubs have been identified and labeled with both common and scientific names. Forty-two species of herbs bearing showy flowers also have been labeled. Many specimens of trees, shrubs and herbs throughout the county are marked and they will be moved to the nature trail. When this is done, the number of identified species will exceed 500.

To further enhance the natural setting, bridges were built of logs from trees which were cut when clearing the trail. They cross small streams and old gullies which result from many, many years of cultivation, without adequate conservation practices, by earlier generations. Bird houses made of hollow limbs and small logs are hung along the trail. Rustic wood duck nesting boxes are placed at various locations in the edge of the lake. The signs used to identify trees and shrubs are made of redwood. Plant names are routed into the signs and they are filled with black paint. The signs are treated with linseed oil to prevent deterioration.

For visitors' further enjoyment, picnic tables, barbecue pits, and benches

are located along the trail at points affording excellent views of the lake and surroundings. The picnic tables are sitting on patios of native stone.

Plants which bear food for wildlife are favored. The song bird population is excellent. Piles of brush have been randomly placed to provide cover for wildlife.

The nature trail is 11,200 feet long. Distance signs, at intervals along the trail, inform the walkers of how far they have gone.

Local interest in the trail is excellent. Plans are not only to encourage its use by the public but also to emphasize its value for use by student groups, Boy Scouts, Girl Scouts, and similar groups having particular interest in natural sciences.

What do the local people think of the project? J. B. Toland, Probate Judge, says, "I believe it is one of the greatest assets that has come to our county in some time. It's a tremendous educational opportunity." Lewell Sellers, Chairman, Clay County Soil and Water Conservation District, is enthusiastic about the trail's impact. "It's one of the best things to help the economy that could have been done — it helps keep people off welfare," he says. "I've never had a job before," says Anna Pearl Houston. "I hauled rock, built nature trails, and watered flowers. I love the job, and just wish it would last forever."

J. S. Parker, Assistant State Conservationist, Soil Conservation Service, says, "The program was extremely timely. While providing jobs for many unemployed people, one of the finest nature trails in the area has been built." The Title X Project is somewhat reminiscent of the old Civilian Conservation Corps projects and is expected to have long-reaching effects on natural resources.

The local sponsors are developing an attractive brochure about the trail. You are invited to visit this nature trail.



Local unemployed people were hired to build the Crooked Creek Nature Trail. They did much of the work by hand.

Touch, Listen, and Smell

by ELIZABETH B. GOODMAN

JACK CURTIS and Jason, his Seeing-Eye dog, climbed out of the car in Muir Woods National Monument parking lot. Jack's father let the boy and the dog take the lead up the gently sloping path winding past the visitors center. This was Jack's first trip to the monument seventeen miles north of San Francisco, and he had eagerly counted off the days to this warm, sunny Saturday in May. Jason was on old territory. Part of his training with Dogs for the Blind had taken place in Muir Woods. He knew exactly where he was going; and as he padded along, he happily sniffed the familiar, exciting odors.

Not far from the visitors center, the Miwok Braille Trail is a small, quiet pocket apart from the often crowded park pathways and far enough from the park entrance that the noise of traffic is muted. Benches along one side of the path provide a comfortable resting place to sniff and listen.

"I'll wait here on a bench for you, Jack," his father said. "Take as long as you want, Jason can stay here with me. You follow along the rope."

Jason left Jack at the first post where the boy picked up the nylon cord that led from one post to the next. He carefully fingered the Braille legend attached to the post, describing the surrounding plants and other items of interest. Often a string ran from one of the posts back into the foliage. Following several strings with his fingers, Jack explored the serrated edge of a sword fern and felt the fragile, clover-shaped oxalis petals, the slender, thickish leaf of the California laurel, and the rough spongy bark of a redwood trunk.

A warm breeze stirred Jack's hair. Ecstatically, he sniffed the spicy scent of redwood needles, intensified by the heat of the sun beating down on the trees' branches. Nearby he could hear the gurgle of water where Redwood Creek runs close to the trail. A myriad of insects rustled and buzzed and hummed around him. His quick ears caught the chirpings and twitterings of half a dozen birds. He lifted his face to the sun and murmured, "Gosh, what a wonderful place!"

For Jack this visit was only an intro-

Free-lance writer Elizabeth B. Goodman has had her material published in a number of national magazines.

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duction to the Miwok Trail, a tantalizing taste of nature's offerings. He returned to Muir Woods many times with Jason and his father at different times of the day and different seasons of the year. He came to know the park in winter, when a damp chill rises from the ground; in summer, when the cool fog drifts in from the nearby Pacific Ocean; and in autumn when he and Jason can scuff through crisp, dry leaves lying in drifts along the path. Each visit provides new experiences. With his father's help and the keenness of his own senses he has begun to understand the park's ecosystem, each plant depending on others in its community. Jack has learned to follow the life cycle of plants, insects, and birds along the Miwok Trail. He can tell by the sound of the water when Redwood Creek is in spate or at its lowest ebb. When he hears a great horned owl hoot, he knows dusk is falling and it is time to leave.

NAMED for the Indians who inhabited this area in earlier times, the Miwok Braille Trail was established in Muir Woods National Monument in 1974. Although designed specifically for use by the blind and visually handicapped, it is also used by elderly people, by visitors with handicaps other than lack of sight, and by many hikers with no physical handicaps at all. (At the start of the Three Senses Nature Trail, a similar trail in Yellowstone National Park, a sign suggests that "visitors close their eyes if they are not blind . . . in order to experience the natural setting through their own senses." The day this trail opened sighted walkers were furnished with masks so they could explore on an equal footing with the blind.)

