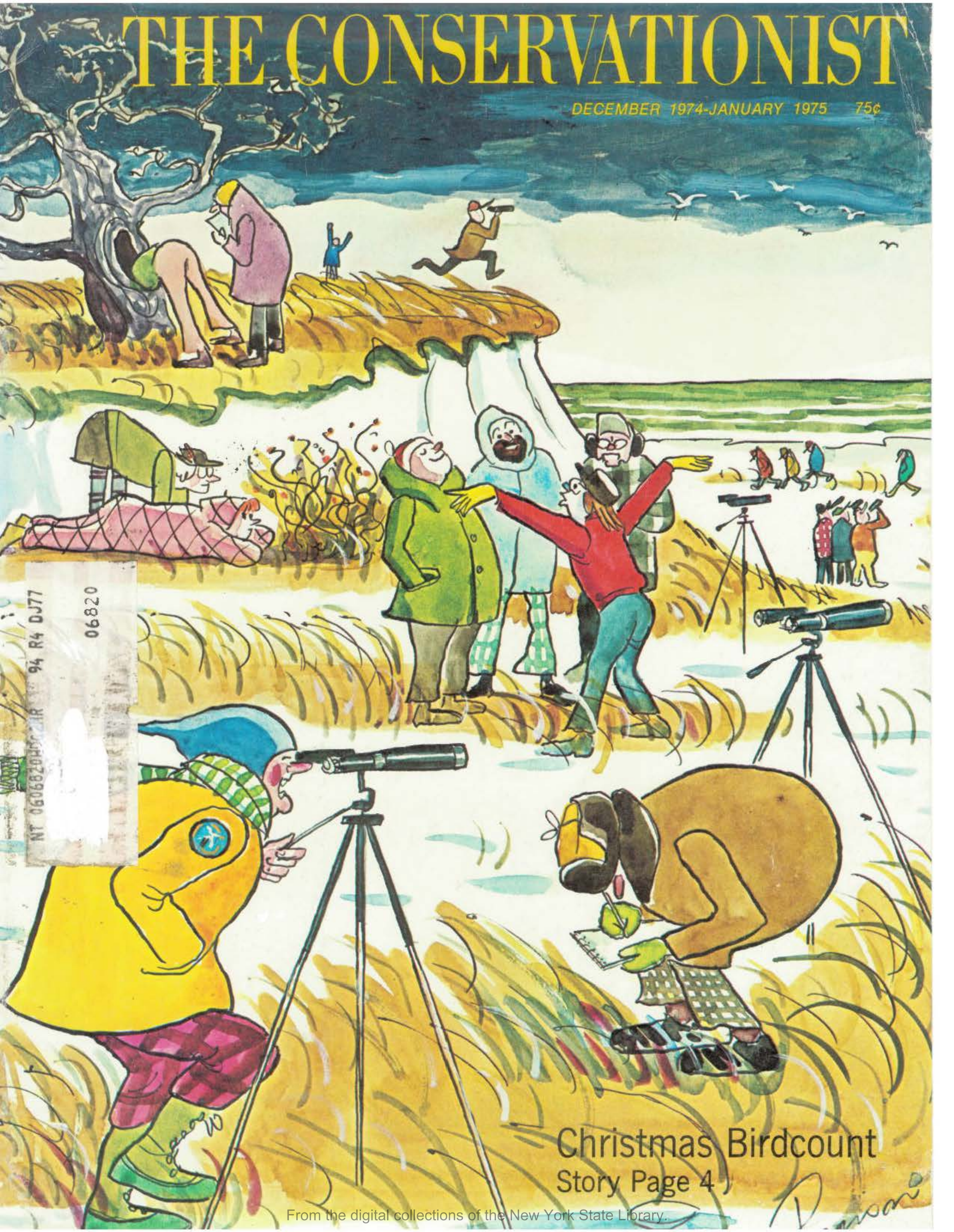
THE CONSERVATIONIST

DECEMBER 1974-JANUARY 1975   75¢



Christmas Birdcount
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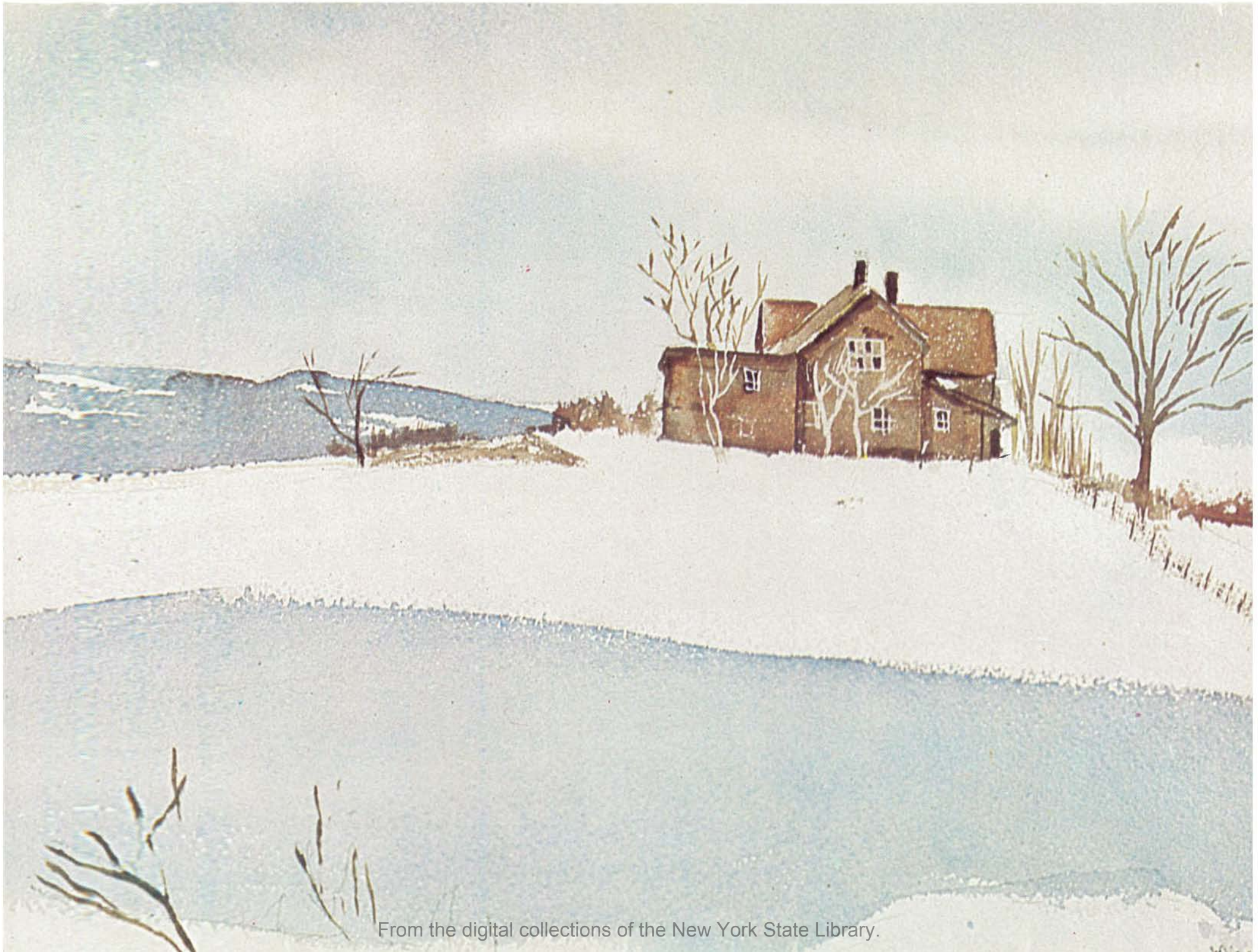

from "This is My Own" by Rockwell Kent
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YEATON

PEARSON

WESTBROOK

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PAGE TWO *about this issue*

Our portfolio of New York State official symbols (August-September) was considered very newsworthy by a number of newspapers, radio and TV stations, especially our proposal that the beaver be designated as the state's official mammal and the brook trout the official fish. Assemblyman Glenn Harris reported an urgent call from Pennsylvania notifying us that the brook trout was already that state's official fish. Carol Chady of the Albany Knickerbocker News undertook research on her own and informed her readers that the late Assembly Speaker Oswald Heck, Senator Albert Berkowitz of Granville, and Senator Watson Pomeroy of Wassaic had each in his time introduced legislation to so designate the beaver. John Gambling, who conducts a very popular program on WOR, interviewed our editor on the subject; he suggested that saltwater fishermen might prefer the bluefish to the brook trout. He also suggested that the cow might be more appropriate as a mammal than the beaver but conceded he had never eaten beaver tail. Gambling thinks we ought to designate a state insect, too, and told how school children in a western state had prevailed upon their legislature to honor the ladybug. We'd like to make it clear that the staff of this magazine has no monopoly on the right to nominate a mammal, fish or insect and we will be glad to pass on to the Governor and the State Legislature all nominations from our readers.

Work on our cover story (Heroes of the Christmas Bird Count) began in November 1973 when SAMUEL YEATON of Bayside, a veteran of many Audubon bird censuses, agreed to write the story of the then upcoming bird-count. His article arrived in our office in January 1974. Early in summer CHARLES D. PEARSON of Hudson read the article and consented to prepare illustrations for it including a cover. The resulting combination of pictures and text is, we think, a most happy one.

Mr. Yeaton is a distinguished member of the bar, assistant general counsel and director of patents for the Sperry Rand Corporation. He was born on Long Island and has lived there all his 63 years. In 1929-30 he worked with Bill Carr organizing the Bear Mountain Nature Trail, and the Trailside Museum. He later worked as a biologist and herpetologist with the American Museum of Natural History and in the early 1930's constructed the first nature trail at Belmont Lake State Park. He helped found the Long Island chapter of Nature Conservancy and edited its magazine, Sanctuary. For 35 years he has been a member of the Queens County Bird Club.

Mr. Pearson is widely known for his cartoons in the Knickerbocker News, which he draws with his left hand. He is also, he says, a lefthanded farmer in Columbia County, where he serves on the Soil and Water Conservation Board.

"I try to stir people up so they will be as enthusiastic about a countywide soil survey as I am," he writes. "Actually I am not much of a birdwatcher. I'm more a bird talker-toer. I can warm up to those birds who will sit on a fencepost and say tweedle-tweedle at the proper times."

PERRY D. WESTBROOK (Edna St. Vincent Millay at Steepletop) is a professor of English at the State University of New York at Albany. Over the years he has done a considerable amount of writing — thirteen books (including five mystery novels) plus many articles. He has published critical-biographical books on Whitman, Dostoevski, Mary Ellen Chase, Mary Wilkins Freeman, and most recently (1974) on the New York author-naturalist John Burroughs. But the book of which he is most proud is "Biography of an Island," a study of a Maine island fishing community.

Presently working as a free-lance writer with the American Museum of National History, RITA ZEPF (An Island for the Birds) has a diversified background of teaching and writing experience in Asia. She has taught English to Thai students and worked as a reporter and features writer for The Bangkok Post. She currently resides in New York City.

Photographs for Ms. Zepf's story were taken by JOAN STORMONTH BLACK whose photographs of common and roseate terns have illustrated magazine articles for Natural History, On the Sound, National Wildlife and the National Geographic Society's book "Vanishing Wildlife of North America." Her works have also been exhibited at the American Museum of Natural History, the Cape Cod Museum of Natural History and at Cornell University's Laboratory of Ornithology.

L. H. MACDANIELS (Nut Trees of the Northeast) says that his interest in nut trees dates back to his boyhood in northern Ohio where he was familiar with

(Continued on page 47)

MACDANIELS

SMITH

CLARE

DIAMOND

CARR

Food and Climate

THE easing of the drought in the American midwest late in the summer allayed fears that this country faced an imminent food shortage. There is nevertheless no room for complacency. Any decline in supplies will add another factor in the inflationary spiral in food prices already being suffered by the consumer. During the past 20 years, 1953 through 1973, food prices in the U.S. increased 70.4 percent. The increase in 1973 was 14.5 percent, the largest since World War II, and for 1974 the increase is estimated at 12 percent.

