Nature Study

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TALKING ABOUT SENSE ENERGY

The American Nature Study Society

Wild Foods Weekend

The National Audubon Society and ANSS, in the persons of Jean Parker and Helen Ross Russell, teamed up to run another successful Wild Food Weekend at Greenwich, Conn. June 4-5, 1977. Here's the menu:

June 4

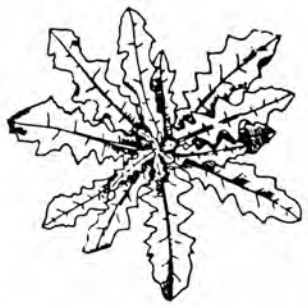
9:00 a.m. check-in: apple mint tea
crackers with elderberry jelly

Lunch: Sicilian dandelion soup
Greek lamb with dandelion
breaded burdock petioles
tossed mixed salad
sauteed violet greens
confetti biscuits with rose-petal honey butter
Finnish pancakes with rose-hip jelly
bergamot and/or fragrant goldenrod tea.

Supper: cream of sorrel soup
stuffed grape leaves
steamed lamb's-quarters (pigweed)
soufflé of greens
Italian burdock flower-stalk casserole
black walnut quick bread
jello/yogurt Bavarian cream wild green salad
dried deciduous holly leaf tea
rose-petal ice cream

(program: slide show of Colonial uses of plants)

GARDEN SORREL



DANDELION

June 5

(Coffee for early risers who felt a need.)

Breakfast: eggs Greenwich — a wild green, large-group adaptation of eggs Florentine, invented for the occasion.
fried bread
fresh deciduous holly tea

(In answer to the question, "Why dry it?", it's decidedly more Chinese-tealike dried.)

Dinner: rose-petal soup
soul dandelion and mustard
sarsaparilla cottage cheese salad
(with red clover, various herbs and other delicious tidbits — an artistic and culinary masterpiece)
milkweed flower bud casserole
fried leeks
wineberry-whole wheat bread
"Colonial tea" — concocted from seven herbs gathered and dried the day before plus a strip of dried orange peel and half dozen cloves.
dessert: frozen strawberry (wild plus some cultivated supplement) yogurt made in the hand churn.

Thirty people ate epicurean meals, and because Jean and Helen donated their time, each society is $200.00 richer.

LAMB'S QUARTERS

(Cover design: Queen Anne's Lace or Wild Carrot. Original sketch by Maureen Bartel)

Talking Sense About Energy

DANIEL HALEY
Assemblyman, New York State

We are at war in energy, and I would like to outline what I see as some basic principles of a sound energy policy.

First and foremost, energy is not just something for us to have only if a private company makes money selling it to us. Energy is **infrastructure,** just like roads and railroads. It's one of the things that's got to be there for our society to function.

The second principle relates to where we are at the moment: we must get unhooked from our petroleum addiction! The Shah of Iran says that oil is too precious to burn, and he's right! Oil has got to be saved for the things we can only do with oil — the petrochemical industry won't run on sand.

The next principle of a sound energy policy logically follows: we must husband **all** our exhaustible resources for the generations yet to come and that means natural gas and coal as well as oil. If we continue to be prisoners of an energy policy that seems to feel that you've got to burn something in order to get energy, we will commit the crime of depriving our posterity of needed resources.

Therefore, the next principle: our energy infrastructure must provide energy from **renewable** sources. These are, of course, the solar sources: solar heating and cooling; solar cells for direct generation of electricity; harnessing the winds for generating electric power and, through electrolysis, producing hydrogen to use for generating power when the winds do not blow; bioconversion; and the most limitless solar source of all, the use of the greatest solar collector in the world, the sea, through the process known as sea thermal gradient.

A further principle: energy conservation does NOT mean lowering of standards of living, but the creation of jobs in the installation of energy saving technology, and thereby the saving of enough money (from the energy not used) to pay for the installations.

It is an obvious corollary of such an energy policy that the creation of new energy from renewable sources, and the substitution of energy by conservation, enable us to get and to save energy by creating jobs right here in our own states and nation. A proper energy policy can be what will turn this country around!

Using solar and energy conservation technology, another principle of an energy policy emerges: we should strive, as a national policy, for the **maximum energy independence** at the **lowest consumer level** possible. Energy independence means that if you can capture enough solar energy in your **home,** in your **school,** or your **factory,** to provide your electricity and your heating and cooling, that's great!

Tremendous energy independence at the level of **individual units** is possible, which will significantly diminish demand, but we shall still need considerable amounts of energy produced at centralized points.

What form shall it take?

Former President Ford proposed to achieve energy independence by building 200 new nuclear power plants, carelessly overlooking the fact that even now we begin to depend on foreign uranium. Energy independence going the nuclear route could only be achieved with the breeder reactor, and no one knows if this can be built successfully, safely, and economically. In effect, our breeder program is like buying a pig in a poke — but it may not be a pig, it may turn out to be a lemon! The breeder that had been operating — in Moscow — is now shut down; the reason? An accidental explosion!

In 1969, it was proposed to build the first experimental breeder reactor in this country near my home town of Waddington, N. Y., on the St. Lawrence River. It went away to Tennessee, but I have been studying the nuclear approach to energy ever since.

As a result, I introduced the first nuclear moratorium bill to be presented in New York State. The following are some of my reasons.

Utilities have advertised that nuclear plants are no more dangerous than chocolate factories. But chocolate factories can be built right in the middle of large cities. Then why cannot nuclear plants be built in large cities? Because the site selection criteria for nuclear plants looks for places where the population is sparse and can be easily evacuated. I believe that the laws of this nation should say that nuclear plants can be built **when** they are safe enough to be built **at the locations where the power is needed,** and not just where the population is sparse and can be easily evacuated.

Utilities say that nuclear plants are safe. Then I also propose that the laws require that no nuclear plant be built unless the sponsors agree to waive the limitations on liability provided by the federal Price-Anderson Act. That act is up for renewal. Since the utilities tell us that nuclear plants are so safe, then let the Congress NOT renew the Price-Anderson Act, the nuclear "No-Fault" bill, which prohibits lawsuits for over 560 million dollars for damages caused by a nuclear accident. Since nuclear plants are supposed to be so safe, let us require them to obtain **private** insurance for all damages that an accident might cause. Coal-fired plants need no such No-Fault, nor would solar power generation. Why a Nuclear No-Fault?

The Price-Anderson Act should not be renewed except for **existing** plants or those nearly finished (to protect our populace, for private insurance is not available), and then the renewal should include protection against the **present** estimated costs of a nuclear accident: the 560 million figure was from 1957 when the Act was first passed; the recent Rasmussen Report, considered very conservative, puts the figure at 6.2 billion dollars!

If these plants are safe as chocolate factories, the atomic industry should certainly not worry about the cancellation of the Price-Anderson Act for future nuclear plants.

One last word on nuclear plants. When we build a coal plant, we have no doubt that we shall have enough fuel for the economic life of the plant; and the question obviously would not arise from a solar plant. We have plenty of doubts on oil, of course.

Therefore, it seems logical that state law, and federal regulations, should require that before a nuclear plant is built, it be able to show that it has an assured supply of fuel for the life of the plant. The recent denunciation by Westinghouse of 10-year contracts for supplying uranium to nuclear plants it had built makes the point: Westinghouse could foresee as much as a billion dollars in extra costs.

It is obvious, then, that one of the imponderables in the nuclear energy situation is the cost and supply of fuel. Therefore, it is logical that plants should not be built unless a guaranteed supply of fuel is assured, and at

firm prices, so that the public knows what it is committed to pay for. Solar power plants can meet this requirement. If nuclear plants are to compete successfully with solar, then they should meet this requirement as well.

What about oil, and gas, and coal? Some changes must be made.

First, full, total reporting of fossil fuel reserves. Do we **really** have a natural gas shortage? Nobody knows, although the gas companies say we do, and say it's because they need more profits. They have not yet explained why the 15% they are guaranteed under present rules is not enough.