The Miwok Trail has twenty-five-foot-high posts, twenty feet apart, joined by a thin nylon rope. Round wooden markers are placed on the rope one foot before a post is reached to alert the walker that a new area is coming up. Each post has two labels, a four-inch by six-inch zinc braille plate and an aluminum alloy plate about three-thousandths of an inch thick containing large print. Both plates bear the same description of the adjoining area. They are mounted on a piece of redwood attached at a slight angle at the top of the post. The slab must be fairly flat, inasmuch as braille is read with the fingertips, but it must

be sloped enough for rainwater runoff.

The asphalt-paved, eight-foot-wide trail covers a hundred yards. Though short, it travels through an area of highly diversified foliage. Open to the sun at its beginning, the trail becomes increasingly shady as it works its way to a cul-de-sac formed by one of the many stands of redwood trees (*Sequoia sempervirens*) in the park. Blind visitors can familiarize themselves with a variety of plants and trees as they follow the cord from post to post.

The cost of establishing and maintaining these trails is relatively so inexpensive that it is hoped that more such trails for the visually handicapped will soon be available. The Miwok Trail cost about \$400, or \$20 per post—a small amount for the amount of pleasure derived by its visitors.

AT PRESENT seven braille trails similar to the Miwok Trail exist on federal and state lands in the United States. The Roaring Fork Braille Trail in White River National Forest, Aspen, Colorado, was the first to be developed. The Touch and See Nature Trail in the National Arboretum, Washington, D.C., and the Three Senses Nature Trail in Yellowstone were dedicated in 1969. Massachusetts' popular Buttonbush Trail lies in the Cape Cod National Seashore at Eastham. Virginia has two such trails—the Meade Station Trail at Petersburg National Battlefield and the Lion's Tail Braille Trail in George Washington National Forest. This trail has the unique feature of pools where blind visitors, with a rope for a guide, can dip their feet in the water. Finally, the state of California has established the Revelation Trail for the Blind in Prairie Creek Redwoods State Park in Humboldt County fifty-three miles north of Eureka. This level trail, a quarter of a mile long, is partially funded by the Save-the-Redwoods League. A leaflet in braille, describing the walk, is available at Prairie Creek park headquarters.

Today more than one million visually handicapped persons live in the United States, but unfortunately relatively few of these people have access to these outdoor trails. Young Jack Curtis is one of the lucky ones who lives close to this outdoor adventure. Young and old who explore and enjoy Muir Woods Miwok Braille Trail echo Jack's words: "What a wonderful place!"

The American Nature Study Society Features Lectures and Workshops

Given by Ruth W. Melvin at a symposium on Nature and Government, the AAAS meetings in Denver, on Wednesday, February 23, 1977.

In July, 1975 the American Nature Study Society launched its first sponsored workshop for teachers at Bridgeport, Connecticut. This pilot project, arranged by Marshal Case, Director of the Connecticut Audubon Society along with representatives of Bridgeport University, and taught by Dr. Helen Ross Russell, was tremendously successful and seemed to indicate that where need is expressed and leadership available this type of activity might be duplicated many times.

A Workshop Committee was appointed by the President of the American Nature Study Society, and a meeting arranged following the Annual Meeting Luncheon at Boston, February, 1976. At this time Dr. Russell reported that she had a request to conduct a workshop in Washington, D.C. during the summer of 1976, and a possibility of another one in Harrisburg, Pennsylvania in 1977. She reported also that plans were under way to hold an Edible Plants workshop at the Greenwich Audubon Center in cooperation with Martha Sykes, the director. Ruth Melvin indicated that arrangements had been made with the School of Natural Resources, The Ohio State University, to hold an urban environmental education workshop in Columbus, Ohio in August of 1976. Other Society members sitting in the meeting expressed an interest in exploring possibilities for additional programs in other parts of the country.

On October 25, 1975 Professor Esther Railton of California State University, Hayward, a board member of ANSS, and the Western Representative, Christian Nelson, Director of East Bay Regional Parks, Oakland, California, led a field trip to the proposed South San Francisco Bay Wildlife Refuge for the fall conference of the Elementary School Science Association, Northern California, as representatives of the American Nature Study Society. The event received enthusiastic reports from the sixty participants, and the Society gained recognition and possibly new members.

These varied activities together with requests for speakers indicated that the workshop committee might enlarge the scope of the project to include lectures and field trips. In April

the chairman sent a letter to a representative number of outstanding members throughout the country to gather opinions and to recruit participants for the program.

The project would be advertised as an expanded service program by members of the Society to conservation and environmental education groups, schools, service clubs and other interested organizations. The letter requested the members who were willing to participate to prepare a statement of their background and experience and the kinds of lectures, workshops or field trips he or she would be willing to conduct.

The replies were enthusiastic. All who answered consented except one whose time constraints at that time did not permit him to assume any additional responsibilities. Comments and suggestions led to further development of the project. In October, 1976, letters and a description of the project were sent to approximately fifty editors of national organization magazines or newsletters where emphasis was placed on conservation and/or environmental education. Names were obtained from the **Conservation Directory**, published by the National Wildlife Federation, and periodicals listed in the **Environmental Press**, published by the **Journal of Environmental Education**, spring 1976. The descriptive material told briefly about the successful programs already executed, and mentioned the names of some of the persons on the roster. It was agreed by the committee and those willing to help in the project that a nominal or no fee will be charged for the service, but expenses which are restricted to travel, accommodation, meals and supplies are to be paid by the agency or group requesting the service. The American Nature Study Book Exhibit, now containing approximately one hundred books by Society authors, was described as another feature which might be requested for use at conferences or institutes unrelated to the project as well as in combination with workshops or lectures. The Book Exhibit is sent free of charge on one month's notice when available, the exhibitor paying the return charge. Three contact persons with addresses were named in the article.