More serious perhaps than the higher food costs is the effect that smaller harvests have on the ability of this country to help the developing nations meet the food requirements of their undernourished populations. Lester Brown, a specialist on world food production, told the Commission on Critical Choices for America last summer that this government "would have to decide either to let the people in Africa and Asia starve or persuade Americans to reduce their consumption and give up meat at least once a week."

Grain reserves in this country have normally equalled 95 days of worldwide consumption. At the end of July, Mr. Brown estimated current reserves at less than 27 days. This situation has prompted proposals in Congress for a national grain reserve but their sponsors are not optimistic about early action.

Although the shortage of fertilizer was a factor in poor harvests in India, weather was blamed for crop failures there and in the American midwest, and for the famine in the African sub-Sahara. Indeed much attention is focusing on global climate in an effort to predict future weather and its effect on food crops.

"A recent meeting of climate experts in Bonn, West Germany," the New York Times reported recently, "produced the unanimous conclusion that the change in global weather patterns poses a severe threat to agriculture that could lead to major crop failures and mass starvation."

From the early nineteen hundreds through the early nineteen forties, the mean temperature of the northern hemisphere increased steadily. Since then it has moved downward toward the colder figures of the last century. The drop since the forties has been only a half degree but even this could affect agricultural production, it is said.

An international workshop, also cited by the Times, reported that studies indicate that a new climate pattern is now emerging. "There is a growing consensus," the report said, "that the change will persist for several decades and that the current food-production systems of man cannot easily adjust."

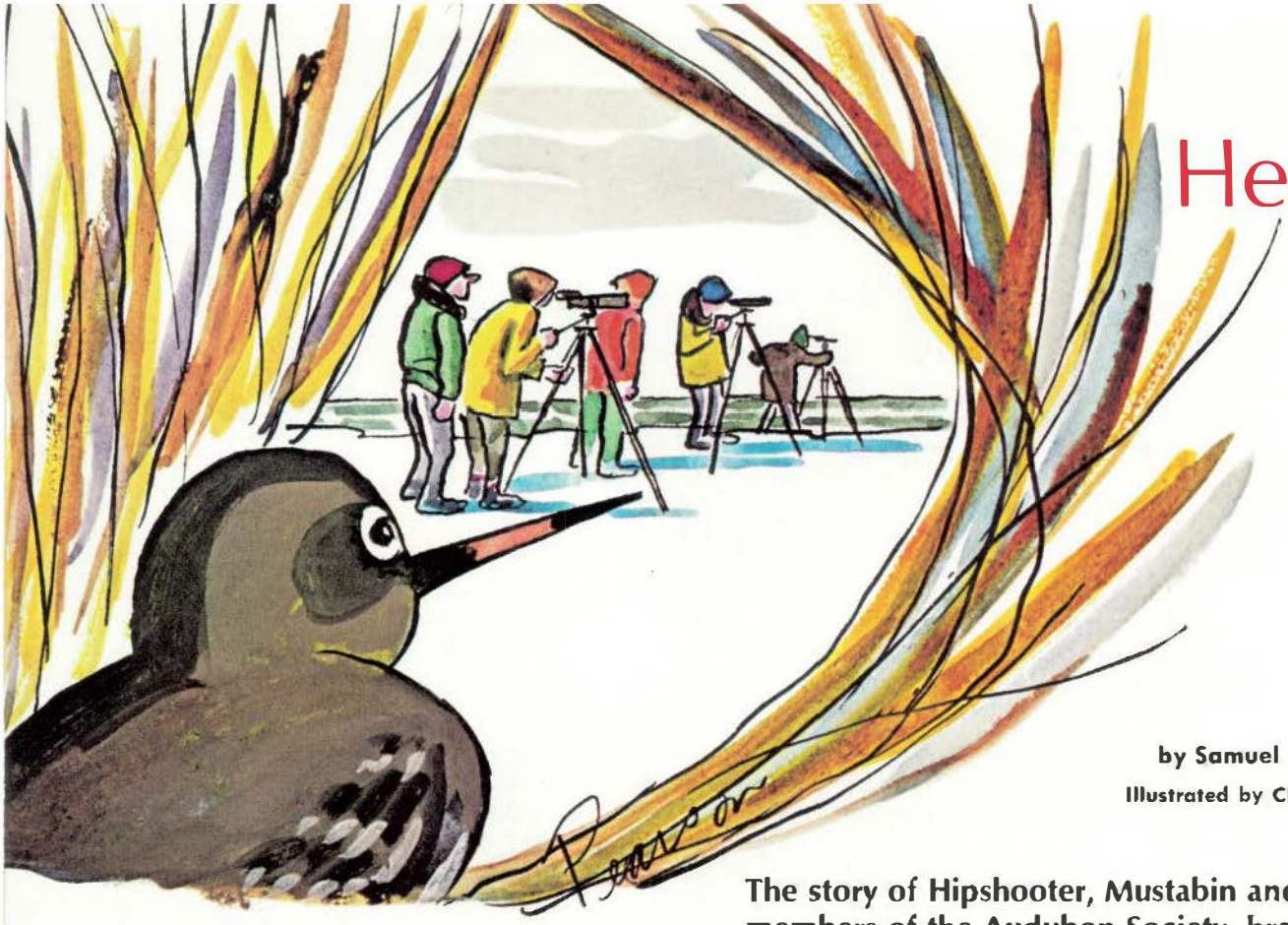
Actually, the U.S. has had remarkably good crop weather for the past 15 years, permitting bumper harvests. But "many think it foolhardy to expect that good fortune to continue indefinitely," the Times said.

Paul Ehrlich in an interview with a reporter for Mother Earth News magazine chided those who defined "normal" weather as that prevailing during the period 1930 to 1960. "According to historical records that was the most extreme period in the last 1,000 years," he said.

Prof. Ehrlich noted that during these thirty years we have been selectively breeding out thousands of strains of wheat, rice and other grains. What if these now remaining strains cannot adjust to the changing climate, he asks.

"You can always select out new strains for the somewhat worse climate we have immediately ahead," he continued. But that requires that you have the broad genetic pool to draw on. Concentration on one or two varieties is in many cases depriving agriculture of "genetic variability"; a single new fungus, blight, plant disease or even insect to which the existing strain had no resistance could prove a calamity.

Dr. Ehrlich is characteristically skeptical of humanity's capacity for changing to meet new environmental demands. We, on the other hand, continue confident so long as mankind is kept informed, which is what this magazine is all about. — R.F.H.



Heroes of

by Samuel C. Yeaton

Illustrated by Charles Pearson

The story of Hipshooter, Mustabin and other valiant members of the Audubon Society, braving the frigid winds of a Long Island December

IT all started many years ago, so many years ago that the Audubon Christmas Census taken in 1973 was the seventy-fourth. The census is, of course, taken all over the United States, but this is the story of the census on Long Island, that southeast corner of New York State which is the longest island on the east coast of the United States, and the host to about 80 percent of the wintering waterfowl of the Empire State.

Planning starts in November. A census planner is chosen and he closets himself in his chambers with the membership roll of his club and a map of the fifteen mile circle which it is to cover. He first divides the circle into a plurality of territories, say ten, and he then selects a team for each territory, and a leader for each team. Every member of the club must be given a chance to participate in the census, for the census is the gala event of the year, ending in a nighttime gathering where food and drink are dispensed, and the final tally is taken. The planner knows who in his club are reliable observers, and he also knows all those members who are not yet able to distinguish between sure identification of a bird and guessing. The trick is to be sure that each of the leaders is a reliable observer, and that each questionable observer is tied tightly to the apron strings of a reliable one. And all this must be accomplished with tact so that no one's feelings are hurt, and so that no beginner feels so squelched as to become discouraged with birding. The count must be accurate. This is a must! And the Christmas Census must be truly a gala event, not to be marred by incidents and frictions which can destroy the club's esprit de corps.

Every bird club has its eager beavers, and the census planner will do well to consider them when making team choices. There is, for example, Junior, who has been struggling hard to learn to identify male birds in breeding plumage. Only the other day he called "bobolink" when a young red-wing flew over a weedy field. Junior must definitely be teamed with a good observer. In addition to Junior, there is Hipshooter. Whizzing down the highway on the harrier beach at sixty miles an hour, he once identified a sparrow-like bird which flew up from the roadside as the extremely rare hoary redpoll. Lone Wolf must also be kept tightly in tow. Every time he wanders from the group, he sees a rare bird. And there is that truly wonderful fellow, the Professor, that is, the absent-minded professor, whose red-breasted nuthatch eventually gets reported as a brown creeper. Also there is Old Forty. He has been birding for forty years. A string of cormorants goes by, and he casually calls the last bird a double-crested cormorant. How can he tell? He has been birding forty years. That is how he can tell. Mustabin must also be watched. That white speck out over the ocean he calls a kittiwake. How could you tell, Mustabin? "Wal, it wasn't a Bonaparte, so it mustabin a kittiwake!" And there is Mort, which is short for Amortizer. He reports twelve lesser scaup in each flock of bluebills; one white-crowned in each flock of whitethroats; and a fish crow in each flock of common crows. Hardest of all to keep corralled is Old Expert, self-acclaimed. He is the one-up-man who identifies each bird which is so far away no one else can say for sure what it is or what it isn't.

Eventually the job gets done. Each team is ready to scour its territory. Each leader is forewarned who to keep a sharp

the Christmas Birdcount

eye on. Then the fateful day arrives. Lord help the police on the night shift. It is not yet dawn, the temperature is at seventeen degrees, and why is that dark form standing out there on the end of the dock? Is he going to jump in? Who is this fellow heading out on the treacherous marsh in the dark? Is this an abandoned car in this lonely spot on the outer beach? Who are those fellows entering the Pratt Estate? Is that a spy looking at Fort Totten through a telescope? And what do the two cops in the prowl car do when they finally question a pair of dubious looking men in the early dawn looking into someone's backyard through binoculars, when one of them says "We're looking for birds?"

As every birder knows, birds are very vocal at daybreak, and in the winter, this may be the only time they are vocal. An observer positioned out on the marsh just before dawn may hear rails; another in the spruce grove may hear a horned owl and a hermit thrush; and still another at a spring hole may find snipe, woodcock, a gallinule, some herons and a host of smaller birds. Later in the day these birds may be next to impossible to find. And so it is that at the coldest, windiest time of day, we are all in the worst spots to be weatherwise.

Long Island is famed for its mild winters. Ponds and streams are open, fields are snow-free, berry-bearing shrubs and rich grasses lush with seeds are everywhere. It is a haven for wintering birds. But this mildness is a thermometer mildness. Long Island weather, with the mercury around 15°, can be brutal. At zero degrees few would want to brave the barrier beach. To quote from Paul F. Connor's excellent pamphlet on the mammals of Long Island (Bulletin 416, New York State Museum, 1971), "Long Island is a windy place, and where there are no obstructions, as at Montauk, Shinnecock Hills, and along the outer barrier beaches, wind has a pronounced local effect on the vegetation. In such areas during winter the wind makes it feel much colder than the thermometer indicates. Weather Bureau records show that Montauk Point is one of the windiest spots along the Atlantic Coast." In other words, with the thermometer at 17°, as it was when we took our census on December 22nd at the west end of Long Island (Queens County and the adjacent portion of Nassau County), and with the wind at 35 miles an hour, gusting to 60, the chill effect was such as to try the most stalwart. As one of our members said as he flinched before the wind coming off Long Island Sound, "This can't be for real!"