Second, we must break up the energy conglomerates on two bases:

A: If you own one kind of energy, you can't own another, i.e., if you own oil, you can't own coal, natural gas, or uranium, etc., and **no** holding companies may own both.

B: If you are in the production of one of these fuels, you are absolutely forbidden to be in the retailing of it.

Third, until some competition can be injected into the fossil fuel field by the first two measures, price controls must be maintained on oil and natural gas. They also should be extended to coal, since 60% of the coal is owned by oil companies, who have grossly raised coal prices. There is no reason for OPEC prices to be transferred to American domestic oil, natural gas, or coal production.

Fourth, coal is our only abundant fossil fuel, and we may have to lean on it somewhat for the next 5 to 10 years while we are bringing in solar energy. During that time, the price of coal, while not needing to reflect OPEC ideas on prices, must include the cost of **restoring** the mined land.

In all of this, it is vital that Congress have the wisdom to direct capital toward the creation of an infrastructure that will deliver us energy from **renewable** sources, and that means solar. The greatest feature of solar energy is that once the capital infrastructure is installed, the **fuel is free,** and thus the costs of energy are simply the costs of transmission and delivery.

Can we get the technology? One thing is obvious: the Federal Energy Research and Development Administration is going to take as long to bring on Solar energy **as they can get away with!** Somebody who's calling the shots knows that when you've got abundant solar energy, you won't be buying so much oil, or gas, or uranium. This is why there's so much push at getting us to use energy sources owned by the energy industries.

While solar energy for the consumer is essentially a low technology field, 98% of the government grants are geared to researching highly sophisticated theories and systems. Above all, the ERDA money goes for studies and more studies. As long as they can get away with studying instead of building, they're going to do it.

That's why during the last session of the Legislature we in New York State set up our own ERDA. We're in a hurry in New York State — and we should be, for we're 50% more dependent on oil than the nation as a whole. So we turned our existing Atomic and Space Development Authority (ASDA) into the New York State Energy Research and Development Authority (NYSERDA), with authority to spend ten million dollars a year to bring into the marketplace renewable energy technology and energy conservation technology.

That may not seem like much money, but by doing joint projects with other governments that are also in a hurry, and even getting some money from the federal ERDA, I predict that within two years, New York State's ERDA can bring to the marketplace: 1) wind generation technology with the capacity of supplying vast amounts of power to New York City from the wind fields offshore in the Atlantic — and thus holding up the prospect of eventually **lowering** the City's power costs, as an inducement for industry to return, or not to leave; similar quantities of power from this source can be supplied to the upstate area from the wind fields in Lake Ontario; 2) inertial storage systems (often called superflywheels) which would permit a utility to store power generated from its most efficient plants operating at night when demand is low, and to draw from such stored power the following day when peak demand develops; 3) the solar cell, through purchases for use on governmental buildings. This will enable its manufacturers to put it into mass production so its price will diminish to a point to entice the marketplace, just as transistors fell from $5.00 to 5 cents in short order, once mass produced; 4) solar collectors, which would permit a sizeable decrease in fossil fuel consumption.

These technologies require neither splitting nor fusing atoms, nor even flying to the moon. They are not even very complicated, but added together, they spell energy in abundance and energy independence to an extraordinary degree at the consumer level.

This is the challenge for a generation: to build the infrastructure that will capture and deliver abundant, clean solar energy. "MAKE NO SMALL PLANS — THEY HAVE NO MAGIC TO STIR OUR SOULS!", said architect Burnham. This is a big enough challenge to excite the imagination of America — and to give us a sense that we're on target again. A solar energy infrastructure to leave as a legacy for posterity! A drive to achieve the solarization of America! That has the magic to stir us, and a grandeur worthy of our Bicentennial!

Members Teach Special Courses

Two ANSS members, Martha Sykes and Dr. Phyllis Busch, are teaching graduate courses in the Fall of 1977 at Audubon Centers in Connecticut. Using the diverse plant and animal communities at these sites, Martha Sykes' course deals with introductory ecology, with emphasis on the practical application of ecological principles to local environmental problems.

Phyllis Busch's course, Environmental Awareness, is designed for teachers, students, leaders, field guides and parents, helping them guide children ages 3-12 into an increasing awareness of "how the world works." Based on school curricula in the natural and social sciences, the methods stress inquiry and problem-solving.

ANSS Plays Role at NWF Summits

Once again in 1977, several ANSS members were on staff at the National Wildlife Federation Conservation Summits, held in the Rockies, in the Great Smokies, and in the Adirondacks. Stan and Dodie Mulaik once more captivated hundreds with their "nature creeps"; Jean Milmine did "Entomology" and "Don't Just Do Something, Sit There" (**that** certainly lends itself to imaginative possibilities!); Charles Wilson did "Wildlife Ecology (Adirondacks only), and John Gustafson did "Bird Ecology," also only in the Adirondacks. With 300-500 participants, these summits are a major force for environmental and nature education.

Kitching Edits Newsletter

ANSS member Jessie Kitching is editor and publisher of a monthly newsletter "Books About Birds," now in its fourth year. The newsletter contains brief and informative reviews on books relating to bird life and other natural history subjects, as well as an occasional news-type item, a classified ad section, and information about places to go for birding, auctions of bird material, and courses available in the New York City area. For information on subscriptions and rates, write Books about Birds, Box 106, Kew Gardens, Jamaica, N.Y. 11415.

TURTLES

and the Trinidad and Tobago Field Naturalist Club

by HELEN ROSS RUSSELL

(Photo courtesy IAN LAMBIE)

Taking measurements of a nesting Leatherback Turtle.

In its diverse membership, ecological slant, and its outreach to schools, the Trinidad and Tobago Field Naturalist Club has much in common with the American Nature Study Society. There are a number of differences, however. Some of these are a matter of history, others of geography. Some are things that we might seriously consider in planning our own future.

The club was founded by professionals for professionals. Members were all Europeans who were stationed in what was, at that time, a colony. One of the founders was R. J. L. Guppy, who discovered in Trinidadian waters, the little tropical fish that bears his name. Other founders held key positions in the department of agriculture and the botanic gardens. These men came together to read papers, share ideas and discuss new discoveries. Their Journal was designed to provide them with an opportunity to be published. The first Journal issued in 1893 was two inches thick.

Gradually Trinidadians with similar interests and training joined the group. By 1921 the Trinidad Field Naturalist Club was accepting non-professionals, lay persons with an interest but not necessarily specialized training in nature. The program then broadened to include field trips. The Journal continued to be technical. At all times the emphasis has been entirely centered on Trinidad and Tobago's rich flora and fauna, with a gradual shift toward a broader based interest in understanding and protecting the environment. From an original membership of a dozen or two the group increased to somewhere between a hundred and a hundred and fifty members over an eighty year period.

Since 1973 the membership has doubled. The president, Ian Lambrie, feels this is due to two things: first, a general increase in awareness among Trinidadians of the importance of environmental problems and the need to solve them; and second, the development of a strong program of research and protection of the leatherback turtle with a resulting educational program, not only through articles in their Journal and through the press, but also through a lecture program which is developing in response to queries by schools.

The Turtle program began in 1965 when the club learned that of the seven species of marine turtles in the world, five breed in Trinidad. One of these five, the Leatherback (**Dermochelys coriacea**) is the largest of the world's living species of turtle. It is critically endangered and the International Union for the Conservation of Nature and Natural Resources (IUCN) has stated that its "survival is unlikely without urgent protective measures." The IUCN report continued, "In Trinidad the situation is not very hopeful . . . The main hope is for parties of naturalists and sightseers to gather around each nesting turtle in such numbers that no poacher would dare attempt to kill the turtle."

The T & T Field Naturalist Club met this challenge by organizing members to patrol the beaches and provide the necessary protection for egg-laying females. At first the patrols went out only on moonlight nights, but they soon discovered what the poachers already knew, that turtles come to land to lay eggs on any night.