The action began immediately. The Center for Environmental Education, Washington, D.C. published the release in its November (1976) issue of **E E Report**. The Head of the Office of Science Education for AAAS promised to include it in the next issue of **Science Education News**. A representative of the National Education Association wrote stating its organ would publish information on the project in a forthcoming issue. The **Audubon Leader** contained a brief statement regarding the expanded services of ANSS and a reference for further information. This brought inquiries from Audubon societies across the country from Maine to California. Requests came from teachers, cooperative extension agents, outdoor education centers, a conservation district, a parks and recreation division and a college professor from North Dakota came rapidly and were answered promptly. Some people asked not only for information on speakers and workshops but requested materials to develop an environmental education program. Some were referred to Dr. Railton in California and some to Dr. Hug in Ohio both of whom sent aids for immediate use. The most recent development is requests for the list of speakers and leaders and their topics or the kind of workshops and field trips each is prepared to execute. To date there has been one refusal because of distance and time involved. The committee considers it important that each request be weighed on its merits and refusals must be graciously accepted. Leaders and speakers are urged to indicate limitations if they so desire.

At present the status of the project may be described as follows: there is wide distribution geographically of participants and requests. Although the Society membership was born in the eastern part of the country we find considerable interest and response in the Midwest, the Southwest, North as in Montana and North Dakota, and far West. Although nature oriented groups have made a majority of contacts we are finding governmental agencies active in environmental education or outdoor pursuits interested in this program. The project has had enough attention to be able to state that potentially it can become important. We must observe, however, that it is barely underway. It will require considerable time for the information to filter through to the groups needing the services. A concentrated effort must be made to first, enlarge the list of competent participants. The American Nature Study Society has literally hundreds of persons who are contributing already to these kinds of programs,

many in professions requiring such talents. Most of these when contacted are willing to contribute some effort to the expanded services of the Society. In some cases members are contributing help to related groups because of their dedication to the environmental education cause, and need only be invited to share their effort with ANSS. Members approaching retirement have expressed an interest in the project when their time constraints are lessened. We have some talented young people like John Briggs of Montana who are capable of making a great contribution and at the same time gain experience and valuable contacts which can serve them well in the future. Without jeopardizing quality, which our workshops have undoubtedly exhibited, we must identify a substantial number of willing members of all ages and abilities in order to meet requests within a reasonable distance and time frame.

A second urgent need is for more publicity. We started primarily at the national level but teachers and youth group leaders are best reached through state and local effort. This requires more people to work with the committee.

Programs for 1977 show an increased number of workshops developing. Urban environmental education is the emphasis for one in Reno, Nevada, Harrisburg and Dingmans Ferry, Pennsylvania. Another Edible Plants session will be held at Greenwich in June. Potentially this project can have far-reaching effects. The communications thus far have indicated that there are groups and individuals desparately in need of the kinds of services the American Nature Study Society members can provide. In turn, serendipitously, as more of our members become involved the society is revitalized.

AMERICAN NATURE STUDY SOCIETY

List of Members available in the Expanded Service Project for Schools and Organizations interested in Conservation and Environmental Education.

Baldauf, Dr. Richard J., Director of Education, Kansas City Museum of Science and History, 3218 Gladstone Blvd., Kansas City, MO 64123. Lectures: **Food and the Energy Crisis; Environmental Education—in Any Subject for Any Age; The Citizen's Role in Water Quality; Listen to the Earth;** also Environmental Workshops—informal programs of varying lengths to suit specific needs of schools, youth groups, adults.

Briggs, John (Redwood), P. O. Box 1034, Missoula, Mt. 59801. A recent graduate of the University of Montana in biology, environmental education and forestry; currently Media Director for Bikecentennial. John has presented exciting slide-tape programs to audiences throughout the western states. Subjects: **Simply Seeing; Teach**

Your Children Well; Wind, Water and Wildness; The Natural Role of Fire.

Busch, Dr. Phyllis S., 515 Rockrimmon Road, Stamford, Ct. 06903. Prominent author, lecturer, and teacher of wide experience emphasizing the importance of using the outdoors as an essential place for teaching. Workshops—For teachers K-6, **Outdoor Environments as a Part of Teaching;** walks with preschool children and their parents a specialty; also field trips for all ages, and field trip techniques.

James, Richard L., Executive Director of the Schuylkill Valley Nature Center, Hagy's Mill Road, Philadelphia, PA 19128. President of ANSS. Lectures and Workshops: **Nature Center Planning, Non-profit Funding; Foundation Grants for Fun and Profit; Environmental Inventories (Trash Trips); Teaching Environmental Science.**

Melvin, Ruth W., Consultant in Environmental Education and Field Geology, 8535 Winchester Road, Carroll, OH 43112. Author of field guides in outdoor and environmental education for the Ohio Department of Natural Resources and the Ohio Department of Education sponsored by the Ohio Academy of Science. Lectures: **Environmental Geology; How to Conduct Environmental Education Field Trips;** also Urban Environmental Education Workshops and Field Conferences.

Railton, Dr. Esther P.; Professor of Teacher Education, California State University, Hayward; 25800 Carlos Bee Drive, Hayward, CA 94542. Author, Lecturer and Workshop Leader. Subjects of Lectures: **The Swinging Door—Open and Shut Educational Environments; Environment—A Way of Teaching. Workshops in Teaching Science in the Outdoor Environment.** Field trips a specialty.