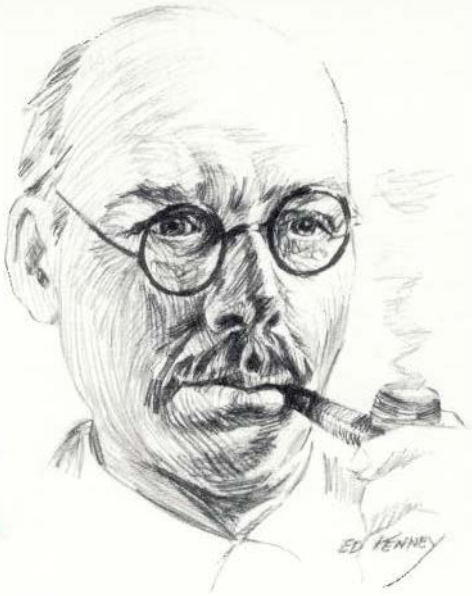
The first day the census could be taken in 1973 was Saturday, December 15th. This was a pleasant day, and the Captree census (Jones Beach to Islip) saw one hundred and forty three species of birds. This set the standard which other clubs would attempt to beat. Sunday, however, was a day of cold, icy rain, forcing several clubs to reschedule their censuses. Monday was disaster. Western and northern Long Island were hit by the worst ice storm in recorded history. By 7 o'clock in the morning, sounds resembling cannon shots echoed all over this area, as branches cracked under tremendous loads of ice, immense trees crashed to the ground, many uprooted, and forked trees by the hundreds were split asunder. Every branch and twig carried a half-inch coating of ice. The winter buds of the dogwoods were transformed into one-inch plums of ice with dark centers. Cedars and arborvitae became green waterfalls of frozen ice. Even blades of grass on the lawns became rigid pencils of ice topped with spherical erasers. Then the sun came out, blue skies prevailed, and the whole world became a crystal land of astonishing beauty. Branches curving gracefully to the ground defined mysterious lanes through hanging curtains composed of tens of thousands of sparkling rods arranged in patterns and designs which only Nature could have devised. All day and for several days thereafter the cold temperatures preserved this winter world of pristine beauty. On Tuesday, as the sun set, the diamond-like branches turned to soft gold, and the eastern sky turned an unusual red. It was a time of great beauty and a time of terrible destruction. But it was no time to go birding.

State of New York, Department of Environmental Conservation

The ice coated everything edible in a shield as hard as glass, and the birds left. Finally on Thursday a warm rain dissolved this crystal shield, and Saturday found life returned to normal, except now the high winds moved in, keeping to ninety-nine species our count on western Long Island, the area hardest hit by the ice storm. We nevertheless saw some birds worth seeing. There were a few good (not rare) birds. They were pied-billed grebe, snow goose, black-bellied plover, yellowlegs, palm warbler and red crossbill. There were a few rare-for-winter birds, such as the blue-winged teal, wood duck, merlin, long-billed marsh wren, brown thrasher, pipit, cedar waxwing, yellowthroat, and towhee. And there were some very-rare-for-winter birds, dowitcher, laughing gull, and dickcissel.

Unusual birds in winter are the rule for Long Island. In addition to those listed above, the following unusual birds were seen during the 1971 and 1972 censuses in which one hundred and eighty-eight and one hundred and seventy-eight species were seen, respectively. Red-necked grebe, green heron, common egret, snowy egret, Louisiana heron, yellow-crowned night heron, glossy ibis, whistling swan, blue goose, common teal, American widgeon, ring-necked duck, harlequin duck, tufted duck, bald eagle, osprey, peregrine, king rail, common gallinule, semipalmated plover, ruddy turnstone, woodcock, knot, least sandpiper, semipalmated sandpiper, western sandpiper, glaucous gull, Iceland gull, black-headed gull, little gull, razorbill, thick-billed murre, dovekie, snowy owl, red-bellied woodpecker, red-headed woodpecker, sapsucker, monk parakeet, western kingbird, magpie, house wren, Carolina wren, winter wren, northern shrike, loggerhead shrike, black-and-white warbler, orange-crowned warbler, Nashville warbler, black-throated blue warbler, pine warbler, chat, Baltimore oriole, Bullock's oriole, pine grosbeak, white-winged crossbill, grasshopper sparrow, lark sparrow, chipping sparrow and Lincoln sparrow.

And so a very long winter day comes to an end. We have taken our Christmas Census, and the festivities are over, the tally taken, the uncertain birds eliminated, and the official count to be reported to the Audubon Society verified. We say good-bye to each other and start thinking of next year and how much better we are going to do when Christmas Census time comes rolling around once again.



Benjamin Talbot Babbitt Hyde

by William H. Carr

Bear Mountain Trail Blazers

WITHOUT some introduction to the natural world around us, via nature interpretation, outdoor education — call it what you will — many of us would still be regarding our natural environment as something to be endlessly pillaged rather than cherished. Actually, it has been only a short time in the scheme of things that a new approach to such education has been in operation: specifically, an approach which includes now-familiar outdoor museums, nature centers, nature trails and interpretive naturalists stationed in parks and other outdoor institutions. The basic tenets and many of the methods of this most important movement are now well defined.

But this was not so even within the writer's memory. In retrospect, it seems that whatever success this development has enjoyed derives from a few memorable persons, whose enthusiasm and workable ideas spread out like a rivulet into a thirsty soil.

One of these memorable persons was Benjamin Talbot Babbitt Hyde. An irrepressible advocate of "bringing nature to the people as well as the people to nature," he was a member of a wealthy, socially prominent New York family, world traveler, former Trustee of Teacher's College at Columbia University, and a Patron of the American Museum of Natural History. Still, he preferred the avuncular title "Uncle Bennie."

"With a name like mine," he commented, "I had to think of something to bring it down to earth."

Most important, Uncle Bennie had ideas and was anything but bashful about promoting them. In connection with his museum interests, he and his brother Frederick had been the principal movers and financial backers of the American Museum's ambitious and fruitful excavation of Pueblo Bonito, one of the country's largest and most important Indian ruins.

During this period Uncle Bennie became intensely devoted to the interpretation of natural history. He remarked that he looked forward to devising ways and means of sharing his experiences in the outdoors with city children and others who lacked his advantages. As he said, he wanted to give them the opportunity "to live in the woods for a while and go home knowing more about the land than when they arrived." He had seen examples where such intimacy had simply not resulted in familiarity with nature.

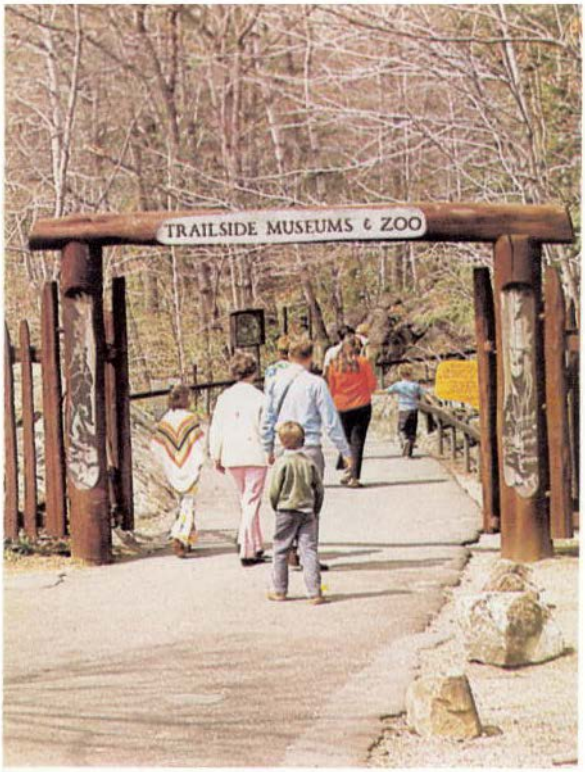
As a scoutmaster in a "less-chance" neighborhood of New York City, he had visited Bear Mountain Park to observe the activities of his troop, camping there with others. And he discovered that, from his point of view, too many of the youngsters' hours were relegated to playing baseball, volley ball, or other pastimes which could more properly have been enjoyed in city playgrounds. For this reason, he sought to change the situation for the benefit of the boys — and of nature itself. The year was 1920.

His was to be an ambitious undertaking. There were fourteen scout camps from greater New York City with from two to three hundred boys in each camp. Their average stay was about two weeks — hardly time for much of an education.

Anyone familiar with the bureaucracy of camps will understand that there was a certain amount of selling to do before Uncle Bennie's plans could be implemented. This was where his outgoing personality and evangelistic zeal came into play. He was six-foot-two in his Scout socks, weighed two hundred pounds, carried a frequent twinkle in his patrician eye, yet appreciated a well-turned limb, be it on a blue spruce or a blond damsel. Too large in stature, in more ways than just physical, to ignore, he combined forcefulness with an unassuming, soft-speaking way of pressing his views. In short, he was a one-man public relations office and it wasn't long before the Scouts, park employees and many others became well acquainted with his philosophy regarding outdoor education.

There was a huge log pavilion beside one of the three Kanawauke lakes in the western section of the park which served as headquarters for all the Boy Scout camps. Here Uncle Bennie cornered the Chief Camp Director, Harvey A. Gordon, and convinced him that a part of the structure should be used for nature activities. His plans in this regard had crystallized: there should be a "Nature Museum" where anyone could come to observe, enjoy and learn about live insects, snakes, birds, mammals, plants and other "specimens," animate or otherwise.

The year after this was set up he gathered together a staff of naturalist-instructors: a geologist, ornithologist, herpetologist, botanist, and a supporting cast of dedicated young people who helped wherever they could. The collections grew rapidly. A library was installed and offices provided. Response from Scouts and their leaders resulted in the premises being crowded most of the time. Endless questions were asked and most, if not all, were eventually answered.



Entrance to Nature Trail

"What is that? Is it poisonous? What good is it? Will it bite? How do you tell what it is? How can we get one?"

And so on, *ad infinitum*. Lectures, demonstrations and guided hikes were given at the Museum and in the camps. The writer, who joined the staff in 1922, recalls leading 52 successive "before-breakfast" bird study hikes with different groups from different camps.

In 1923 a report on the activities of the Museum during its first three years was prepared by its administrative officer, Leslie L. Dawson, who spelled out some objectives as well as some accomplishments:

"Bear Mountain State Park offers a tremendous variety of creatures and flora for the boy to know; his natural curiosity rightly employed makes his camping life a whole new experience. The work of the Museum staff is to guide this natural curiosity so that it becomes intelligent rather than random.

"Camping is not all hiking and swimming and mess. There are periods in every day when, unless some definite program is assigned, the boy has nothing to do. Though his body may be idle, his mind is never quiet. Which is better — that he should play mumblety-peg in front of his tent, or that he should learn a few of the great secrets that are all about him in the story of the birds and flowers and trees and rocks and snakes — things that he naturally is hungry to know about, if only they are presented to him in the right way? Should he continue his superstitions that all snakes are to be killed, all insects destroyed, that toads give warts? Is it not better that he should understand at firsthand why his superstitions are silly, why conservation is imperative, why a knowledge of these creatures is essential in our everyday life, and in the life of the nation of which he is soon to be a citizen?

"The Kanawauke Scout Camps, the largest summer camp of any kind in the country, offers a remarkable opportunity for the development of this educational project on a large and systematic scale."

A year later Mr. Dawson was responsible, together with this writer, for issuing a weekly publication, "The Camp Naturalist," which in the beginning required the cranking of a mimeograph handle far into the night in order to meet the campers' demand for copies at a nickel apiece. While written and illustrated largely by Museum staff members, there were also some accounts by well-known authors, including William Beebe, who graciously provided several articles gratis. Stories about birds, mammals, and reptiles predominated but there were also such titles as "Let's Look More Closely at Rocks" and "How To Make Plaster Casts in the Woods."

Although numbers were small, our influence was considerable, or so it appeared later. Our mentor, Uncle Bennie, circulated among the park's camps and always brought along several wild ambassadors — a very tame skunk, a glossy mountain blacksnake, and an owl. There were some forty-five separate organizational camps in the reserve at that time, and his traveling show became familiar to all of them.

"Have to let 'em know what it's all about," he said, more profoundly than even he suspected. "I always carry samples, like any good salesman. You can't expect people to care anything about animals if they have never seen 'em or touched 'em. You have to make a start somewhere with this nature conservation business. I don't know a better way than this."

Benjamin Hyde was a very practical man as well as a constructive dreamer. His natural history talks were immensely popular. Sometimes he spiced them with observations that lodged in the minds of his listeners:

"You know, looking at a beautiful sunset or sunrise is a fine thing, to be sure, but there's a lot of time in between to look at other things outdoors. The sunrise raises the curtain on this stage and the sunset lowers it."