The first years were years of observation. Night after night groups of members watched females weighing 800 to 1,200 pounds drag their bodies, encased in leathery shells about two meters long and one meter wide, up the beach; then dig one-meter deep chambers in the sand using their hind flippers; and finally proceed to deposit sixty to one hundred eggs.

The filling of the pit was accompanied by great activity. Alternating flippers were used to push the sand over the eggs with regular pauses while the covering was tamped into place with the body. When the hole was filled the front flippers were employed with a circular motion to toss sand over an area seven to eight meters in diameter. Once this act of concealment was complete the female rested while making gasping noises for about an hour and a half. Each pregnant turtle repeats this operation three or more times during the six month egg-laying season. If she survives the operation without being caught she will return to repeat the process in three or four years.

This latter discovery came out of Part II of the turtle program, which was initiated in 1970 after the club invited Peter Prichard to speak. Peter Prichard and Archie Carr of the University of Florida at Gainesville are conducting a program of marine turtle research throughout Central America and the Caribbean.

Under this program the turtles have an inscribed tag attached to the trailing edge of a front flipper ("T45," T for Trinidad and 45 the number of the individual). Reports go back to the University at Gainesville and are then sent to the T & T Field Naturalist Club as well as to the Trinidad branch of the University of the West Indies, which became involved when the tagging

(Photo courtesy IAN LAMBIE)

Tagging a female Leatherback.

(Photo courtesy IAN LAMBIE)

Leatherback hatchlings on the beach shortly after emerging from the sand nest.

program was initiated.

So far turtles tagged in Trinidad have never been recovered in Venezuela or any of the other Caribbean Islands. Conversely turtles tagged at other stations have never shown up at Trinidad. Trinidad turtles have returned to Trinidad in different years as well as several times in the same season. One turtle may appear on different beaches and on opposite sides of the island.

In 1975, partly as a result of the interest stimulated by the club, a law was passed making it illegal to dig eggs, to take turtles on land at any time or to take turtles at sea between April and September.

Without controls and the observation of club members, thirty percent of all turtles that came to Matura (a beach with some protection) and all of the ones that came up on the beaches of Tobago and the north coast of Trinidad, were being slaughtered. The killing generally occurred on the first nesting which meant that even the reproductive potential was wiped out. Crude slaughtering techniques and the haste to escape detection meant that an average of only 50 pounds out of a potential 400 pounds of meat per turtle was carried away.

Many of the lands of the Caribbean have developed positive long-term turtle programs [Cayman Islands, Columbia, Costa Rica, Cuba, Guyana, Mexico, Nicaragua, Surinam, U.S. Virgin Islands] in order to exploit this excellent source of protein without destroying the breeding stock. The vigilance of the T & T Field Naturalist Club is a step toward accomplishing what the IUCN felt was almost impossible 15 years ago. Educating people to understand the need is another step, and the gradually developing speakers program in the schools should help with this.

Most of the 300 men and women members of the T.T.F.N. Club have been out on at least one turtle vigil, but the burden of the six month long night-after-night watch is carried by a couple of dozen dedicated members. As I listened to Ian Lambie tell of the tedium of rainy night watches, of the excitement of observing the record-breaking fourteen nesting turtles in one night, of the satisfaction of accomplishment, I found myself remembering Dallas Lore Sharp's classic tale, **Turtle Eggs for Agassiz.**

Trinidad and Tobago are a small country with an area of 1,980 square miles (1864 and 116 respectively). Its population is 932,000, roughly 40 thousand less than the population of Rhode Island. A three hundred member organization represents a much higher percentage of the population than A.N.S.S. or any other American conservation group has ever had.

The land is largely agricultural, with just about every tropical crop being raised in one ecological niche or another. It's a beautiful country, with beautiful people. It's a productive country but it has many ecological problems. Turtles are just one of the animals and plants that need to be managed. But by focusing on one critical species the Field Naturalist Club has acceepted a challenge that it can handle. As its members achieve visible success through the physical protection of the turtles, through legislation and through invitations to participate in school programs, the organization has grown. (A night around a beach campfire may do more to weld a group together than any number of formal sessions.) It would be good if a larger number of members were regularly involved. Do they — and we — fail in this because leaders turn their energy to accomplishing their goals rather than to enlisting and organizing others? Do we need more small local meetings as they have developd in order to increase the feeling of belonging among our membership? Is our new direction, like theirs, one that will lead to more involvement? Certainly we have the know-how that is needed in today's world. What is the best way to exploit this potential?

(Photo courtesy IAN LAMBIE)

A newly-hatched Leatherback Turtle intercepted on its way to the sea.

The Stump Sitters

THE STUMP SITTERS WHITETAIL DEER STUDY GROUP is now inviting deer hunters who hunt with bow, gun or cameras to join the study group. Deer hunters from all over the nation will have the opportunity to share their ideas and experiences through monthly data reports and a specialized magazine. The study group is designed to be a tool to add more quality to deer hunting. In-depth subjects about deer and deer hunting that is normally not covered in regular hunting reading material will be the subject matter pertaining to current conditions afield.

During the past ten years The Stump Sitters have disproved many old myths and handed-down beliefs about deer hunting through actual field experiments with deer. Study group members will have the opportunity to participate in field research assignments if they wish. Write for information: THE STUMP SITTERS, P.O. 1302, Appleton, WIS 54911.

SOME TIPS *from the FOX CHAPEL AREA SCHOOL, Pittsburgh, Pa.*

provided by BEULAH FREY

I

SET UP AN ENVIRONMENTAL VAN

The Environmental Van, so generously donated to the Fox Chapel Area School District by the Rotary Club, has been in almost constant use since January, 1975. It has been serving people of all ages — from pre-schoolers to Golden Agers.

Some local schools have visited or borrowed the van. Garden clubs, O'Hara Township, Churches, and local county parks have also used the van in exchange for some services for the Environmenal Education unit in the school. In all, during the 1974-75 school year, there were approximately 15,000 visitors in the van. Some of the visitors were counted several times because they visited the van for two to six different exhibits.

Several service and educational groups have borrowed parts or all of a particular exhibit. Other groups have made slides of some of the material. But one of the highest compliments is when students bring their parents to visit the van or when parents call to ask if they could possibly visit a particular exhibit.

The van was also used for six weeks as the Nature Center at Squaw Valley Park for the School-Park program during the summer months.

A system has been developed to arrange the displays in the van in such a way that they can be changed in a matter of minutes. Thus, as many as three different subjects are available for viewing at different times of the day at the same site.

The van exhibits consist of any or all of the following: slide shows, posters, teaching centers, electric games, preserved specimens, live specimens, book displays, lending library, hand outs, and activity suggestions. A list of the exhibits developed to date is given below.

Volunteers (from elementary school students through adults) help make the exhibits, monitor the van, and/or give slide talks.

We are pleased with the progress so far, but we want to evaluate and improve the exhibits. Some areas of improvement that are in the planning stages are to make the exhibits more professional, and to develop teacher packets to go with each exhibit.