Rosner, Joan Mulhern, 4300 Sunningdale, NE, Albuquerque, NM 87110; and 3245 McDonald Street, Coconut Grove, FL 33133. Former teacher and coordinator of environmental education in New York City. Presently conducting with her husband the Watson Ecology Workshop and numerous activities in New Mexico. Recipient of several awards including the American Motors Conservation Award. Workshops: **How to Conduct Teacher Training Summer Workshops, Shoestring Educational Programs in City Parks, Solid Waste and Overconsumption, Air Quality and Its Control; Setting Up a School Environmental Education Center.**

Russell, Dr. Helen Ross, 44 College Drive, Jersey City, NJ 07035. Author, lecturer, environmental science consultant. Lectures: **Earth, the Great Recycler; How to Write—A Book or an Article;** Workshops: **Urban Environmental Science; Edible Plants.** Dr. Russell initiated the ANSS Workshop Project. She has conducted workshops for the Society at Bridgeport, Ct., Washington, D.C., and Greenwich, Ct.

Shannon, Michael, Educator-Naturalist, Aullwood Audubon Center, 1000 Aullwood Road, Dayton, OH 45414. Formerly Director, Greenwich Audubon Center working extensively with New York City teachers. Workshops: **Urban Environment and Nature Study; Interpreting the World Outdoors.**

Padalino, John J., Director, Pocono Environmental Education Center, Dingmans Ferry, PA 18328. Adjunct professor of Environ-

mental Studies, Montclair State and Hunter Colleges. Former teacher of science and social studies. Lectures and/or Workshops: **Residential Environmental Studies Program; Planning, Implementing and Maintaining Them; Urban Environmental Studies; Field Ornithology, Fern Forays; Wildflowers of the Tri-State (NJ, NY, and PA) Area.**

WHO'S BLIND?

by MARSHAL T. CASE

People who are handicapped through partial or total loss of sight have much to share with those "more fortunate" individuals who possess full sight.

If you are a teacher and live near a school for the blind or home for the elderly or are a naturalist and work at a nature center, you could introduce yourself to a most rewarding experience.

Arrange to go to the special school or have a group come to you at your nature center. Your reward will be immediate and you will probably share natural history information with people who have never had exposure to your fund of knowledge. And, you may find yourself holding out a frog to be touched by a person eighty years old who has never had the opportunity to "see" any amphibian.

If a green frog is the topic, point out the dorsal-lateral ridge, the webbing between the toes, the long legs and the wide mouth. Your "blind" student will probably discover the special ridge more quickly than the sighted people you work with daily. If a plant leaf is the topic, ask your student to describe it for you. "Blind" people can quickly point out plant features that most of us have overlooked for years.

The best guideline in working with these special students is to remember that you should teach them the same things you normally teach about frogs, crayfish, ferns and turtles. You will delight in the gentle way your specimens are handled, too!

Most important, make an effort to identify these people in your community and offer some programs for them. Many times they have never had the refreshing experience of studying nature. They do not need special treatment either. They are eager to have the same opportunity you offer to others and grateful for the chance to study nature—not braille and tapes.

READ ABOUT "CITY CRITTERS," the animals that might be called the INESCAPABLE CROWD—There's no corner of the world that they have not taken up residence. Some are in your house—even in the country! Order CITY CRITTERS by sending \$4.45 to A.N.S.S., R. D. 1, Homer, N. Y. 13077. (\$3.50 for members)

AGASSIZ ON NATURE EDUCATION

by RALPH W. DEXTER

Department of Biological Sciences
Kent State University, Kent, Ohio
Historian, American Nature
Study Society

During lectures Louis Agassiz (1807-1873) gave to his students at the Museum of Comparative Zoology at Harvard University, he occasionally commented on the essence and role of Nature Education. He is well known, of course, for his famous dictum, "Study nature, not books." Following are a few excerpts from his lectures as recorded by Adelaide Edmands who accompanied her fiancé, F. W. Putnam, to Agassiz's classroom.

During his discourse on 24 October 1860 Agassiz said, "Before proceeding with my lecture, I wish to caution you against the use of textbooks. The errors which they contain, are so enormous, there are such quantities that are mere compilations, that I can almost say that they mislead the student, rather than aid him. The true method of instruction is to present evidence, step by step, until the pupil can, of his own free will, grasp the conclusion.

"My aim shall be to give you such information as will aid you to learn for yourself. In order to follow such a course, it is necessary that I should limit myself to a few subjects, and treat them thoroughly. And you can by analogy use the same process of reasoning on other points and subjects which may be brought before you."

Again, at a later date, he explained, "I will today approach a subject, upon which, as yet, but little is known. But on that account I do not hesitate to bring it before you; for part of a teacher's duty is not only to show his pupils what is already known, and what conclusions are already arrived at, but also to lay [before] them the ascertained facts on subjects, upon which no conclusion has been reached."

Agassiz's students continued his tradition of bringing studies in natural history to the amateurs and general public as well as to university students and professional naturalists. I have recently published a paper which outlines the contributions of the Salem group of Agassiz's students to natural science education. (*Bios* 47: 25-30. 1976).

No person has had such a profound influence on the teaching of natural history in the Western World as did Louis Agassiz.

CHARACTERISTICS FOR GOOD INTERPRETATION

Compiled and edited by JAMES R. VANKO

"What Makes An Interpreter, Interpret?"

In the past twenty years many things have been written concerning environmental interpretation. People like Freeman Tilden, J. Allen Wagar, Grant Sharpe, Paul Risk, and others all stand out as leaders in the field. After reading many of the publications and working as a naturalist I thought to myself, "Wouldn't it be useful to have all the famous quotes, characteristics, and observations of a good interpreter condensed into a few pages?" WHY NOT!! I sat down one rainy afternoon and re-read all the publications and notes on interpretation and compiled what I thought were the highpoints. I jotted them down along with some of my observations and came up with, "What Makes An Interpreter, Interpret?"

Additional Note:

I by no means take credit for many of the following quotes. They were taken from a variety of books and publications along with a few of my own experiences. Consult the bibliography for these publications. I've also included some additional readings that I've found useful.

PART ONE — "INTERPRETATION OR INFORMATION"

Adapted from *Interpreting Our Heritage*
by F. Tilden

... "You must be in love with your material and in tune with your fellow man."