Such a philosophy and our implementing efforts had their effect. Outdoor educators and recreation leaders from a number of institutions and organizations visited the Kanawauke Nature Museum to talk with Uncle Bennie and his staff, to observe methods of nature presentation and generally to consider the techniques employed by the pioneer outdoor interpretive undertaking. Among the interested persons was Dr. Frank E. Lutz, Curator of Entomology at the American Museum of Nature History, who was an inspired interpretive naturalist. In 1925 he established his "Station for the Study of Insects" near Tuxedo, several miles to the west, where from that year to 1927 he developed a series of unique nature trails. Dr. Hermon C. Bumpus, another interested observer, was a former director of the American Museum and was later largely responsible for securing funds from the Laura Spelman Rockefeller Memorial to establish Trailside Museums in Yosemite, Yellowstone, and other National Parks. This was done under the auspices of the American Association of Museums, of which he was a founder. Bear Mountain Trailside Museum, built beside the Hudson River near the Bear Mountain Bridge in 1927, also received funds from the same Memorial through the urging of Dr. Bumpus.

Thus the well-rooted vine grew, and it was not long before the museum idea spread to Girl Scout, Campfire Girl, YWCA and many other camps in the park. Under the direction of Major William A. Welch, then General Manager and one of the outstanding pioneers in park planning and operation, the Park Commissioners approved the idea of establishing regional museums to provide nature leadership in other lake areas, with such names as Cohasset, Stahahe, Tiorati, and Twin. Originally some of the museums were staffed by students of E. Lawrence Palmer, a leading outdoor educator of Cornell University.

These museums are still active today, and reach some 25,000 young people annually, most of them from New York City, metropolitan New Jersey, and environs. The city and suburban children attend group camps operated by non-profit social service organizations. As for the regional museums, they have been helped by the American Museum of Natural History, the Bear Mountain Trailside Museums, and the New York State Department of Environmental Conservation.

Our own Trailside Museums, mentioned earlier, were established jointly

by the American Museum and the Palisades Interstate Park Commission. The writer of this account, drawing heavily upon experience gained both at the Boy Scout Museum at Kanawauke Lakes and later as an American Museum staff member, was appointed first director and had the pleasure and responsibility of seeing this institution built and grow for its first seventeen years. During that period, the facilities of permanent nature trails, a zoo and outdoor museums were created and joined to form a single educational entity. This combination, plus the development of related interpretive techniques, methods, objectives and philosophies, resulted in what has been called "the living museum concept."

We discovered early in the game that it was just as important for us to be people-oriented as wildlife-oriented. Both objectives were essential. After all, people are important too. You can't neglect the one without harming the other. We felt that many conservationists failed in their teaching efforts through a lack of recognition of this fact. It was a matter of trying to help people *want* to know something about wildlife and plant life to the end that they would develop an attitude that leaned toward a desire to protect what needed protecting.

Not an easy accomplishment? Not an impossible one, either.

One of our first tasks, after deciding where the trails should be located, was the labeling of plants and other objects along the way. Now this seems a simple thing, and it is, but properly done it serves to gain much of that prime purpose, the intimate involvement of the visitor with his surroundings.

On the west side of the park, Dr. Lutz had affixed Dennison baggage tags to plants and insect exhibits. He published as a most useful bulletin a description of this work in 1926. The first account of our Bear Mountain project was published a year later. We upgraded the tags by making eminently readable and more permanent labels, hand-lettering our message on zinc plates with India ink, then varnishing them. These were placed *beside* the particular object — say an outstanding shrub — but never *on* it. This would have detracted from the object itself.

At Bear Mountain we varied the labels and their arrangement, deliberately inveigling the visitor into using them. We made a game of this, if you will. On one exhibit, a rock wall along our geology trail, we ran wires from rocks to labels placed on a rail above; it was instructive to see how this simple puzzle caused many people who otherwise might have passed by indifferently to stop and trace a particular wire to its origin, then its explanation.

All the messages on these labels were short and bore a minimum of technical jargon. A dash of humor was added whenever possible. Our targets included everyone who visited us and did not neglect the carefree lad, probably from Hell's Kitchen, who had come up on a Hudson River excursion boat for the first time and was bug-eyed at the sight of trees higher than himself.

A chipmunk scurried across his path as he entered our area and his remark was a classic. "Jeez, a rat wit' stripes!"

We felt that if we could just hold such a person's interest, tell him something valid about the world outside his city, surely others would be pushovers. Before he entered our trail we informed him, via a large welcoming sign, that we were sorry we could not go along with him but that we were sending a naturalist-friend to explain the bits of nature we had here. The voice of this naturalist, of course, was our labeling system.

We used the senses of sight, touch and hearing to involve the visitor. In most parks, unfortunately, there had always been an overabundance of signs — Don't Touch, Hands Off, Keep Off — hardly the kind of greeting that made one feel welcome. Instead of these, we invited visitors to touch. What better way to appreciate the fact that these things were real and alive than by experiencing the *feel* of shagbark hickory or the skin of a bright-eyed lizard?

We carried this idea — and that of hearing — into our snake pit, a small moated island where we kept a living exhibit of various local reptiles. When the interpreter gave his talk there he invited the audience to reach out, touch the black snake, and find that it wasn't slimy after all, and that its tongue didn't really sting.

On the other hand, there was a tame woodpecker who delighted in lighting on the shoulders of visitors and exploring their ears with his long, barbed, versatile tongue. As this probe tickled his eardrum, said visitor usually rose about three feet in the air and our concept of learning by touch suffered accordingly. There was also some poison ivy, where

Trailside owl exhibit

we put a notice, "Leaflets three, let it be." Unfortunately, this only incited the character who would do anything simply because it was forbidden. To save these undeserving types further blisters we added (as we should have in the first place) a note of explanation as to just why they shouldn't molest the waxy ivy.

In the same vein, we had narrow paths —deliberately so— with nothing between the visitor's foot and the native earth but his shoe. It has always seemed to me that even this small communication, the feel of a woodpath beneath a foot, carries a subtle message, one that was very important to our interpretive goal. Later, with over a half million visitors a year thronging those trails, I understand they had to be broadened and coated with macadam. More's the pity.

One very significant extension of this attempt to teach by touch occurred when we were asked to visit a school for the blind at the nearby town of Spring Valley in 1932. We did the same here, asking our blind hosts to experience and identify the feel of these natural things, which in many cases they had been warned against by well-meaning protectors. They were thrilled with the feel of bark, the various shapes of leaves, and the texture of rocks. Later, we set up a short nature trail there, with tablets in Braille placed on posts beside the path and lines running to the objects identified. The text described the various items of interest in the immediate vicinity as well as naming and telling about the specific natural objects.

This may seem elementary stuff today, but keep in mind that at that time there were few paid interpretive naturalists in the whole country. Today there are thousands of these teachers.

Once having set up our explanatory labels, we did not simply consider the job done and let them stand, regardless. Rather, we skulked alongside while the visitors perused them and made comments, some amusing, some discouraging. We then improved the labels, taking our cue from these eavesdroppings. How hard it is, we learned, to shake the myths with which we are saddled while young! A gentleman insisting to his family that a raccoon was a fox; a pickerel in our tank being called everything from a barracuda to a shark; many visitors insisting that our milk snake would milk cows and that a hoop snake would roll downhill with its tail in its mouth —all these despite our carefully prepared labels alongside the objects of interest.

Some labels were not attached to their subject at all. For example, we placed the description of a bird call along the path where we had seen the caller, telling anyone who heard the cry "Teacher, Teacher, Teacher!" that this was the song of an oven bird. On another trail there were numbers instead of labels. These numbers were keyed to a sheet of questions and answers we handed out to classes, in order to pose an outdoor quiz which they could answer as they walked.

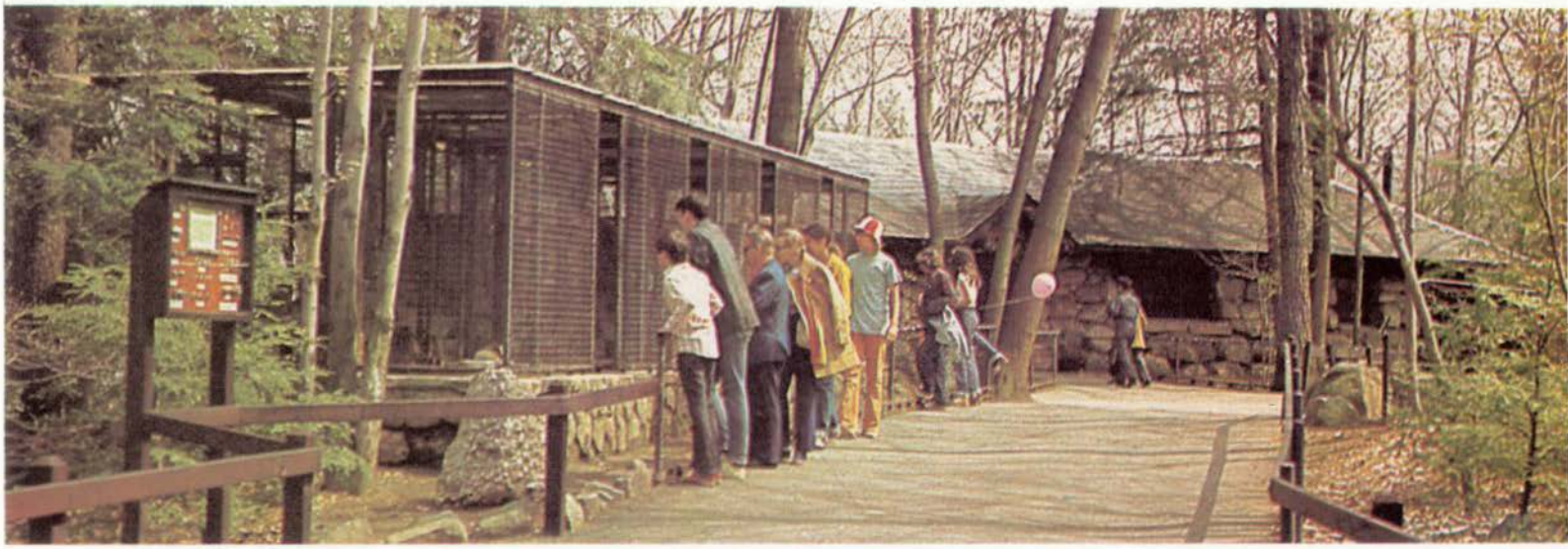
But how can you teach conservation, as Uncle Bennie had said, except with living things, those which quite naturally inspire a protective emotion? The sparkling eye of a living fox simply cannot be duplicated, at least not from the conservationist's standpoint, by any taxidermist, no matter how skilled. Even a child senses, and reflects in his attitude, this difference. The living object elicits empathy; the most that a dead replica can hope for is a polite interest. Thus our concept of a *living* museum.

This same point was made evident in our public media contacts. The first was our radio shows, which actually commenced a year before the Trailside Museum was established. There were two a week over a pair of New York stations. Here we let a rattlesnake buzz, a beaver crunch coast-to-coast on a log, and a bear cub bawl. (He also left interesting marks on a grand piano). Comments poured in.

Then, newspaper stories —and we never tried to hide our operations and errors from the gentlemen of the press. One night our weasel got free and murdered a crow who had gained widespread notoriety by his knack for stealing anything shiny —valuable keys, for instance. But the weasel made a fatal error; he backed carelessly into the adjoining cage after accomplishing his foul deed, and that cage housed two barred owls. . . .

Natural justice prevailed. The next morning we found Charley the Crow dead in his cage, and the body of his assailant drooping from the talons of a complacent, blinking owl. The story of this murder and swift execution earned the second page of the New York Times, and the comment and concern probably brought a thousand people to view the scene of the crime.

Perhaps the prizewinner in this category was a two-paragraph item which deplored the effects of the depression on our chipmunks. These friendly rodents had made a good living from the leavings of picnickers, but as the economic pinch of the 30's began to hurt these leavings became scant indeed. A Herald-Tribune



Cages along the trail.

Children reading quiz board

Nature study building

reporter whose beat included our park called one morning and was given this yarn, mainly for lack of anything better. The fact that here were living wild creatures suffering because they had identified too closely with mankind and his economic system was sufficient reason to send that story around the world in reprints.

Our stock soared. Our competitors, far more prestigious and better-financed than ourselves, took second looks at their own public relations approach.