VAN EXHIBITS DEVELOPED

General use to be made of the van (Adults)
Vegetable Gardening (N-6)
Vegetable Gardening (7-Adult)
Maple Moon — sugaring, signs of spring (Leader Preparation)
Maple Moon — before fieldtrip (Grade 2)
Maple Moon — after fieldtrip (Grade 2)
Winter Birds — before feeder or fieldtrip (adaptable N-Adult)
Winter Birds — after unit (adaptable N-Adult)
Spring Birds — before fieldtrip to North Park (Grade 5)
Spring Birds — after fieldtrip to North Park (Grade 5)
Woodpeckers (adaptable N-Adult)
Water Birds (adaptable N-Adult)
How to Identify Birds (adaptable N-Adult)
Pond — Salamanders — Salamander Park (Leader Preparation)
Pond — Salamanders — before fieldtrip to Salamander Park (Grade 1)
Pond — Salamanders — after fieldtrip to Salamander Park (Grade 1)
Four Habitats — forest, grass, pond, stream (Leader Preparation)
Four Habitats — before fieldtrip (Grade 3)
Four Habitats — after fieldtrip (Grade 3)
Spring Wildflowers (Leader Preparation)
Spring Wildflowers — before fieldtrip (Grade 4)
Spring Wildflowers — after fieldtrip (Grade 4)
Hunting (Grade 7-Adult)
Environmental Resources (Elementary Teachers)
Environmental Resources (Jr. High Teachers)
Environmental Resources (Sr. High Teachers)
Fishing (N-6)
Fishing (Grade 7-Adult)
School-Park (N-Grade 3)
School-Park (Grade 4-6)
School-Park (Grade 7-9)
School-Park (Grade 10-12)
Insects (adaptable N-Adult)
Trees (adaptable N-Adult)
Rachel Carson (Jr. High-Adult)
Reptiles (adaptable N-Adult)
Solid Waste (Sr. High-Adult)
Water Quality (N-Adult)
Easter Plants and Care (N-Adult)
Christmas Plants and Care (N-Adult)
Predation (N-Adult)
Nature of O'Hara Township (N-Adult)
Wetlands (Grade 7-Adult)
Archeology Dig (Age 12-Adult)

II

GROW A GARBAGE GARDEN

Plants Want To Grow:

Carrot tops are dying to burst out with feathery green foliage. Potatoes sprout in dark corners when no one is looking. You probably have stuff for a rather handsome garden sitting in your garbage this very moment. Here are some tricks to turn your garbage into a garden.

Seeds in Soil:

You might have heard someone say, "Oh, I'm growing the most wonderful beans." That's not exactly true. Plants grow everywhere—in deserts, in freezing climates, on rocks, in cracks in the streets — without help from anyone. When you plant something, all you have to do is give it the right environment and wait for it to come alive. Plants need the proper amount of light, water, and air. Also they need soil. Not just any old dirt from any old where. Resign yourself to heading for the local plant shop (dime store) and buy a bagful of earth. When you get the soil home. you'll notice that it is light and dark with bits of this and that in it. It's made for plants to be happy in. It has nutrients. It's made to retain water and allows air around your plant roots.

Tips

1. Save your seeds from apples, oranges, grapefruits, lemons, or anything with seeds. Soak them in water overnight or just plant them as soon as you take them out of the fruit.
2. Plant them in a shallow pan (an egg carton will do fine). Line the bottom with small pebbles. Put in 1½" of soil. Plant the seeds ¼" deep and 1" apart.
3. Moisten the soil and cover with a plastic bag to keep in the water. Put it in a sunny warm place.
4. In a week or so you should see some seedlings. When they are an inch or so, move them to larger pots.

Tops

The tops of carrots, parsnips, turnips, in fact any root vegetable will grow handsome green leaves. Cut away all but an inch or two of the root. Save the stem part.

Put them in a dish. Keep it filled with about ¼" of water. Watch out for sprouts.

Exotic Hanging Garden

Use any sort of root vegetable like carrots, turnips, or rutabagas. Cut away about 2/3 of the tip. Scoop out the center section. Poke three toothpicks into your vegetable. Hang it upside-down with a string from a curtain rod in a sunny window. Keep the hole filled with water. Turn it once in a while so the foliage grows evenly.

Winter Garden

Some seeds are difficult to sprout. Sometimes all they need is an artificial winter in your refrigerator. Put peach, apple, or plum seeds in a jar. Put it in your refrigerator for about six weeks. Turn the jar occasionally. When they sprout, plant them in soil. Put them in a sunny window.

Avocados

Wash the seed from a supermarket avocado. Stick toothpicks in the seed. Balance it pointed end up in a glass of water. In 3-4 weeks a root should appear. When it is 2-3 inches long remove the toothpicks. Plant the seed halfway in soil. Soon a green stem and leaves will appear. After several weeks cut off the top inch of the stem, to get the plant to branch.

III

GROW YOUR OWN POINSETTIA
(Euphorbia pulcherrima)

Introduction

In Mexican homes, the poinsettia is known as "Flor de la Noche-buena," the Christmas Eve flower. In the United States, it is nearly as much a part of Christmas tradition as the Christmas tree. Many legends have been built around this plant with the red bracts and yellow flowers. The poinsettia was introduced into the United States about 1830 by Joel Roberts Poinsett, the first United States Minister to Mexico, and an able botanist.

Flowering

If bought at Christmas time, the new hybrids will last at least 4 weeks, some will bloom to Easter, a few as long as Memorial Day. This requires pampering of the plants, giving them exactly what they want.

To get a poinsettia to bloom the **next** Christmas, continue caring for it in the usual manner until the first of March, then gradually reduce watering until the soil is very dry, but not so dry that the stems shrivel. Store the plant in a cool, dry place at about 60° and let it rest for at least six weeks. Then cut it back to three or five inches, repot, water it and put it back in a sunny window. Then follow summer care procedure, but between October 1 and Thanksgiving the poinsettia must not receive any light at all for more than 12 hours consecutively each night. Placing a light-tight box of adequate proportion over the plant in the evening and removing it in the morning is an easy way. Moving it to a dark closet each evening and bringing it out each morning for 60 days is just as good. The plants do need the brightest light possible during the daylight period. If this is not done, it will probably bloom sometime in February providing it is not in a room where the electric light is on each evening.

Containers

Clay pots of 4" (plus 2" for each additional stem). Plastic pots may be used but are not porous, therefore water less often.

Soil Mixture

4 parts Garden loam
2 parts Sand
1½ parts sheep or cow manure
½ cup bonemeal to each peck of mixture

Watering

Try to keep the soil evenly moist, never soggy and never bone dry. If the top of the soil is dry to the touch, water thoroughly then discard any water that might accumulate in the saucer. Soil that is either too dry or too wet will cause the leaves to curl and drop.

Feeding

Water with any good plant fertilizer, prepared and administered as recommended. When a plant has been given a rest, wait until new growth starts, then feed it every two weeks.

Temperature

Poinsettias can stand up to 75° in the daytime and 60° at night. Above or below that 15° change could have adverse effects on the plant. Drafts, either warm or cold, can cause the poinsettia leaves to curl and drop. This will also happen to the plant if the temperature is too high or too low or if the temperature changes rapidly.

Light

To keep the poinsettia in flower, give it as much light as possible through the winter. Set it in bright sun all day if you can, and near a lamp at night. A window facing south or southeast is best. Not enough light will cause the leaves to curl and drop.

Clean Leaves

Keep the leaves clean. Use **warm** soapy water and a soft cloth to remove dust and grease from both sides of the leaves. Rinse off the soapy water with clear, **warm** water. This will also eliminate insects. DO NOT USE ANY KIND OF OIL ON THE LEAVES SINCE IT CLOGS THE STOMATES (breathing pores).

Propagate

Take cuttings of at least 4" to 6" in length between June and August and place in warm water for about 15 minutes to stop the sap from flowing too freely. Dip the lower end into powdered charcoal, then place the lower third into sharp sand for rooting. A temperature between 65° and 70° is desired with high humidity and a sunny location. When roots have formed, transplant to small pots, water, and keep shaded for a week or two. As top growth increases, repot into larger containers. If small plants are desired, start the cuttings even later than August.

Special Problems

Leaves will drop due to poor light, wrong temperature, improper watering, or from being placed in drafts. Failure to flower may be due to lack of long-night treatment.

Summer Care

In June, sink the pot in the garden up to its rim, in full sun or light shade. Continue watering and feeding through the summer. Between August 15 and September 1, cut back the stems to three or four leaves per shoot. Pruning makes a compact plant. Unpruned plants grow too tall for table plants.

IV

FACTS ABOUT YOUR PHILODENDRON
(P. cordatum)

Introduction

The common species of Philodendron (heart shaped leaves) originated in Southern Brazil in South America.