—Freeman Tilden

1. Strive to touch something within the visitors personality and his experience. Your communication will fail unless there's something they can relate to.
2. Capitalize on visitors curiosity. Make use of what the visitor already knows and is interested in.
3. Never place yourself above the visitor and talk with them, not at them. Help them to discover for themselves and be not so much a teacher but a companion in adventure.
... "What a man hears, he may doubt,
What a man sees, he may possibly doubt,
What a man does himself, he cannot possibly doubt."
— Dr. Seaman A. Knapp
4. Strive to make the visitors feel at ease in your presence and promote a friendly atmosphere. Try to give them the feeling you're truly interested in them.
5. ENTHUSIASM!!! SPARKLE!!! CONFIDENCE!!! PATIENCE!!! AWARENESS!!!
6. Interpretation is a revelation of information. It goes deeper than spouting out facts. The information you're trying to relay must come ALIVE to the average man.

7. Interpretation aims not to do something to the visitor, but to provoke the visitor to do something to himself. Try to put in your visitor at least one fruitful idea that may grow into true interest. By doing this you may stimulate the visitor to explore on his own.

... "Understanding must start with seeing it, hearing it, smelling it, feeling it, and perhaps even tasting it.

—Yorke Edwards

8. NATURE MINDED FIRST THEN NATURE WISE!

... "It is more important to feel than to know. Plant the seeds that later produce knowledge. Arouse the emotions and the wish for knowledge will come. Once found it will have lasting meaning.

—Rachel Carson

... "People come to the parks to relax and get away from it all. Purposely or by accident they discover nature and it holds out a hand. They then want to know more of its secrets.

—Freeman Tilden

9. Try to stimulate your visitors to first want to discover nature for themselves, then to see and understand the things at which they look.

10. Aim to present a whole rather than a part no matter how interesting the part is. By giving him a whole rather than a part you can't miss hitting something that will arouse his interest.

11. Be sensitive to the visitor and try to love people, love in the sense of never ceasing to understand the visitor and their faults. Try to understand their ignorance of a subject and the reasons for it.

12. So they ask a silly, stupid question, eh. Look at it this way — "The visitor may be just trying to show their appreciation and interest in what you're saying and doesn't know any other way to express it. They're on vacation, probably been driving all day, they're in a new area — why, they're entitled to a few stupid questions."

13. REMEMBER: People weren't born to make an interpreter uncomfortable.

14. If you love the thing you interpret, and love the people who come to enjoy it, you need to commit it to memory. When you love the thing you interpret you've taken the pains to understand it and feel its special beauty.

... Interpretation promotes awareness; awareness promotes understanding; understanding promotes appreciation; appreciation promotes protection.

—Freeman Tilden

15. When dealing with human history topics try to present it as living people from the past and help visitors to develop a kinship with it. — THE PAST IS A LIVING REALITY!

... It is our responsibility as interpreters to stimulate individuals to a greater appreciation and understanding of the natural world and life in general.

—Charles Mortensen

16. When communicating with a visitor don't carry a thought to the point of wearing it out. We should try to leave

something for the visitor to think about for himself.

. . . The visitor hasn't come to be educated. He has come to see and experience something new.

. . . A naturalist lives a life of constant discovery.

Beauty is always a very difficult thing to interpret. The following list of guidelines should help in interpreting those things that are too beautiful for words.

—Create for the visitor the best possible vantage point to see beauty and try to establish a mood.

—Don't interpose between the visitor and the scene.

—You don't make a scene more beautiful by saying its beautiful!

—Send the visitor away with something more than just fact, something called inspiration.

—Beauty is a personal possession; it needs no interpretation. The interpreter needs only to be a guide, a companion in adventure.

. . . If something is aesthetically pleasing it will create a sense of wonder, appreciation, awareness, and curiosity in us. Always look for the beauty in nature no matter how simple. There is certainly beauty in a rugged mountain range but there's also beauty in freshly frosted leaves, glistening dew, and the soft sounds that nature creates.

—James Vanko

* * *

PART TWO — "COMMUNICATIONS FOR RESULTS"

—Adapted from *Interpreting the Environment*, Ed. by Grant W. Sharpe

The following list of questions and guidelines need to be satisfied to insure a good contact with the visitor.

1. Are you providing a **fun and entertaining experience** as well as educational? Visitors identify much more readily with entertainment versus lecturing.

2. You must gain and hold the **attention** of the visitor.

3. Experience of this communication must be **rewarding**.

4. Your visitors should **feel at ease** in your presence.

. . . Keep the light touch of a smile in your eye and the tone of a smile in your voice.

5. **Know with whom you're communicating.** Mingle with your audience prior to your program and begin with a good warm-up (get them on your side).

6. **Cater to diverse interests.** You come in contact with many different types of people, try to relate to as many as you can.

7. Strive to **touch people's lives.** Give them something they can relate to in their everyday lives and experiences. Your vocabulary must be readily understood and within the experience of the visitor. When using examples try to draw upon situations familiar to the visitors.

. . . Put yourself in the audience's shoes, and look at your communication from their viewpoint, and in light of their needs. Simply to have understanding yourself of a thing does not qualify you to interpret it. —Yorke Edwards

8. Do not assume the visitor is always interested in what you have to say.

9. Do you have **clear, concise objectives** in mind when preparing and presenting an interpretive activity.

****ARE YOU ENRICHING THE VISITORS EXPERIENCE AND MAKING THEM MORE AWARE?**

****ARE YOU GIVING A FAVORABLE IMAGE OF YOUR ORGANIZATION?**

****ARE YOU WORKING TO IMPROVE YOUR PUBLIC IMAGE AND UNDERSTANDING OF YOUR AGENCY?**

. . . Successful interpretation is a balancing or juggling act, a graceful and smooth ballet of interaction between your interpretive presentation and the mind of the listener.