In an important way the Trailside Museums at Bear Mountain — or Harriman — State Park owe much to previous educational programs originating there. While expanding and augmenting earlier activities and devices, the project nevertheless received inspiration without measure that day when Uncle Bennie first came upon the scene. Others who accomplished a great deal to advance the work were the late Ruby Jolliffe, Chief Camp Director of the Park; Raymond L. Adolph, park forester; and Raymond H. Torrey, botanist and trailblazer, who was also our publicity director. The present Assistant Park Superintendent, John C. Orth, who is also Associate in Nature Education at the American Museum, has probably accomplished more to keep alive the flame in the park than anyone else. Consequently, the outdoor education policies, principles, and interpretive efforts at Bear Mountain have been emulated throughout the world.

As for the Boy Scout Headquarters Museum where this effort commenced 54 years ago, the old log pavilion which originally housed the operation has long since burned down. A Regional Mnseum has taken its place. The Scout Councils have moved away, obtaining their own campsites elsewhere. But a large glacial boulder bearing a bronze plaque marks the place where Uncle Bennie, through his tireless personal efforts, enahled those thousands of city-bred youngsters and their leaders to see nature, many for the first time in their lives.

Eventually, Uncle Bennie left the Highlands of the Hudson in search of health and settled in Santa Fe, New Mexico, where he again became involved in Scouting and nature appreciation. Tragically, he died there in 1932, at the age of 60, when his car plunged over a mountain cliff. It was a sad fact, and a great disappointment to us, that he never saw our Bear Mountain Trailside project which started the year he left the region, and which owed much to his example.

Common tern in flight

An Island for the Birds

by Rita G. Zepf

Photos by Joan Stormonth Black

GREAT Gull Island, with its ruins of Fort Michie, is an inviting place to explore. If the curious weekend-sailor were to ignore the warning signs posted on its shores, he probably would encounter the new defenders that would dive at his head with formidable force.

Among their ranks are common and roseate terns, elegant seabirds in the subfamily *Sterninae*, whose slender bodies are feathered with black caps, pearl grey mantles, and forked white tails. In graceful aerial displays, they call to each other in shrill "ke-ar-rr ke-ar-rr's" and droning "ka-aa-ak ka-aa-ak's" as they circle this 17-acre island in the eastern end of the Long Island Sound.

Separated seven miles from Long Island, Great Gull Island provides an excellent opportunity for the field study of birds. Here, under the direction of Helen Hays, Chairwoman of the Great Gull Island Committee at the American Museum of Natural History, research projects are conducted mainly for the study of common and roseate terns.

In the years that followed its purchase by the U. S. Government from Benjamin Jerome in 1803, Great Gull Island became famous among milliners' agents who slaughtered thousands of the terns nesting on its periphery. The bodies and feathers of terns, were in constant demand to decorate women's hats and dresses. Dealers paid from 25 to 40 cents for a skin and 15 cents for a pair of wings.

By the end of the century, after milliners' agents had decimated the tern colonies along the eastern coastal beaches, it was rumored that Great Gull Island harbored the last colony of terns in the Long Island Sound. Alarmed by the impending danger to the remaining terns, Dr. Frank M. Chapman, Chairman of the Department of Ornithology at the American Museum of Natural History, and Mr. B. H. Dutcher, the first president of the National Committee of Audubon Societies, enlisted the help of conservationist

Young tern learning to fly

groups to save the birds on Great Gull Island.

In 1894 they raised funds to pay for a warden; by 1896 the tern population nearly quadrupled to 14,000; by 1900 the terns disappeared. The U. S. Government, preparing for a war with Spain, built Fort Michie on Great Gull Island. When the military arrived the terns left the island. And for the next 50 years, through World Wars I and II, the island was maintained as a military outpost.

After the war, the obsolete military equipment littering the island discouraged the terns from recolonizing. Moreover, the spread of suburban housing developments along the seaboard greatly reduced the number of coastal nesting colonies, leaving the terns practically homeless.

Aware of the island's history as a nesting site and of the plight of the terns, the American Museum of Natural History bought Great Gull Island from the U. S. Government, and the Museum, with the help of the Linnaean Society of New York, began in 1950 to restore it as a home for terns.

During the next five years, members from both organizations attempted to recreate a natural tern habitat to lure the birds back. Although some terns would land on the island and fish off its boulders during the day, they would leave at dusk. And just when it was generally believed that the birds would not recolonize Great Gull Island, 25 pairs of common terns were discovered nesting on the lower slope of a gun emplacement. Gradually their numbers increased, and today a colony of approximately 2,300 pairs of common terns and 1,200 pairs of roseate terns — the largest concentration of roseate terns in the western hemisphere — nests on the island.

The male tern, who usually arrives at the nest site before the female, establishes and defends his territory while awaiting a mate. When he spots a likely partner, he goes through an elaborate ritual to attract her: he either calls to her from the ground as she flies over the nest, or he struts in front of her while scraping in the sand, or he attracts her with a fish.

If he is successful and they breed, the female lays a clutch of two to three eggs. During the 21 to 23-day incubation period both take turns keeping the eggs warm. When the eggs hatch, the new chicks are brooded in the nest for the first two or three days by the female. Both parents then assume this responsibility, usually with the female taking the larger share.

In 1969, Helen Hays, with other team members, initiated a comprehensive program for the study of common and roseate terns. To obtain the necessary data, team members band the terns, take a daily census of their population, observe their feeding behavior, and collect information for individual research projects.

"Team members work around the natural clock of the tern," says Helen Hays. "They are up at the first sign of light, and during the peak of the breeding season some work from ten to twelve hours each day." At 5:00 a.m. the research team members — staff members of the American Museum of Natural History, the Linnaean Society of New York, visiting ornithologists, scientific investigators and volunteers from various high schools and colleges — emerge from the old army barracks and assemble mid-island to begin their daily work.

In eight years, workers have banded approximately 3,000 adult common terns and 1,000 adult roseate terns to determine their distribution and migration patterns. In late July and early August, team members spot these banded terns along the shores of Connecticut and Long Island. By September, bird watchers spot and sometimes recover these terns in various parts of South America and the Caribbean — an approximate 2,500 miles from their breeding grounds on Great Gull Island.

David Duffy, a college student, demonstrates the banding process. He places a metal trap over the tern nest; the adult tern then steps on the treadle and is caught in the trap. David carefully removes the bird and places three colored bands and one aluminum U. S. Fish and Wildlife Service Band on the adult's leg to give each tern an individual color combination. If there are any chicks in the nest, he attaches a numbered plastic band on one leg. When they are older, this is removed and they are banded like the adults.

Whenever possible, workers attempt to band pairs of adult terns. From this they learned that some pairs of common and roseate terns return to the same nesting sites each year, and that some pairs will continue to mate if they have bred successfully in the previous season.

In another banding program, Tom Van 't Hof of Brookhaven, N. Y., traps the various land migrants that usually congregate in the "Warbler Way," a section of the island whose dense vegetation provides ample food and shelter for these birds. Most leave within 24 hours, although some may stay as long as 13 days.

Among the many species that Tom trapped on the island were the green heron, the peregrine falcon, the oystercatcher, the whip-poor-will, the Acadian

Roseate terns

Common tern with young

flycatcher, the gray-cheeked thrush, the golden-wing warbler, the Kentucky warbler, and the hooded warbler.

The method he uses to catch these migrants is "mist netting." Each morning he lets down a net that opens in a series of tiers. Its fine black mesh, invisible against the background of bayberry bushes, entangles the birds that fly into it. At regular intervals, he checks the net, removes the birds, and brings them to the banding room where he records their species, weight, wing length, sex, and the date on which they were trapped. After recording this data, Tom delicately hands and frees the birds.

Workers, in their daily census of the island's tern population, survey the nests of the roseates under the boulders that surround the island, and the nests of the commons on the island's open areas. In this procedure, they record the number of the nest, its location, and the number of chicks or eggs in each nest. This is repeated during and after the breeding season to maintain an accurate count of the tern population, to see if any nests have been abandoned or destroyed, and to determine whether any new nests were made.

Without their meticulous daily survey, workers might not have discovered the grossly deformed tern chicks in 1970 or the shell-thinning that appeared the following year. Although the cause for the birth defects has not been determined, it is believed that they may be related to chemical pollutants in the environment. Nor, without their acute observations, would they have discovered the first hybrids ever reported between mixed pairs of common and roseate terns.

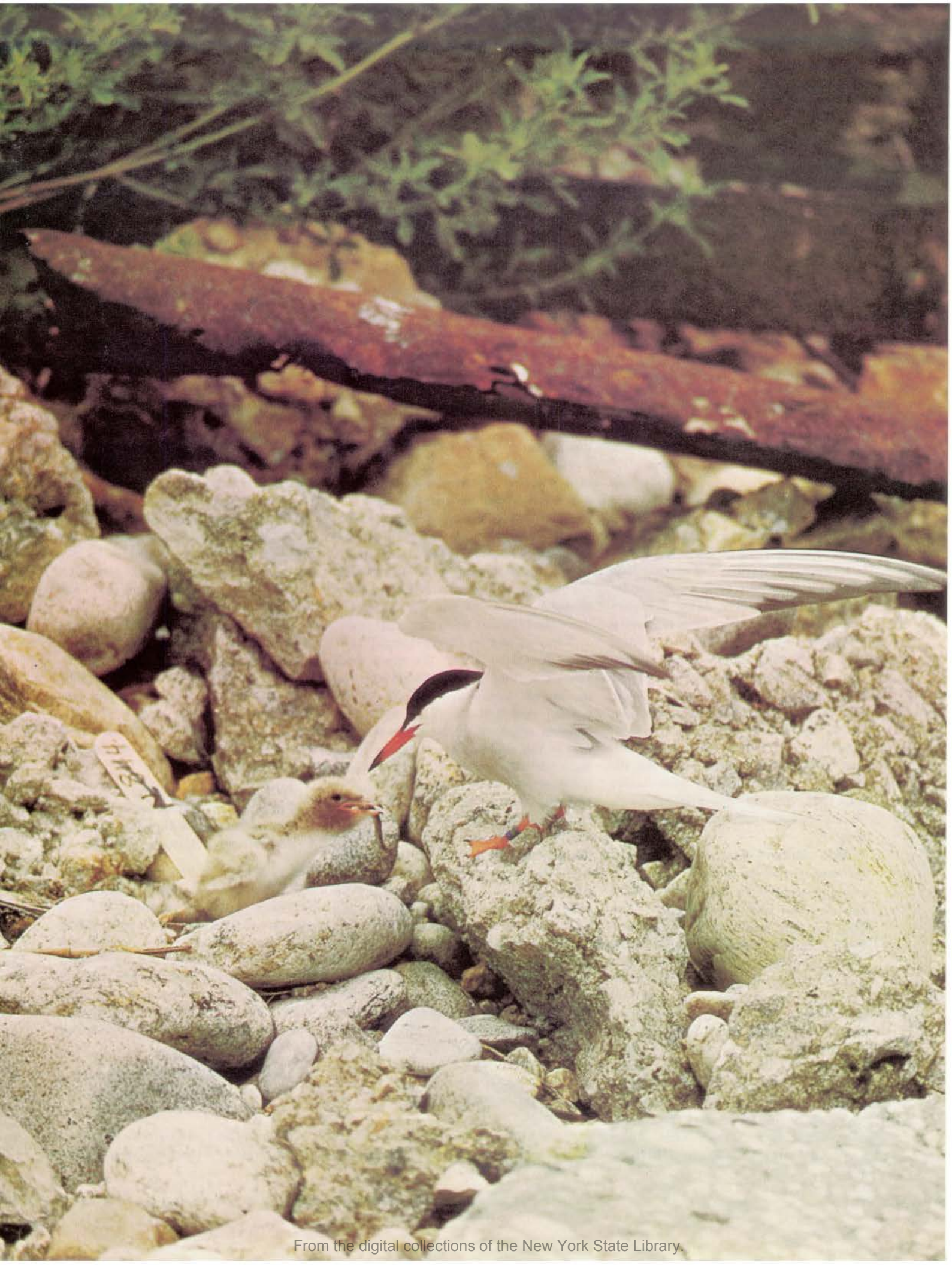
During the two-hour feeding watches, that begin at 5:00 a.m. and end at 9:00 p.m., workers observed that terns are opportunistic fishermen when large numbers of small fish are present on the surface of the water. After the tern swoops down, plunging partly beneath the surface of the water, it sometimes emerges with several fish, with the fish heads on the same side of the bill.