Containers

The best pots for Philodendron are clay pots. If possible try to repot every spring.

Soil

Requires an acid soil. Most porous potting soil can be used.

Watering

Keep the soil moist, but do not water just because the top of the soil looks dry. Check to see if the soil beneath it is wet.

Feeding

Fertilize well with a liquid manure or good complete fertilizer about once a month.

Temperature

Do not keep in too cool a place; needs a temperature of about 60 to 70 degrees F.

Light

Does not need direct sunlight but requires moderate daylight.

Cleaning Leaves

Keep those leaves clean. Use lukewarm soapy water and a soft cloth to remove the dust and grease from both sides of the leaves. Rinse off the soapy water with clear WARM water. This will also eliminate insects. DO NOT USE ANY KIND OF OIL ON THE LEAVES SINCE IT CLOGS THE STOMATES.

Propagate

Cut off the tip ends of any side shoot. The piece cut off should have at least four leaves. Remove the two bottom leaves so that the nodes from which the leaves grew can go under the water. New roots will appear from these nodes. Sometimes cuttings can be selected with aerial roots already formed at these nodes.

Special Problems

A stringy branch — as soon as the distance between leaves starts to get longer than normal, pinch off the ends of the vine. The plant will branch out and the severed pieces, if long enough, may be rooted in water for new plants.

Leaves are too small — This is probably because it is growing in too dark or too cool a place.

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School Site Action in Michigan . . .

LAND — *The Unused Textbook*

by EUNICE HENDRIX

Over the past twenty years, concern over the impact of people upon the land has increased dramatically. The Michigan Department of Natural Resources and Governor Milliken had tagged land use as Michigan's most critical problem in natural resources.

The people of Michigan have responded to Michigan's land use problems by supporting their legislators and the bills they have written relating to land use.

Here are some of the land use laws passed by the people of the State of Michigan:

Act no. 94	1925	Commercial Forest Act.
Act no. 297	1937	Soil Conservation Districts created.
Act no. 288	1967	Flood Plain Act.
Act no. 347	1972	Soil Erosion and Sedimentation Act — Ann Arbor's was the first.
Act no. 231	1970	Natural Rivers Act.
Act no. 245	1970	Shorelands Protection and Management Act.
Act no. 116	1974	Farmlands Preservation and Open Space Act.

These laws relating to land dramatically demonstrate that the people of Michigan can and do feel a humility and a sense of stewardship toward the land and its natural processes. These laws prove that the people are willing to accept for the common good, the limitations of our natural heritage of soil, water, and land forms shaped over millions of years.

Although these laws have been passed, our students in public schools are **not** receiving the education necssary for them to understand these laws. In other words, an **educational gap exists** between the laws of the state relating to land, and public education.

Most State Boards of Education have **no** educational specifications for land. I feel, however, that school-owned land — **school sites** — should be respected as a **teaching tool** just as are books, records, machine shops, musical instruments, computers, and typewriters. **Taxpayers pay** for the land and they have a **right** to demand its educational use for other things in addition to beautification and baseball diamonds.

Very few Michigan public schools have adopted a policy statement* on the educational use of their land. Seldom is recognition given to naturalists or outdoor educators who use the land such as is given to music, math and French teachers. The outdoor school site is **not recognized as a classroom** since it does not have four walls.

The lessons of land and soil, water, air and living things **are fundamental** to understanding Earth, our Home in space. To date, we have primarily taught students how to **make a livelihood.** We have not taught them how to assure there will be conditions **necessary for life on Earth.**

We need a **balance** of the two.

The lessons of land and all the things that are in, on, above or growing on it are **basic.** Nature's Laws of the Land **shall always be enforced,** in spite of us. It behooves us to feel some humility toward them. Here are some of them:

1. Diversity of species.
2. Recycling is nature's law, not man's.
3. Natural eutrophication is vastly slower than what man causes.
4. Succession. Change is a law of nature.

In view of our states' laws governing land use, isn't it time public education **caught up**?

To assist the Board of Education in Ann Arbor, Mich. to formulate a School Site Policy, I prepared the following policy statement:

WHEREAS the Ann Arbor Board of Education owns approximately 900 acres of land not dedicated to building purposes, and

WHEREAS this land was purchased by taxpayer money, and

WHEREAS taxpayers have a right to expect an educational use for their educational dollar, and

WHEREAS land, exclusive of buildings or paved areas, is the only place where such natural processes as soil formation, plant succession, watershed processes, climatic adaptation of plants and animals, utilization of solar energy by green plants to produce food and oxygen, recycling of minerals, nitrates and phosphates through plant growth, and systems of natural checks and balances can occur, and

WHEREAS our students have a right to expect to be taught how to live *in their future as well as how to make a livelihood, and*

WHEREAS every school site therefore has potential as possible nature center, however small, and the school site is a demonstrative natural environment in a school community setting,

THEREFORE, let it be resolved by the Ann Arbor Board of Education that:

The land owned by the Ann Arbor School District, exclusive of buildings, shall be respected and regarded as being of equal importance to the educational process as the school buildings and all they contain.

This public land or commons shall be the place for the teaching of environmental awareness, ecological principles and natural history. The school site shall then be regarded as a place to teach respect for planet Earth, our home in space. To carry out this policy, educational specifications shall be developed for every school site.

It shall further be made the policy of the Ann Arbor Board of Education that the educational use of school sites shall become an integral part of the curriculum. In order to implement this, the grade level themes for field trips as developed in 1961, and carried out by the Outdoor Education Program for 15 years, shall be made a formal part of the curriculum.

It shall also be the policy of the Ann Arbor Board that certified teachers in the Outdoor Education Program shall be regarded as naturalists, whose special talents and interests have been enhanced by their professional training and field experience.

After considering this and other suggested statements, the Ann Arbor Board of Education unanimously adopted the following School Site Policy:

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* The Ann Arbor School Board passed a policy statement on the educational use of school-owned land November 12, 1975. See below.

SCHOOL SITE POLICY

The Board of Education recognizes that the educational environment is not limited to the confines of a school building. The Board further recognizes that the teaching of natural processes, ecological concepts, and environmental awareness is a necessary part of the educational program. For this teaching to take place, it is often necessary to have and use areas outside of the classroom where the natural processes can take place. The **school** site with its existing and/or potential flora, fauna, and geological or historic features is a distinctive, functional and essential part of the total educational setting. As such, it deserves much care and concern.

Conscious effort shall be made at all existing schools and within the central administration to increase the educational potential of each school site. Larger outdoor laboratories showing representative types of natural or near-natural land should be available to the entire school system.

The following policy statements on the use of school sites takes into consideration the efforts of many people and organizations. While all ecological and environmental interest could not be accommodated, major components for good site planning relative to budgetary concerns are listed.

— that all new planning for school sites assure optimum use of natural features of the terrain, vegetation, and sun and wind exposure or other unique environmental qualities.

— that all new planning for school sites and the restoration of occupied sites give full consideration to the recreational, educational, social and cultural needs of the community.

— that citizens from the local neighborhood be involved in the initial phases of planning and the continuous improvement of old school sites and development of new sites.

— that each school site be used as an outdoor classroom to teach environmental educational and the aesthetic appreciation of the outdoor site.

— that all sites selected and purchased for school building construction be developed under the guidance of professional landscape architects in consultation with the Ann Arbor Board of Education, administrators, outdoor educational consultants, teachers, students, citizens, and that it voluntarily comply with the city's land use ordinances.

— that students at all levels be made aware of the necessity to maintain good housekeeping in schools and be assigned a responsibility of monitoring an on-going program.

— that environmental education and nature study be integrated into the elementary and secondary science and social studies programs.

— that each new building or alternatives to an existing structure be designed and/or developed in concert with the surrounding architecture and outdoor amenities such as park land, woodlands, and geological constructs.

— that each new building site insofar as possible, meet state and school site standards.