—Paul Risk

* * *

PART THREE — "WHAT IT TAKES TO BE A GOOD INTERPRETER"

DO YOU HAVE:

1. Personality: SPARKLE*
2. Understanding
3. High People Threshold
4. Sensitivity
5. Finesse
6. Patience — Awareness — Confidence
7. Involvement: Jack of All Trades and a Master of Most
8. Charisma: Magic of Leadership
9. Appreciation of nature and a desire to help others appreciate and understand nature's wisdom.
10. Willingness to work and be committed to a cause.
11. Attitude: Affair of the Heart
12. Communication ability
13. Innovator
14. Drive: Ability to make changes — ADAPT
15. Flexible: Ability to listen
16. Education: Desire to always learn and discover

TO BE CONSTANTLY CONTINUED

. . . The interpreter's greatest challenge is: What to do? What to say? How to point the way? How to connect the visitor's life with the treasures of nature. How to make them feel and say — "This is something I could get interested in!"

—Freeman Tilden

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20 of these large cloth tote bags have been donated to ANSS by an anonymous member to provide funds for the society. Please send your request to: Crayton Jackson, Pikeville College, Pikeville, KY 41501 (cost — \$6.50).

GOOD READING *for Environmental Education and Interpretation*

Interpreting The Environment, Grant W. Sharpe, Editor. John Wiley & Sons, Inc. New York, Toronto, London, Sydney, 1976. XVI = 566 pp. illus.

For many people what nature says is a strange language communicating little that makes sense. The man-made environment also is often incomprehensible, too complicated, too artificial, or too remote from its historic causes. So we need interpreters, trained people versed in the vernacular and knowledgeable about the more complicated ways of nature and man.

The American Nature Study Society is proud of its past contributions in the field of interpretation based on close attention to nature; and recently our members have given increased emphasis to man's role in reshaping our environments. Many of us have stressed the need to educate millions of urbanites, developing their joy and pride in their city environments so as to inculcate understanding of and care for the natural environs basic to all city life. Our partners in these educational projects have often been members of the Association Of Interpretive Naturalists (AIN) and the Western Interpreters Association.

Now Dr. Grant Sharpe, one of the founders of AIN, has gathered the expertise of many foremost interpreters of nature and social phenomena into a text which should greatly advance the science and art of interpretation. Well written and well illustrated, it should be owned and used by many of us. We should also make sure that our local park and recreation people buy it and profit from its many helps and challenges.

While the focus is for the interpreter at parks or similar areas where visitors-of-leisure congregate, the 27 chapters by 20 authors include many facts and much wisdom useful to school teachers, youth leaders, personnel at museums, libraries, refuges and sanctuaries, and especially those who educate such people on the job or in universities.

I have read every word of this book (except the 24-page index) and hope many other ANSS members and friends will do likewise. Don't overlook the many excellent references listed at the chapter ends; therein lies a great peripheral wealth for those of us determined to help other people understand as best we can the world around us.

J. W. Brainerd

HARVEST OF A QUIET EYE — A WINNER

Harvest of a Quiet Eye: The Natural World of John Burroughs has been selected as one of ten winners in the 21st Annual Midwestern Books Competition, contest director Lawrence S. Thompson of the University of Kentucky announced recently. The book was published by Tamarack Press, a division of Wisconsin Tales & Trails, Inc., of Madison, Wisconsin.

Harvest of a Quiet Eye combines the writing of the eminent American naturalist John Burroughs with sensitive color photographs by Charles F. Davis of Oak Park, Illinois.

Selections for this competition, based on "typography, design, and quality of production," were made by Sandra D. Kershenbaum, editor and publisher of Fine Print; Adrian Wilson, book designer, author, and printer; and Frederick C. Mitchell, of Scrimshaw Press.

Harvest of a Quiet Eye was produced entirely in Wisconsin, according to editor Jill Weber Dean. It was designed by Phill Thill, typeset by Fleetwood Graphics, and printed by Litho Productions, all of Madison. Binding was done by Worzalla Publishing of Stevens Point.

Winning books will be displayed in exhibits across the country and at university and public libraries. Copies of the books will be added to a special collection in the University of Kentucky Library.

The Plight of the Right of way Domain

— **Victim of Vandalism**, Part I. Egler, Frank E. Futura Media Services, Mt. Kisco, New York. 1975.

In the fourth and fifth Century, the Vandals were adults. The same is true today. A vandal is one who wantonly destroys what somebody else values. Fortunately there are those like Dr. Egler who value soil and growing things enough to cry "Vandalism!" when the millions of acres of utility lines and roadsides are grossly mismanaged.

People's values stem from experience, their own and that of others. During the thirty years I've known Frank Egler, only a handful have listened to him, a few plant ecologists who saw that he had a multitude of laboriously gathered experiences to

guide him to fundamentals of vegetation management. Those in power have not wanted to listen, for two reasons. Egler can be irritatingly right; and, in the short term outlook, money can be made by managing land with disregard for ecological facts.

People who call all native shrubs "brush" had better admit their ignorance and listen to Egler — whether they want to or not. A yew bush on each side of the door will never suffice to make a beautiful and efficient American way of life. It is our duty in nature education to become familiar with the ecological facts of life à la Egler and to see to it that all those responsible for right of ways pay attention.

One must read Egler as Egler. Don't be put down by his exaggerated statements stemming from his bitterness; understand its basis in frustration. Delight in his humor, even though it is based on the foibles of society as was that of Dickens and Daumier. Be surprised that a modern Ph.D. has so much studied the leaves of both bushes and books, in many languages. Be ready for hard facts mingled with satire, starting with Jonathan Pseudo Swift and ending with "thick-coming fancies" of Macbethian pseudoShakespeare. Be intellectually nourished by the vegetation science sandwiched between the art slices.