Usually, the parent returns to the nest with one fish. But if, after a successful foray, it returns with several, the chicks either walk toward the parent and take the fish one at a time, from its bill; or they dash toward the parent and appear to knock its bill. In response, the parent drops the fish for the chicks.

The data that the workers have collected in their individual research projects has contributed valuable information on

(Continued on page 45)

Above, tern hovering over nest; right, roseate tern on rock (note the black bill); for right, young tern surveys the world; below, an adult tern begs for a fish; opposite poge, a common tern feeding her young.



by Perry D. Westbrook

Edna St. Vincent Millay at Steepletop

HERE we are, in one of the loveliest places in the world, I am sure, working like Trojans, dogs, slaves, etc., having chimneys put in, and plumbing put in, and a garage built, etc. — We are crazy about it. . . ." Thus did Edna St. Vincent Millay, one of America's greatest poets, write in a letter to her mother in the summer of 1925. The poet and her husband, Eugen Boissevain, had recently purchased a farmhouse with hundreds of acres of land near Austerlitz, New York, on the border of Massachusetts. The hilly Berkshire countryside in which the farm is situated is indeed lovely — a region of wooded hills and winding valleys, with sweeping vistas of meadow and pastures in the bottomland and along the lower slopes. Here is the pastoral Northeast at its best, as any one will attest who has traveled along Route 22 from Pawling northward. Here would be an ideal place for the home of a poet who drew upon nature more than from any other external source for the material and inspiration for her verse.

Miss Millay — she always retained her unmarried name — and her husband, a Dutchman by birth and a retired coffee importer, had been living in New York City, but they were not of the ordinary breed of urban escapees who flee to the country to enjoy its clean air and open spaces and comparative tranquillity without involving themselves in the actualities of rural life. Theirs was to a certain extent a working farm of 700 acres, on which berries and fruit were raised on a commercial scale. Though they sometimes retreated to Florida in the coldest months, they did not regularly shun the vigors of an upstate winter. "Our house is an island in the snow," Edna Millay wrote on March 4, 1926, in a letter to Franklin P. Adams; "it's an expedition to go to Austerlitz. . . . Gene has to walk five miles on snowshoes, coming and going, to post this letter, and fetch the mail!" And in another letter of the same date, she writes: "We have been snowed in — I mean hermetically — four weeks today." This was the first winter of her and her husband's ownership of the farm. The last winter of her life, that of 1949 and 1950, Miss Millay remained on the farm entirely alone, for her husband had died the summer before. She had passed twenty-five years of her life there, and there she intended to stay on until death.

The poet and her husband named their farm Steepletop after the steeplebush which flourished in their upland soil. The two-storied farmhouse with its steeply pitched roof and its ell in back is a pleasing specimen of the older architecture of the region. The exterior lines remain virtually unaltered, one would say, but very considerable renovation has been effected inside to make the dwelling comfortable by modern standards. On the nearby grounds were built — in addition to the garage mentioned in Miss Millay's letter — a large gambrel-roofed barn for cows and horses; a hut, for the poet to write in; a swimming pool; and, on a level spot in the meadows above the house, a tennis court. The house itself is surrounded by evergreens and hardwood trees, so that in summer it is well-curtained from the road. But above and below are broad, sloping meadows, commanding splendid views of hill and valley to the westward. In a grove at some distance from the house is a graveyard in which are buried the ashes of the poet, her mother, and her husband.

Edna Millay was no novice at country living. The place of her birth was the small community of Camden, Maine, on the west shore of Penobscot Bay, and there she had lived during her first twenty years, brought up with two sisters by her divorced mother, who had a passion for music and literature and managed to impart her enthusiasms to her daughters. On the east, Camden is bounded by the bay with its racing tides and innumerable rocky, spruce-clad islands and islets. To the west the town is walled in by two mountains, whose summits command panoramic views of ocean and bay and forested hinterland.

Under her mother's influence, Edna Millay became an accomplished pianist, but her greatest talent was for poetry, which she began to write in early childhood. At the age of seventeen she composed one of her most admired poems — "Renascence." Inspired by the view from one of the mountains back of Camden, this poem begins,

All I could see from where I stood
Was three long mountains and a wood;
I turned and looked another way,
And saw three islands and a bay.

The poet goes on to record her feeling, ending in what she elsewhere describes as "Earth-Ecstasy," experienced in the presence of the beauty of the scene. Many years later she may have recalled this scene as she walked in the fields above Steepletop in the evening and saw the hills rising through the mist in the valley below. Seized by a nostalgia for the sea and "the pounding of long white breakers," she wrote:

These hills, beneath the October moon,
Sit in the valley white with mist
Like islands in a quiet bay.

Edna Millay's nostalgia for the Maine Coast seems to have been undying, and

in later years she and her husband spent part of each summer on an island which they purchased in Casco Bay. Yet she regarded Steepletop as her true home in every sense of the word. In the poem just quoted—"Mist in the Valley"—in which her thoughts turn to the sea, she writes feelingly of her

. . . house on upland acres,
Sweet with pinxter, bright and rough
With the rusty blackbird long before
the winter's done. . . .

Landscape or seascape, natural beauty wherever found, whether in the bloom of a flower, in the song and plumage of a bird, in a sunset or in the stars of a night sky, were the stuff of which Edna Millay made her poems. For her mission as poet was that of all true poets or artists—to record the loveliness, the wonder, at times the terror of the world and all that lives and grows in it, and of the universe of which the world is a part.

Edna Millay's "Renascence," a hymn of praise to the beauty of the world, won immediate recognition as a masterpiece. But curiously her widest popularity, which crested spectacularly during the 1920s, rested upon her reputation as a liberated woman—a female counterpart to F. Scott Fitzgerald. After graduating from Vassar College in 1917, she lived for a while in New York's Greenwich Village, where she became associated with the famous Provincetown Players and continued to write poetry. The image of her in the public mind during those years was that conveyed in her well-known quartan from the volume "A Few Figs from Thistles" (1920):

My candle burns at both ends;
It will not last the night;
But ah, my foes, and oh, my friends—
It gives a lovely light.

These lines may have caught the mood of the 'twenties, and to some extent they may have reflected the realities of the poet's life and attitude at the time. But they are hardly representative of the style and content of the great majority of her poetry, and they do not even hint at the more durable values that she obviously found in her life both at Steepletop and on the Maine Coast.

Edna Millay's years at Steepletop were highly productive of poetry—eight or nine volumes, including lyrics, sonnets, and poetic drama. In her house she had a room upstairs—the "poetry room"—in which she wrote and kept her library of verse. Much of her writing, however, she did in the stove-heated cabin in a pine grove back of the house. She wrote on many subjects—love, death, justice, war, to name but a few. But there is hardly a poem from her pen, no matter what its subject, that does not contain an image or a figure drawn from nature. And of course many of her poems deal entirely with some aspect of nature—animals, plants, the mountains, the sea, the seasons, the sky, the stars. But most notably her poems abound in references to, and descriptions of, birds.

Her biographers tell us that the first poem that Edna Millay ever wrote—at the age of five—was entitled "One Bird." Vincent Sheean, in his delightful little book about the poet's affinity for birds and theirs for her, "The Indigo Bunting," dwells on this phase of her life and work. He lists the poems exclusively about birds and assesses the immense importance of the presence of birds in her poems in general. Edna Millay fed the birds the year round, even in summer, a practice which prompted her husband's amused complaint that she "kept a hotel for birds." In her girlhood and all through her life, we are told, she would arise before dawn to scatter her bird feed. The feeding stations at Steepletop were arranged so as to enable her to observe them from the living room windows. She spread seed on the sill of her bedroom window, and occasionally a bird would fly into the room for seed placed on the floor.

To aid her in her birdwatching she used Chester Reed's "Bird Guide: Land Birds East of the Rockies," in the margins of which she kept records of her observations. Vincent Sheean in "The Indigo Bunting," has compiled from these notations a lengthy list of the species she had observed at Steepletop, on the Maine coast, and elsewhere. He also records some of her marginal comments, which reveal the intensity of her interest. For example, on seeing her first Bohemian waxwing, she exclaims: "Oh, at last I've seen one! (Seen two!)" On occasion she is critical of the author of the "Bird Guide," as when she takes exception to his describing the chirp of the English sparrow as "a harsh, discordant sound." Her indignant rebuttal is, "It's no such thing! It's a sweet sound, you old meanie! Just because you don't like them!" In her dramatic poem, "Conversation at Midnight," one of the characters speaks of "the joy of knowing fifty songbirds by their note alone." To Edna Millay the note of no bird was unworthy of attention.

Edna Millay was convinced that the birds responded to her as she did to them. On Ragged Island, her retreat in Casco Bay, Maine, she and her husband would nurse back to health sea gulls which had collided with the rocks along shore. There as at Steepletop, the birds shed their usual timidity with human beings and would circle close about her when she came out-of-doors. This sort of rapport between persons and wild creatures is much rarer than that which we often observe between human beings and domestic animals. But such rapports exist, as in the case of Edna Millay and birds, and it is this aspect of the poet's relation to nature that is the subject of Vincent Sheean's book.

Photo by Arlen Westbrook

Edna Millay was deeply concerned with wild animals as well as with birds. Her "The Buck in the Snow," the title poem in a volume of verse published in 1928, is as nearly perfect a poem as any she ever wrote. Based on an episode she observed at Steepletop, it deserves quotation in full:

White sky, over the hemlocks bowed
with snow,
Saw you not at the beginning of
evening the antlered buck and
his doe
Standing in the apple-orchard? I saw
them. I saw them suddenly go,
Tails up, with long leaps lovely and
slow,
Over the stone wall into the wood of
hemlocks bowed with snow.
Now lies he here, his wild blood
scalding the snow.

How strange a thing is death,
bringing to his knees, bringing
to his antlers
The buck in the snow.
How strange a thing—a mile away
by now, it may be,
Under the heavy hemlocks that as the
moments pass
Shift their loads a little, letting fall
a feather of snow—
Life, looking out attentive from the
eyes of the doe.

At their profoundest level these lines probe the mystery of life and death — the buck cut down in his full vigor and the doe surviving under a distant hemlock from which the snow silently falls. On another level they examine the relation of the human race to the rest of nature and point, without sermonizing, to the needless destruction — as it seemed to the poet — of life and beauty. This destructive tendency, seemingly so ineradicable in human nature, appalled Edna Millay as it surfaced in the Second World War. On a less spectacular level, in "Conversation at Midnight," she describes our present era as a "Noise-Age" in which our numerous gadgets conspire to shatter silence and nerves. So sensitive was she to mechanical noises that she could not bear the humming of the telephone wires that entered the house near her bedroom windows and had them and her telephone removed.

Edna Millay's ultimate concern and dread were that the human race might not survive its own excesses and would annihilate not only itself but the whole planetary ecosystem. Deeply interested in astronomy, she was impressed by the insignificance of our world in the limitless expanses of interstellar space. She saw our home in this vastness as a mere speck but a speck, nevertheless, with its own loveliness and unique value — a speck eminently worth saving. She was convinced that humanity could save itself, if it willed to do so. Though she deplored the damage done to the beauty and inhabitability of the earth by our technology she knew very well that mankind had survived innumerable natural catastrophes in the past and believed it had the capacity of continuing to survive, adapting itself to new circumstances, whether natural or manmade, as they arose. She was not as alert as we are today to the problems of air and water pollution, for instance, nor was she as painfully aware as we of the accelerating depletion of necessary natural resources and of the incredibly grim consequences of a rapidly multiplying world-population.

Her great fear was a total war, which she knew could and probably would mark the end of civilization if not of the human species. One of her most impressive bodies of poetry, the sonnet sequence "Epitaph for the Race of Man," published in 1934 in the volume "Wine from These Grapes," presents a stark, forbidding picture of an earth stripped of man and his works and of most other living things besides. True, she realizes, there are cosmic forces that will produce the same result, but these poems are a plea and a warning to the peoples of the world to cherish the existence of the race and not cut it short by their own folly. Let nature, not man himself, terminate life on this planet.