The Konza Tallgrass Prairie

The Nature Conservancy's newly acquired 7,200-acre Konza Prairie is named for the tribe of American Indians who lived in northwest Missouri and northeast Kansas at about the time white men first entered the region. Their villages were scattered along the Missouri River and along the Kansas River, as far west as the junction of the Big Blue River (or Blue Earth River) at Manhattan. The Konza Indians raised corn, squash, and other crops in garden plots in the valleys by their villages. They hunted the land to the south and west of their villages, though not to the north because it was Pawnee territory. A regular hunting ground of the Konza Indians, the Konza Prairie is less than ten miles from one of their early villages.

Many meanings have been suggested for the name Konza, such as "wind people," "swift wind people," "swift," "south wind people," "small wind," "windy," and "makes wind near the ground." Of these, the most widely accepted translation is "south wind people."

Later, Konza Prairie became part of the large ranch created in the 1880's by C. P. Dewey, one of the early settlers of Riley County, Kansas. A three-story farmhouse built of native stone, a 38-stall stone barn, and a number of smaller buildings still stand on the ranch lands.

Konza Prairie lies in the heart of the most extensive remaining tallgrass prairie region, the Flint Hills. On the upland prairie of the Konza acreage over 25 species of grasses and grasslike plants are present. Big bluestem, little bluestem, Indiangrass, and switchgrass dominate in some sites, while grama grasses, dropseeds, buffalograss, and sedges dominate on others. Interspersed with the grasses are numerous broadleaf plants, such as leadplant, scurfpea, goldenrods, asters, and colorful dotted gayfeathers and prairie clovers. The diversity of plant life on the Konza Prairie totals over 300 species. Throughout the growing season, the upland prairie presents an ever-changing display of color and life formed by the rich complex of thriving plant and animal life.

Our Remaining Grasslands

Prairie was once the most extensive natural environment on the North American continent. About 25 million years ago, when the Rocky Mountain uplift intercepted the prevailing westerly winds, a rain shadow was cast over the plains to the east. A grassland environment developed, based on a spectacular diversity of plants and animals adapted to the harsh conditions of the plains. Eastward, where rainfall exceeds 20 inches annually, the tallgrass prairie developed. Lush grasses standing 6 to 10 feet tall, colorful wildflowers, abundant wildlife, sweeping vistas, wooded streams, and a landscape shaped by hot summers and severe winters were the components of the native tallgrass prairie.

The tallgrass prairie soil was fertile. As farmers and homesteaders began the task of turning the tough sod, the vast prairies were gradually converted to one of the most productive agricultural region in the world.

Studies have shown that the native prairies supported an interesting association of adapted animal species. Bison, antelope, elk, and wolf roamed the grasslands; prairie chickens courted each other on their booming grounds. Today coyotes are at the top of the food chain. But each square mile of a Kansas prairie may contain 650 million insects, 600 least shrews, 330 short-tailed shrews, 1,900 ground squirrels, 250 voles, 1,700 deer mice, 700 plains harvest mice, 185 jackrabbits, and assorted snakes, birds, badgers, and pocket gophers. It has been well said that the native tallgrass prairie is "more than grass."

Today only scattered relicts of the tallgrass prairies remain, generally in areas too steep or rocky to plow, or where soils were unsuitable for cultivation. Once our grasslands have been severely overgrazed, damaged by herbicides, fertilized, plowed or inter-

(Photo by L. C. HULBERT)

Aerial view of KONZA PRAIRIE PRESERVE, a recent acquisition of The Nature Conservancy, near Manhattan, Kansas.

seeded with exotic grasses, they have been destroyed and cannot be restored for perhaps centuries, if ever.

The Konza Prairie Research Natural Area

The Konza Prairie presents a superb opportunity to protect an outstanding example of native grassland for research use. The area contains unplowed native grassland in good condition; has deep permeable soils; is comprised of wooded segments, floodplain, and upland; and is located only six miles from Kansas State University. In addition, the tract contains a complete set of farm buildings that would be suitable for housing research facilities. All these factors make the prairie an exceptional research opportunity.

The Konza Prairie Research Natural Area will be established through a cooperative effort between The Nature Conservancy and Kansas State University. Much can be learned from comparative studies of natural and manmanipulated ecosystems, and the Konza Prairie is ideal for such research. By studying a native tallgrass prairie ecosystem, we will gain knowledge and scientific understanding of grassland management.

The Nature Conservancy's prairie preserves now encompass approximately 40,000 acres in the states of Indiana, Illinois, Wisconsin, Iowa, Missouri, Minnesota, South Dakota, Nebraska, Texas, Kansas, and Ohio. Major preserves are: the Samuel H. Ordway, Jr., Memorial Prairie, 7,600 acres in South Dakota; Arapaho Prairie, over 1,200 acres in Nebraska; Project '76 Prairie System, over 3,500 acres in Missouri; and Bluestem Prairie, 1200 acres in Minnesota.

Bibliography Available

The Environmental Institute of Oklahoma State University announces the publication of "A Bibliography of the World's Rare, Endangered, and Recently Extinct Wildlife and Plants." Compiled by Don Wood, it contains over 1100 references. Copies may be obtained for $5.00 by writing to the Institute, OSU, Stillwater, Oklahoma 74074.

Humanities and Environment Course

Thanks to a generous grant from the National Endowment for the Humanities, New College of the University of South Florida has developed a curriculum in "Humanities and the Environment." The curriculum is a two-term sequence of courses. The first term covers ethical and aesthetic issues, both traditional and contemporary, related to environmental concerns. The range of disciplines involved is wide, from biology to philosophy to literature to religion to engineering. The second term is more specific in its orientation, focusing on "property and planning," especially the conflicts between private ownership and planning, as well as the planning process more generally.

For further information, write James G. Moseley, Division of Humanities, University of South Florida, 5700 N. Tamiami Trail, Sarasota, Fla. 33580.

Good Reading and Good Viewing

AN INTRODUCTION TO THE ENVIRONMENT: OUTSTANDING MEDIA ON TODAY'S NATURAL COMMUNITY

JILL P. MAY

Young people today relate to complex problems within our environment, and willingly probe topics if they are encouraged. They have little reluctance to approach scientific data, and display a positive attitude toward science topics. This is largely caused by the numerous daily encounters teenagers have with inventions and with environmental topics. Adults often stand in awe of space flights, modern inventions, or ecological problems, but young adults consider them a natural part of their routine, and want answers for their specific scientific questions. They are becoming concerned about their environmental future, and are capable of comprehending the need for man to respect and to study his natural environment.

This growing interest in man's ecological role is reflected in the wealth of materials being produced on a wide variety of environmental topics. Many of the useful audiovisual science materials evoke an emotional response from the viewer. Recent quality science materials often include the message that nature is wonderful and that much can be learned by watching one's surroundings, but that it is best to protect nature and to accurately observe it without destroying an eco-system.

Young people need to study their role in nature, and should be told about our country's environmental problems. If the materials used are well-produced and help develop their emotional and intellectual understanding, teenagers will begin to develop an active interest and role in ecological planning.

Young people will respond to a well-produced audiovisual presentation of ecology. The emotional appeal of introductory material is important because it often will stimulate conversation and will ultimately encourage further study. There are many unusual and interesting audiovisual materials which can make nature more meaningful. some are artistic in approach and are basically designed to stimulate an appreciation of our environs. Others are useful because they are visually superb and are informative. While these media may be emotionally appealing, the intellectual message is more concrete.

There are also many creative outlets in science that relate to art, music, drama and poetry. Science and nature create a sense of wonder and adventure. Often science, art and history are combined in one presentation. In fact, much of science relates directly to the social or artistic customs of past generations. If young people are introduced to a topic through visual media and are then presented with related reading lists, many will want to read about the social and historical aspects.