Egler says he does not blame the right of way vandals broadcasting planticides. He blames all who tolerate them and their mayhem. Irritatingly, he blames you and me. Egler is right. So read THE PLIGHT OF THE RIGHT OF WAY DOMAIN, Part I.

— John W. Brainerd
Prof. of Biology
and Conservation
Springfield
College
Springfield, MA
01109
22 May 1976

LEARN TO BE AN OBSERVER OF THE COURSHIP, FAMILY LIFE, PARENTAL RESPONSIBILITIES HISTORY AND NATURAL HISTORY of the world's most successful animals. Mail your order for CITY CRITTERS, by Helen Russell, to A.N.S.S., R. D. 1, Homer, N. Y. 13077, enclosing \$4.45 per copy. Want it autographed? We will arrange it if you tell us (\$3.50 for members)

NATURE STUDY

NEWS and NOTES for Environmental Education . . .

The "City Critters" Project

Through the generosity of Helen Ross Russell, former president of ANSS, the publishing rights to her book, "City Critters," has been given to the Society as a means of raising much-needed funds to support our activities. A revised edition was published in 1976, with a printing of 2500 copies. To date 700 copies have been sold, permitting the Society to pay \$1650.00 to the printer, who has kindly agreed to receive payment as the books are sold. Our outstanding bill to the printer is \$3350.00.

Initial sales have been mainly to ANSS members and a few nature center book shops. We want to sell the books through regular retail book outlets. ANSS members and friends are urged to ask their local book shops to order copies for sale. The book retails for \$3.95 — wholesale price is \$3.00 per copy. Orders should be sent to: J. A. Gustafson, R. D. 1, Homer, N. Y. 13077.

If you wish to order copies for yourself or to give as gifts, send your order to the same address, enclosing \$3.50 per copy for members, \$4.45 per copy for non-members. Books will be shipped postpaid.

INVEST IN YOUR SOCIETY AND GET A GREAT BOOK AT THE SAME TIME!

Eva L. Gordon Award

Herman and Nina Schneider, the recipients of this year's Eva L. Gordon Award, pioneered in producing good readable exciting physical science material for young children.

I well remember Eva Gordon's pleasure when **How Big is Big?, Let's Find Out, Now Try This, and Let's Look Inside Your House** arrived on her desk when she was preparing the September 1949 Cornell Rural School Leaflet entitled **The Elementary Science Library**.

Eight years later in September 1957 Eva wrote a sequel leaflet entitled **Science Books for Children**. Seven other Schneider books were reviewed in this publication.

At all times Eva stressed the fact that good elementary science material could only be produced by persons who knew both the subject and the intended reader and that material prepared by college professor-scientists without knowledge of kids and their ways was no better and no worse than material prepared by authors who knew children but were woefully ignorant of science.

Herman and Nina Schneider bring both kinds of knowledge to their writing. Herman has a BA and MA in science and from 1928 to 1948 he taught science in New York City public schools. Then he moved into the position of science supervisor for a five-year period. Nina was a teacher and librarian. She says she started writing books to answer questions asked by her own children and the children with whom she worked. She's writing for grandchildren today.

The Schneiders have been producing children's books steadily for more than 30 years. A few have been solo acts like Nina's **While Susie Sleeps** published in 1948 — a book that is still in print!

In 1950 and 1951 Herman wrote **Everyday Machines and How They Work** and **Everyday Weather and How It Works**. But most of their books are joint efforts. Altogether they have written 67 books. The books deal with topics that touch children's lives and they invite the children to reach out, examine, experiment and learn about their environment. They are great resource materials for teachers, too. Sometimes by simply reading a recent book like **Scientists' Find Out About Motion, Time, Space and Energy** (1976) they receive a quick and easily digested updating on things that kids are asking questions about. Sometimes they can become a team with Herman and Nina by providing materials for kids to ". . . Try This" or ". . . Look Inside . . ." Sometimes they can find their load lightened while kids minds are expanded when they turn them loose with a Schneider book.

It's not surprising that Herman and Nina's books are popular with children and adults. It is most appropriate that this husband and wife team be recognized for their contributions by their fellow members of the American Nature Study Society.

(Since Herman and Nina Schneider were unable to attend the Denver meeting, all the members of the American Nature Study Society who live in N.Y.C. and who could be contacted by telephone, met at the home of Bob and Helen Russell to honor them and present them with the Eva. L. Gordon award.)

Ohio Foundations Grant \$60,000 For Environmental Education

Washington, D.C. — The Cleveland and the George Gund Foundations have each awarded a \$30,000 grant to The Nature Conservancy for develop-

ment and testing of a pilot environmental education project using five natural area preserves acquired by the Conservancy in Northeast Ohio. The project will involve junior high school students in Holmes, Geauga, Lake and Cuyahoga Counties. An important product of the project will be the development of a Field Work Book for Investigating a Natural System. The Work Book will enable volunteers to implement an environmental education program with local schools, utilizing Conservancy preserves as the study areas. Development of the program will be a joint effort of The Nature Conservancy and the Institute for Environmental Education which is based in Cleveland, Ohio.

The project will also include preparation of a model kit of environmental test materials, an instruction manual for volunteer stewards, who make up Conservancy preserve management committees, and selection and training of schools and teachers to test the program. According to R. M. Culter, a Cincinnati native who heads up the Conservancy's stewardship efforts nationally, "based on the results of this pilot project in Ohio, the program could be provided to Conservancy volunteer preserve managers nationally as well as to other organizations to help them build effective environmental education programs."