Had the poet no hope, she probably would not have bothered to sound her warnings. Yet the words of the poems convey little or no confidence that humanity will escape self-annihilation.

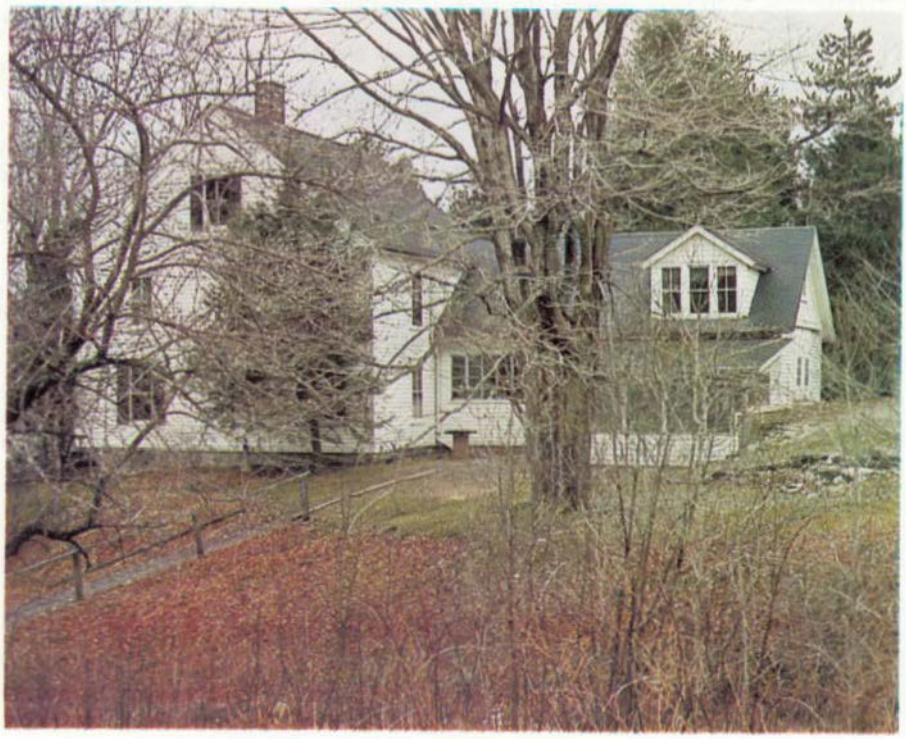
O race of Adam, blench not lest you find
In the sun's bubbling bowl anonymous death,
Or lost in whistling space without a mind
To monstrous Nothing yield your little breath;
You shall achieve destruction where you stand,
In intimate conflict, at your brother's hand.

A poet's or any artist's ultimate function is to sharpen his or her fellow beings' awareness of the beauty, the significance, and even the weakness, the sickness, the ugliness of the world and the civilization in which they live, and thus to assist them in achieving a more fulfilling and a saner existence. On her hilltop farm Edna Millay experienced to the point of ecstasy the beauties of the natural world, but also from her hilltop she could discern all too clearly the gathering clouds of war, the summation of all evil. Both the local beauty and the remote ugliness found a place in her poetry, and she hoped the contrast would teach its own lesson.

It is now almost twenty-five years since Edna Millay lived at Steepletop. She died alone there one early October dawn while ascending the stairs after a night spent in reading and revising the proofs of a friend's book. Steepletop is now occupied by her sister, Norma Millay, and her husband, the artist Charles Ellis. Norma Millay, an accomplished actress and opera singer, is the able editor of the "Collected Poems of Edna St. Vincent Millay" and her oral readings of her sister's verse are justly famous.

The house and grounds of Steepletop recently designated a national historic landmark, remain very much as they were before the poet's death. It is a place designed by nature for artistic creativity, and present indications are that it will continue to serve that function for a long time to come. Already Norma Millay and her husband are far advanced in establishing there a retreat for artists and writers similar to the McDowell Colony at Peterborough, New Hampshire, or Yaddo at Saratoga Springs. A corporation has already been formed and funds are being gathered. Those lovely acres could be put to no better nor worthier use, nor could a more appropriate memorial be conceived for the great poet who once lived and wrote there.

Steepletop today Photo by Arlen Westbrook



From Field to Table —

A short guide for cooking game

by Carol J. Fullum

Photos by John Goerg

MY family and I look forward to the many fine game meals we will enjoy during the winter. During the year while meat prices soared and beef was in short supply, I was able to provide a variety of tasty meals from small game and game birds. Because there are many husbands (and some wives) who enjoy hunting, I offer a few recipes and tips on cooking small game and game birds.

The enjoyment of game meats begins with proper cleaning. My husband field dresses small game immediately so that if the shot has pierced the organs, he can remove it before the meat has a chance to become tainted by the strong enzymes. Then when he gets it home, he skins it and carefully removes all visible fat and hair from the meat. Any fat left on the meat will give it a strong taste. When the meat is well cleaned, I soak it overnight in salt water to draw the blood. This having been done, the meat is ready to cook or freeze for later use.

Since small game and game birds have a tendency to dry out and toughen very easily when cooked, most of my recipes consist of stewing or braising to keep the meat moist and tender. In addition, chicken can be substituted in all my game recipes for the benefit of someone in the family or a dinner guest who will not eat game. Mixing small game or game birds with chicken does not alter the taste of either, and it saves having to cook two meats separately.

The following recipes are family favorites. The sauces and gravies are all quite different and I serve them over white rice, wild rice, mashed potatoes or noodles.

Foreground, rabbit cacciatore; background, braised pheasant

RABBIT CACCIATORE

2 rabbits (cut up)
salt and pepper to taste
oil
clove of garlic
½ cup of sliced onions
½ cup of chopped carrots
2 tablespoons parsley
1 cup of ketchup
1 cup of water
1 bay leaf
2 tablespoons dry red wine

Salt and pepper the rabbit and brown in a small amount of oil. Combine the remaining ingredients and pour over the rabbit. Simmer, covered, 1½ hours. Serves 4-6.

SQUIRREL STEW

2 squirrels (cut up)
1 teaspoon salt — divided
½ teaspoon pepper
4 tablespoons butter
2 tablespoons flour
½ teaspoon each of thyme and rosemary
1 teaspoon sugar
2 tablespoons lemon juice
1½ cups of water
several small onions
½ pound fresh or canned mushrooms

Sprinkle squirrel with half the salt and all of the pepper. Brown in butter in a heavy skillet or dutch oven. Remove squirrel and add flour, herbs, sugar, and remaining salt to drippings. Stir to a smooth paste. Add lemon juice and water. Cook, stirring constantly, until mixture comes to a boil. Add squirrel and onions. Cover. Simmer until tender, about 1 hour. Thicken gravy and add mushrooms. Cook an additional 10 minutes. Serves 4-6.

BRAISED PHEASANT OR GROUSE

2 pheasants, quartered
flour
salt and pepper to taste
butter
8 small onions
5 stalks celery
thyme, marjoram and parsley to taste
1 cup red wine
1 cup chicken stock
1 can mushrooms

Shake pheasants in bag with flour, salt and pepper. Brown in heavy skillet in butter. Place on rack in dutch oven, heavy skillet or roaster with onions and celery. Sprinkle herbs over birds. Add wine and stock. Simmer, covered, for 1 hour. Add mushrooms. Increase heat and cook for 10 minutes. Serves 4-6.

ELDERBERRY-APPLE PIE

Roll out pastry dough for a 9 inch, double crust pie.

1½ cups elderberries
3 cups apples
1 cup sugar
3 tablespoons flour
1 teaspoon lemon juice
1½ tablespoons butter

Mix elderberries and apples together. Add sugar and lemon juice to filling. Dot with butter. Sprinkle milk and sugar on top crust. Bake 10 minutes at 450°, then reduce to 350° and bake for 30 minutes more.

WILD BLACK RASPBERRY PIE

Roll out pastry dough for a 9 inch double crust pie.

4 cups wild black raspberries
⅞ cup sugar
5 tablespoons flour
½ teaspoon cinnamon
1½ tablespoons butter

Place raspberries in crust — cover with sugar, flour and cinnamon. Dot with butter. Sprinkle milk and sugar on top crust. Bake 10 minutes at 450°, then reduce to 350° and bake for 30 minutes more.

A lovely table setting makes the food taste even better.

by L. H. MacDaniels

Nut Trees of the Northeast

AMERICAN CHESTNUT

EARLY settlers in the northeastern United States found a country well supplied with nut bearing plants. Most important of these undoubtedly was the chestnut which was abundant in the hardwood forests over a wide area and which, in addition to its use as food, furnished easily-split logs for rail fences and tannin for making leather. Then there was the butternut, hardiest of the nut trees, which furnished dye for homespun woolen cloth. Several species of hickory (then called walnut) were useful as food and for their very tough wood which, to this day, has no equal for axe and other tool handles. Two kinds of hazels or filberts flourished reminding settlers of the filberts they knew in England and throughout Europe. In the forest beechnuts and many kinds of oaks furnished food for wildlife particularly for squirrels, turkeys and the ill-fated passenger pigeon. In New York and westward the black walnut was prized not only for the food value of the nuts but also for its timber unexcelled for making furniture.

Such was the heritage of the Northeast in nut bearing plants. Obviously great changes have occurred: first, the clearing of the land for agriculture and then the rapid urbanization in the last few decades. At the turn of the century nut trees were prized highly enough to preserve them on the farm, in the cultivated fields and along fence rows. With the mechanization of the farms, the fence rows and these outstanding trees have been eliminated, destroying the habitat that supported the turkeys and passenger pigeons. The latter is now extinct; the turkey fortunately, by careful management, may be coming back.

The most tragic event in the destruction of our nut tree resources was the practical extinction of the American chestnut by the chestnut blight. Although it was not so important to our economy as the European chestnut in some Italian villages, the American chestnut was recognized as the most valuable tree over a wide area of the eastern United States. The abundant nuts were prized locally but perhaps more important, at one time, the wood was a valuable source of tanning material and found extensive use as lumber, fence posts and furniture. The cut trees sprouted freely from the stumps renewing the cutover forest in a short time.

The chestnut blight, caused by fungus, appeared in the New York area about 1905. The disease spread rapidly up the Hudson Valley into New England and Pennsylvania and within two or three decades had covered the chestnut's natural range. The old trees were killed to the ground and because of the durability of the wood stood for many years as a gaunt reminder of the destruction. Much of the dead timber was salvaged for veneer backing. The blight fungus does not kill the roots of the trees which send up sprouts that may grow to a diameter of about six inches and then become infected and die back only to sprout again from the base. Occasionally these sprouts become large enough to bear a few nuts and some seedlings are raised. However, to date, no convincing evidence of marked resistance or immunity to the disease in the American species has been found. Research with the Chinese chestnut has developed orchard type trees that, although not immune, are sufficiently resistant to the blight to make productive orchard trees. Some progress has also been made in securing timber type chest-

WHITE OAK

Wood product drawings done at Farmers' Museum, Cooperstown, N.Y.

nut trees. The Chinese chestnut is injured by temperatures of about −20°F. so satisfactory growth is limited by this factor.

The other native nut trees have persisted within their natural range in the woodlots, forests and abandoned agricultural land. Mainly, through the efforts of the Northern Nut Growers Association founded in 1910, trees bearing nuts of superior cracking quality have been located and propagated. With most seedling nut trees the kernels are extracted with such difficulty that their recovery is hardly worth the trouble. With some of the named varieties, however, it is possible to recover the kernels of the butternut, shagbark hickory in halves and black walnut in quarters. To date, with the exception of the hazelnut, the improved varieties have been selected from wild seedlings with little attention to purposeful plant breeding. With native hazelnuts, crosses have been made with the European species to secure hardy plants with large-sized nuts.

By far the most valuable of the native trees in North America is the pecan. There are two types, a southern type, requiring a long growing season adapted to Georgia and the Gulf States, and a northern type extending northward into southern Ohio, Illinois and Iowa. The limiting factor is not winter hardiness but lack of total heat or growing degree days. In New York the trees are hardy but do not mature nuts.