Science is a complex topic which deals not only in the past, but which leads the way to the future. Its impact upon man and his surroundings is mammoth, and it continues to grow. Many of today's young people will someday work in science. It is important to visually introduce teenagers to the beauties and the problems of nature, and to show them that much of society's economic and social history relates to man's environment. They need to develop an understanding that there is a need for balance within nature. Good visual materials can promote an understanding of nature's pattern, man's use of his natural environment, and present day conditions. If science is shown as an active, ever-changing field, and if young people are encouraged to become involved in their environment, they will become more sensitive and alert to the earth's future.

Some materials are well worth their cost; they are beautifully executed statements. The most valuable of these will not date quickly, but will continue to inspire an interest in the scientific exploration of man's immediate world. They are invaluable library acquisitions, worth their cost, and wide-ranging in their appeal. The following ten materials fulfill their own production and theme objectives. They are visually stimulating, provocative presentations that belong in all libraries serving young adults.

Bate's Car: Sweet as a Nut. Color 16mm film. Teacher's Guide. 16 minutes. Grades 9-Adult.

Produced by the National Film Board of Canada, this film is excellent since it shows that inventors can find less polluting ways to run the auto. Harold Bates is an eccentric, charming, white-haired Englishman who drives like crazy down narrow countryside roads in his methane converted car. Although his British accent is sometimes hard to understand, his message never is. Bates believes that since inventors can devise less ecologically damaging ways to maintain modern society, more should devote their time to progressive change. He and his wife are shown working at their small cottage; their entire attitude is relaxed and positive. The film is an inspiration to the small inventor, and a good one to use to begin a discussion on modern society's needs and expectations vs. its capabilities.

(**Distributor:** Arthur Mokin Productions, 17 West 60th Street, New York, New York 10023.)

Bighorn! Color 16mm film. 26 minutes. Grades 5-Adult. 1974.

Beautiful, realistic and breathtaking photography is used to observe the existence of a band of bighorn sheep from spring to spring. The narration weaves the sheep's pattern into the larger eco-system of the Rocky Mountains and shows how animals and plants interrelate to one another for survival. The clear, distinct audio production vividly captures the dramatic sounds of the male battles during the mating season. This is an excellent introduction to the rugged, untouched beauty of secluded areas. In addition, the film deals with man's effect upon this natural system. It realistically presents the problems man has caused for animal communities when environmental conditions are changed.

(**Distributor:** Stouffer Productions, Box 15057, Aspen, Colorado 81611.)

Castles Made of Sand. Color 16mm film. 8 minutes. All ages. 1971.

This film is an artistic invitation to consider the timelessness of natural forces, and their ability to destroy man's creations. The film begins and ends with the waves washing onto the beach. In between the audience sees beautiful sand castles created by competitors of all ages in a day's sand sculpture contest. After the people leave, the tide returns to dissolve all the lovely palaces. Here today, gone tomorrow! Although this production is not simply scientific, it does relate well to man's use of the natural elements around him to create meaningful and/or artistic objects.

(**Distributor:** Pyramid Films, Box 1048, Santa Monica, California 90406.)

Don't. Color 16mm film. 19 minutes. Grades 7-College. 1974.

A non-narrated film, **Don't** explicitly shows the growth of a caterpillar into a butterfly, and the precarious survival of this delicate insect. The film has excellent close range photography of the natural surroundings and of the other insects within the immediate area. A praying mantis is dramatically depicted as the predator among these creatures. He is seen capturing a grasshopper and making a meal on one of its legs. It's much more frightening and real than any science-fiction battle. The intense visual impact of this film should inspire young people to look closely at their own natural community and its elements.

(**Distributor:** Phoenix Films, 470 Park Avenue, South, New York, New York 10016.)

Draggerman's Haul. Color 16mm. film. 18 minutes. Grades 7-Adult. 1975.

A pleasant folksong, interesting shots and conversations of real people are combined in this strong statement for ecology. Because the shots used were taken in Connecticut, the film directly relates to the Eastern fishing trade. But it is also valuable in its representation of the men's desire to keep fishing a small unpolluted industry, contrasted with the realities of the large industrial fishing being done by Russia and the U.S. The production aptly lends itself to a discussion of the need for global ecological planning.

(**Distributor:** Film Fair Communications, 10900 Ventura Blvd., Studio City, California 91604.)

For All That Lives: The Words of Albert Schweitzer. One color filmstrip with disc or cassette. Teacher's Guide. Grades 7-College. 1974.

Schweitzer's philosophy of life and his stress on a need to look at the world as a global community is precisely illustrated in this thorough, thought-provoking filmstrip. Recordings of Albert Schweitzer's organ recitals are used as the music, his words as found in the book **For All That Lives** (by Ann Atwood and Erica Anderson) are used as the basic commentary, and color photographs of Schweitzer in Africa (by Erica Anderson) are used to show his lifestyle. Although his message evolves from Christian doctrine, it is also the theme of a humanitarian. Young people interested in science as a career might argue against his belief that man owes a debt to animals because of scientific experimentation, but they will agree that all nature is dependent upon one another. This is an unusual philosophical sketch worth sharing with young people.

(**Distributor:** Lyceum Productions, Box 1226, Laguna Beach, California 92652.)

Land and Man. Four color filmstrips with disc or casette. Teacher's Guide. Grades 5-10. 1974.

The dominant theme in this series is that man is disruptive and visually destroys nature in the name of progress. The non-narrated filmstrips depict scenes of nature's serenity disrupted by telephone wires, pollution, etc. Each strip has a different musical audio presentation; all are appropriate. The set shows Texas farmland, the mountain countryside, the seashore, and the city. Young people could write their own scripts on the subject and use them with the strips.

(**Distributor:** BFA Educational Media, 2211 Michigan Avenue, P. O. Box 1795, Santa Monica, California 90406.)

Snow Monkeys of Japan. Color 16mm film. 7 minutes. Grades 6-Adult. 1975.

Excellent close-up photography is used to show these almost extinct, beautiful, frisky animals in their daily routine. Close up shots of the young monkeys squabbling, the older ones grooming one another, and the clan lazing in the afternoon makes the viewer feel he is on site, observing their behavior. The movie shows how animals change their lifestyle based on natural conditions; since 1963 the group has daily come to the hot springs at the foot of the mountain to scamper and bathe. This is an excellent observational episode that relates well to animal behavior and to ecology.

(**Distributor:** ACI Media, Inc., 35 West 45th Street, New York, New York 10036.)

So Little Time. Color 16mm film. 11 minutes. All ages. 1974.

Haunting lyrics introduce a film discussion of bird extinction. The narrator discusses how man is currently destroying keys to our understanding of nature by killing birds. He explains how important it is for scientists to study animal behavior since this helps man understand "instinct" behavior. Beautiful slow motion shots of the birds in flight are used. Produced by the Latham Foundation and the U.S. Department of Interior, **So Little Time** is an evocative appeal for the study of bird migration.

(**Distributor:** Aims Instructional Media Services, Box 1010, Hollywood, California 90028.)

Solo. Color 16mm film. 15 minutes. Grades 5-Adult.

Solo is the winner of twelve international awards, and is a tribute to man's desire to conquer nature. This non-narrated film shows one man climbing a mountain alone. Actually, the episode was created by the flawless editing of twenty-one climbs in the U.S. and Canada; but the action seems one long, vigorous climb followed by a quick, exuberant descent. The film's theme — man's desire to be a part of nature without ruining its beauty is a healthy, good activity — is especially important to young people.

(**Distributor:** Pyramid Films, Box 1048, Santa Monica, California 90406.)