Culter continued, "the unique advantage of the project is that it benefits both the preserve committees and the schools. The Conservancy provides its preserve as an inexpensive outdoor classroom. Conversely the program has a built-in system for monitoring the effects of use of the preserve (such as soil erosion or destroyed vegetation)." Thomas W. Offutt, Vice-president of the Institute for Environmental Education added, "the students involved in the program will be providing essential information which can be used by the preserve committee in making management decisions. At the same time the students learn how to "read the land" and develop a responsibility for it. The data gathered by the students is an important key to the ongoing protection of the preserve."

The Nature Conservancy is a national, non-profit conservation organization dedicated to natural area protection in the interest of natural diversity, scientific inquiry and educational use. To date, the Conservancy and its 25,000 members have been responsible for the preservation of some 1,114,000

acres involving 1,775 projects. The Conservancy currently owns and protects over 660 nature preserves located throughout the country. Tamra Peters, project coordinator for the Conservancy said, "the Ohio environmental education pilot program could lead to making each Conservancy preserve an invaluable resource for nearby communities and educational institutions. Our special thanks go to the George Gund and Cleveland Foundations for their support."

In announcing the grant, James S. Lipscomb, the Gund Foundation's Executive Director said, "We commend

the Conservancy and the Institute for Environmental Education for the creativity and initiative present in the planning of this undertaking and are confident that it can add in many ways to increasing the effectiveness of environmental education and public benefits from Conservancy preserves."

Commenting on today's announcement, Dr. Richard Thompkins, Program Officer of the Cleveland Foundation said, "This is a type of grant that we are particularly enthusiastic about because it combines two top-flight nationally recognized organizations in a mutual effort to strengthen the quality of en-

vironmental education available to school children and citizens."

The Institute for Environmental Education (I.E.E.) is a national non-profit foundation incorporated in Cleveland, Ohio in 1971. The Conservancy selected I.E.E. for this project based on a program the foundation had previously designed. The program, designated a National Demonstration Project of the U.S. Office of Environmental Education, was recently recognized as one of the 100 most significant community action programs in the country by the Department of Housing and Urban Development.

PDE Developing Environmental Education Course

HARRISBURG — What's your environmental I.Q.? How good a caretaker are you of the world you live in?

Can you identify the ways our resources are being used and describe the relationship between technology and their use or misuse? Do you know the relationship between humans and environmental problems? Can you identify environmental problems, their causes and think of some ways to improve the quality of life in your own community?

Those are things the Pennsylvania Department of Education says kids should learn in school by the time they graduate from grade 12. They're called "competencies" — things children should know or be able to do. The PDE lists about 30 of them.

Competencies came under four basic abilities — to define the total environment; identify and understand the major environmental problems; make intelligent decisions for immediate and long-range care of the environment; and show positive concern for the environment by participating in activities to maintain and improve it.

The competencies — developed in the PDE — are among the new educational materials the department will make available for teachers to use in environmental ed next school year.

Robert Schwille, PDE environmental education adviser, reports that the department also has compiled and pub-

lished a model K-12 curriculum. Included are computerized materials, from the Research and Development Complex at State University College, Buffalo, N. Y., which will enable a teacher to tailor a specific program for each individual student based on his or her age, mental level and interests.

Some of its contents were developed by the New Jersey State Council for Environmental Education.

In addition to the competencies and computerized materials, the PDE has published, with permission from the Educational Research and Information Center based at Ohio State University, specific teaching activities for youngsters from kindergarten to grade 3.

What can you teach kids that age about the world around them and their place and responsibilities in it? Says Schwille, "Many things. You can even lay the groundwork for some rather technical knowledge."

For instance, he explained in one suggested activity the kids would learn the basic principles and techniques of solar energy through observing that the south side of a school or house feels warmer than the north. They might also build model houses with more windows on one side than the other and place them on a sunny windowsill to learn of temperature differences.

In language arts, after a trip they might try to think of words to describe a forest or tree, the actions of a bird,

the odor of a flower, the feel of wet moss or the smell of pine needles.

High on the list of recommended activities for all ages are trips — either close to school or farther away — such as a tour to the dairy store to learn about milk products, a walk to inspect the effects of a severe rain or snow storm, a trek to check lawns and alleys to see whether they are clean, well kept and an asset to the neighborhood.

Schwille stresses that environmental education needs to be strengthened in all schools. He points out that the State Board of Education in 1969 ruled that it must be taught at all grade levels, either as a separate course or as integral to all other subjects such as math and science. The materials the PDE is distributing use the latter approach.

Not only has the State Board affirmed the importance of this kind of learning, the Pennsylvania General Assembly has enacted a state Environmental Bill of Rights, guaranteeing a quality environment to each Commonwealth citizen.

But the PDE's Pennsylvania Environmental Education Advisory Council, which helped develop the competencies, cautions:

"These rights will not be upheld automatically. Each individual citizen must work to make sure that they are carried out. What is needed, therefore, is an informed citizenry equipped with the facts, skills and attitudes necessary to protect their rights."

THE 1977 FALL DATE

We are pleased to announce a unique fall marriage occurring October 21-23 in Philadelphia. The Pennsylvania Alliance for Environmental Education and The American Nature Study Society will hold their membership meetings and conference together. Directors in both groups felt that there would be a positive value to the interchanging of ideas between and among the members of the two groups. The land site for the meeting will be the idyllic Schuylkill Valley Nature Center. Accommodations will be available at the adjacent Sugar Loaf Lodge and conference center of Temple University, and George Washington Motor Lodge at Plymouth Meeting, PA 19462 (about 6 miles away).

For the hardy souls, limited camping sites will be available at the nature center.

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Crayton Jackson
556 W. Sun St.
Morehead, KY 40351

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The American Nature Study Society

Invites you to join us in promoting Environmental Education

Send in this membership form to Crayton Jackson, 556 W. Sun St., Morehead, Kentucky 40351

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