Birds and Their Ways

by ALEXANDER DAVES DU BOIS
with CHARLOTTE A. DU BOIS
T. S. Denison and Co., Inc.
1976

Birds and Their Ways is a selection from the field observations made during a ninety-year-lifetime by Alexander Du Bois. When Mr. Du Bois died he had only completed Part II of the book which describes his observations, friendships, adventures and misadventures with twelve birds. (Eastern bluebirds, spotted sandpipers, downy woodpeckers, purple finches, loons, whip-poor-wills, horned larks, long-billed curlews, horned grebes, short-eared owls, chestnut-collared longspur, McCown longspurs.) Part I, which deals with general topics like family life, nest-building procedures, and care of the young, was edited and completed from her brother's Journals by American Nature Study Society member, Charlotte A. Du Bois. She had frequently accompanied her brother on his photographic expeditions and had at one time written a weekly nature column.

The resulting book serves many purposes. I read it on the subway traveling between Jersey City and Manhattan and found myself transported to field and forest while I vicariously shared the adventures of a professional ornithologist and naturalist who never lost his enjoyment of wild things; a man who gloried in the twin joys of a sudden and unexpected experience and of the consummation of a carefully planned, long-awaited meeting.

As I read I thought of people with whom I would like to share the book. My next door neighbor who has a backyard check list of more than seventy birds accumulated through almost twenty years of feeding and observing birds in the city, and who phones us to say, "There's a Maryland yellow-throat in your rose bush." Or tells us over the back fence, "The olive-backed thrush arrived on schedule today for the fourth consecutive year."

My brother and sister who grew up with me, and knew the satisfaction of observing and protecting the birds who shared our farm in the days when horses pulled the harvest equipment

and a flushing bar alerted the birds to our approach, and us to the need to detour to save a nest. A young teacher friend who is dedicated to opening eyes of young people to the pleasures of learning from nature and living in harmony with the natural world. Several children at Manhattan Country School who would enjoy reading the pictures even as I "read" the National Geographic at an early age. A photographer friend who not only would appreciate the 78 pages of excellent black and white photographs but would empathize with the author in his struggles to record the personal lives of wary birds on film.

In short, it's a beautiful book that would appeal to any reader who enjoys learning about bird behavior, painted from first hand observations made by a man who, listening to the whip-poor-will, is carried back to days when the land was occupied by another more primitive people and, as he ponders on the unknown and unknowable, appreciates the fact that "though we cannot comprehend, we are at least privileged to listen to the music of the spheres. Our own small planet sings its own refrain of evolving life, and makes its plea to keep our Earth-world whole."

HELEN ROSS RUSSELL

Sollberger Author's Book

Dwight E. Sollberger, long-time ANSS member and professor at Indiana University of Pa. at Indiana, Pa., is the author of a children's book about two flying squirrels, entitled FLUTTERTAIL AND FEATHERTAIL. It is available from Carlton Press, New York, at $4.50.

JOHN MELVIN DIES

Dr. John H. Melvin, 70, husband of former ANSS president Ruth Melvin, died unexpectedly on June 19, 1977. For many years the Chief of the Geological Survey in Ohio, he was in recent years Executive Director of the Ohio Academy of Sciences. He worked closely with AAAS in developing the role of state academies of science. He was well known to many ANSS members, who always enjoyed his wit and winsome ways, and the wisdom of his experience was welcome. We will miss him!

We extend sincere sympathy to his good wife Ruth and the family. John Melvin enhanced the cause of conservation and nature understanding, and leaves a rich legacy — a challenge to us all to carry on the good work he so skillfully accomplished.

Volunteer Summer Conservation Jobs In National Parks and Forests

The Student Conservation Association announces the 1978 Student Conservation Programs. Opportunities are offered for 16 to 18-year-old high school students and college-aged students, 18 years of age and older, to volunteer their services to assist National parks, national forests, the Merck Forest in Vermont and other public conservation and recreation areas to maintain their natural resources and assist the public in its enjoyment of these public lands. Programs are offered for the Spring, Summer and Fall of 1978. Program announcements and applications will be available after November 15 by writing to The Student Conservation Association, P. O. Box 550, Charlestown, New Hampshire 03603. Detailed lists of all positions offered will be sent with the application. Deadline of receipt of the applications is March 1, 1978 for summer programs.

The Student Conservation Program offers programs in more than 50 national parks, national forests, the Merck Forest in Vermont, with the Nature Conservancy and other federal, state and local organizations

Selection of participants is nationwide. High school volunteers must be 16 years or older to be eligible. They participate in groups of 10 to 12 students each under the supervision of skilled personnel for a 3 to 4 week program. One week is devoted to hiking and exploring the area. Some financial assistance is available to offset travel expenses and personal equipment expenses for those in need. All group food, equipment and supervision is provided by the Student Conservation Association.

College-aged students may spend 8 to 12 weeks learning and performing duties as Park and Forest Assistants similar to those carried out by professional park and forest service personnel. Park and Forest Assistants receive grants to cover travel and living expenses. Housing is provided.

Duties for high school groups may include trail maintenance, revegetation of areas, boundry fencing, and shelter and bridge construction. College-age participants carry out interpretive programs and provide visitor services, perform research, and assist rangers in back country patrol and other duties. Participants explore and learn about new areas of the country, gain experiences in work and outdoor living skills, and participate in the management of the national parks, forest and other park and conservation lands.

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CITY CRITTERS — SUCCESS STORIES OF THE INTERNATIONAL SET.

Marlin Perkins to Speak At Bald Eagle Days '78

Renowned conservationist and T.V. personality, Marlin Perkins, will be the banquet speaker for 1978 Bald Eagle Days to be held at the Holiday Inn, DeKalb, Illinois, on January 27, 28 and 29. The plans for Bald Eagle Days 1978 have been announced by Terrence N. Ingram, Executive Director of Eagle Valley Environmentalists, Inc.

Bald Eagle Days is conducted each year to stimulate an interest and awareness on the part of the public about the future of our national symbol. During Friday, January 27, eagle researchers from across the nation will meet for a round-table discussion of eagle problems. Saturday these same researchers will present their research results to the public via slide shows and panel discussions. Saturday evening will feature the annual banquet during which time Mr. Perkins will speak and the Bald Eagle Person of the Year will be awarded. The event will culminate on Sunday with bus tours to visit the eagles wintering along the Mississippi River.

The three day celebration is open to the public. For reservations or more information contact: EVE, Box 155, Apple River, Illinois 61001.

Greenpaper

[Ideas for Urban (and Suburban) Green Thumbs]

Plant a windowbox full of seeds, flowers and vegetables.

Give seeds as birthday, Christmas cards, plants as presents.

Weed a garden, water a tree, hug a tree, protect a tree, share shade.

Try shelves in your windows (Plexiglass or safety glass, at least 1/4" thick).

Grow vines, ivy on ugly walls and fences, plant grass everywhere.

Save your tomato, orange, grape, lime, zucchini, green pepper, lemon seeds. Put them in earth, water and cover with plastic wrap until they sprout. Visit the botanical gardens.

Picnic in a park, smell an herb.

Embarrass LITTERBUGS, consider a Citizen's arrest, recycle paper, glass, aluminum.

Carry Zinnia, Marigold, Sunflower seeds, have a secret park grow for you.

Make new friends, swap plants, cuttings, seedlings, share knowledge.

Grow catnip for a cat, make a birdhouse or a birdbath for a park or nursing home.

Scattering and planting seeds is more fun than graffiti; grass grows, and spreads.

Run your fingers through cool, soft, clean grass; smell it, whistle on it.

Start your own herb garden; basil, sage, chives, and parsley easily grown from seed.

Teach/learn what Poison Ivy looks like; wash with Brown soap if you touch it.

Vote $$$ for green growing spaces, write your representatives, be aware.

Camp out overnight under trees, stars; listen to growing sounds, crickets.

Make your own dyes: red sumac leaves for black; berries for red; spinach for green: carrots for yellow.

Color new cement GREEN. Have a "Potting Party." Read Walt Whitman.

Save your hard-boiled-egg water, let it cool and give it to your plants.

Steam/humidify your plants with vapors of leftover tea/coffee water.

Keep a bowl of dirt or sand for visiting children, nervous friends or yourself to play with.

Visit a greenhouse. Photograph, draw, memorize a plant or flower.

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