A deterrent to the widespread use of grafted trees is the difficulty of propagation. The hickories and walnuts have very large taproots which make the production of nursery stock difficult and expensive. At the present time the number of clones of grafted trees available from nurserymen is limited to relatively few of the many varieties that have been selected and named. The result is that to obtain a wide selection of varieties, growers establish seedling trees and top graft them to named clones obtained from members of the Nut Growers Association.

In addition to the native nut trees of the Northeast, other species have been introduced. The most important of these is the Persian or English walnut. Prior to 1930, attempts to grow trees of this species (*Juglans regia*), mostly of French origin, were unsuccessful in the Northeast because of lack of hardiness. In the years 1932-36 seed nuts were brought to the United States by the late Rev. Paul Crath from the Carpathian mountains where the trees endured winter temperatures of −35°F. or lower. These seed nuts were widely distributed by the Wisconsin Horticultural Society. The seedlings from these nuts are now known as Carpathian walnuts and are grown in the Northeast and Midwest, particularly Michigan. Although these trees are rarely injured by winter cold, many start growth early in the spring and are caught by late frosts.

Another import is the European filbert, now grown commercially in the Pacific Northwest. Although the European species has not grown satisfactorily in the Northeast, hybrids with the native species have been developed that are winter hardy and produce nuts of good size and quality.

Asiatic walnuts are also grown in the northeastern states. The Japanese or Siebold walnut makes a spreading tree with large leaves that give it a tropical appearance. The nuts resemble butternuts in shape and roughness and are difficult to crack. A sport of this species, the heartnut, has a smooth shell, cracks easily and is preferred for planting.

The question is often raised as to the feasibility of developing a commercial nut industry in the Northeast. To date, this has not seemed practicable when labor costs and land values are considered. The kinds of nuts that can he grown in the north do not produce sufficient volume to compete with areas where conditions are more favorable. Also there are too many unanswered questions as to culture, pest control, pollination, varieties to plant and similar problems. Some farmers with roadside stands have a special market which will pay a premium for superior varieties of walnuts or for kernels of hickory or butternuts. Otherwise there is no premium for superior varieties, and prices are fixed by the supply from wild trees. However, growing nuts makes an excellent hobby for anyone interested in growing things. For those with only a small city or village lot, nut trees should be planted with caution, bearing in mind that most of the trees are large and will take over a small garden. The nuts produced may be a problem if they are not wanted for cracking.

Nut trees have their best use where there is sufficient room for them to grow and where the product is wanted. Nuts are a highly nutritious food and are prized for their flavor in all manner of baked goods, confections and vegetables.

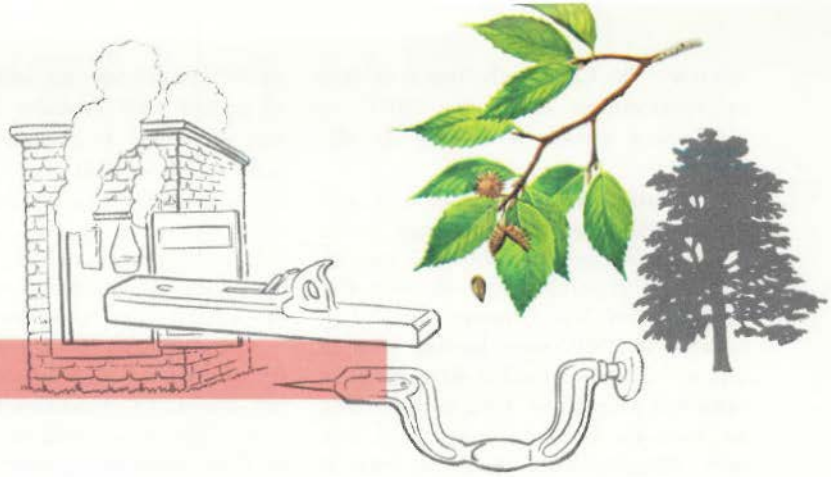
BLACK WALNUT

HICKORY

State of New York, Department of Environmental Conservation

The gardener can grow his own supply of this luxury food and at the same time have trees of outstanding beauty for shade.

Some kinds of nut trees need cross pollination to produce crops. Filberts, chestnuts and some kinds of hickories should have two varieties planted near each other. Persian walnuts and black walnuts are not technically unfruitful but will bear better crops if several varieties are planted close together.



BEECH

In the past few years much emphasis has been given to food shortages the world over. Here in the United States there are thousands of acres of unmanaged woodland that are producing very little food which might be developed into an important food resource. This idea has been developed by the late J. Russell Smith in his book "Tree Crops, A Permanent Agriculture." The basic idea is that rough land and land subject to erosion can be planted to food producing trees that would, directly or indirectly, greatly increase our food supply and protect the land from erosion. The nut trees, including the oaks and fruit-bearing trees such as persimmon and mulberry, are well adapted to produce food and forage. Land management to promote such use deserves serious consideration though at present, it probably would not be feasible or profitable as private enterprise. In the long run, developing tree crops for a permanent agriculture may be very useful as a food source or even for survival. At the present time amateurs might develop projects along this line as a hobby interest if not for profit.

Nut trees have their share of pests and diseases. In any commercial planting control measures would he necessary. In the home planting it is not feasible to spray large trees. In many situations the chief competitors for the nut crop are squirrels, jays and crows. The squirrels and jays are particularly troublesome with filberts which mature early in the season when other food is scarce. Black walnuts usually are not taken until the nuts have fallen from the trees. In any case the amateur grower with trees of several kinds of nuts can, with reasonable care, expect a rewarding supply of nuts for his efforts.

AMERICAN HAZELNUT

It is obviously impossible to give complete information regarding hardy nut trees here. Our present knowledge has been summarized in the "Handbook of North American Nut Trees" available from the Northern Nut Growers Association, 4518 Holston Hills Rd., Knoxville, Tennessee 37914. Although commercial planting of hardy nut trees is not recommended in the Northeast, planting nut trees is to be encouraged as a hobby that will provide a supply of nuts for home use, shade, where shade is wanted, and interest in preserving our heritage of nut producing plants. Preserving and developing this resource in the long run may he the most important of all.

BUTTERNUT

Rockwell Kent's Adirondack Years

From "This Is My Own" by Rockwell Kent
Duell, Sloan & Pierce. Copyright 1940

HEREWITH we offer a portfolio of the later work of Rockwell Kent, a native of New York State who earned a worldwide reputation through his paintings and illustrations, and through his books on travels to far corners of the globe.

He was born in Tarrytown Heights on June 21, 1882. He studied architecture at Columbia University but turned early from that profession to study painting under William Merrit Chase, Robert Henri, and Abbott Thayer. To him the appeal of nature, rural life and the sea was always strong. Two of his rural Vermont scenes —the Road Roller and Mount Equinox—painted about 1920, are considered classics. Although he bought his farm, "Asgaard," in AuSable Forks in 1928, the next years were spent in travel and writing— to Tierra del Fuego in a small boat, to Newfoundland, Alaska and Greenland. He was a prodigious illustrator, producing drawings for Melville's Moby Dick, Chaucer's Canterbury Tales and a volume of Shakespeare. His own books included Wilderness, 1920; Voyaging, 1924; N by E, 1930; This Is My Own, 1940; and It's Me O'Lord, 1955.

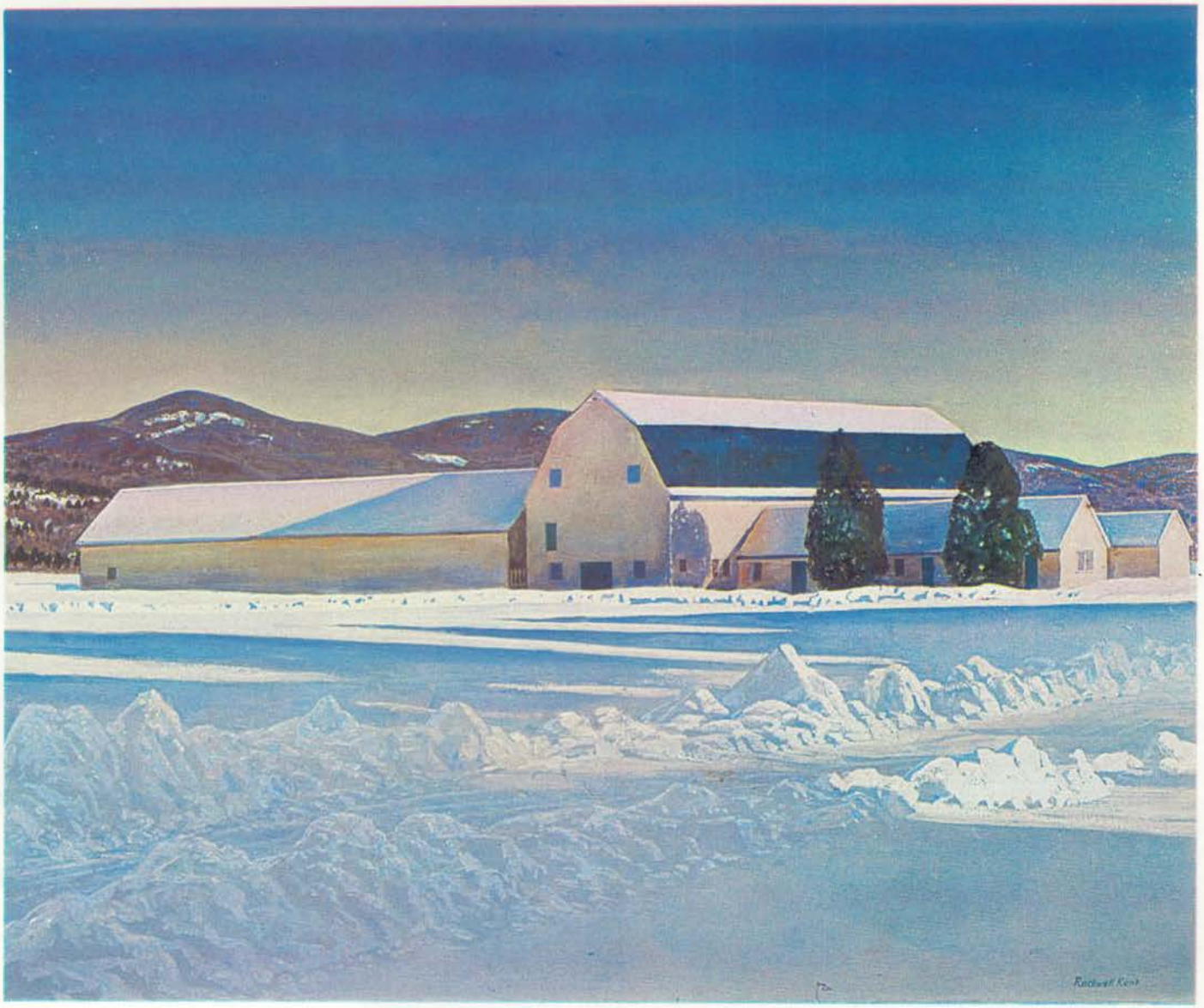
In the early 1940's after Kent had established year-round residence at AuSable Forks, he launched a new career as a dairy farmer. Always a strong individualist who made no secret of his socialist beliefs, he became a controversial figure in the community. When in 1948 he announced his support for Henry Wallace, candidate for President on the Progressive Party ticket, he found customers for his retail milk sales dwindling, and he was forced to abandon this project as a livelihood. Moreover, under the political climate of the Cold War period there was virtually no demand from the galleries or publishers for his remarkable talents. But he continued to paint, especially the dramatic landscapes of the mountains and verdant valleys of the Adirondacks he loved so well. On March 13, 1971, he died of a heart attack in a Plattsburgh hospital at the age of 89.

People will differ as to the political role and the philosophical beliefs of Rockwell Kent. But the almost unanimous judgment is that he was a great artist. He left to the world a rich heritage of art, infused with Walt Whitman's love of mankind, Melville's sense of man's courage, and Thoreau's identification with the natural world.

This portfolio is representative of Kent's Adirondack years. It is presented here through the courtesy of John and Sally Kent Gorton, executors of the Kent legacy. — R.F.H.

Rockwell Kent

The first painting



Asgaard Winter, 1966

Snow Laden Pines, 1967

Golden Fall, 1955

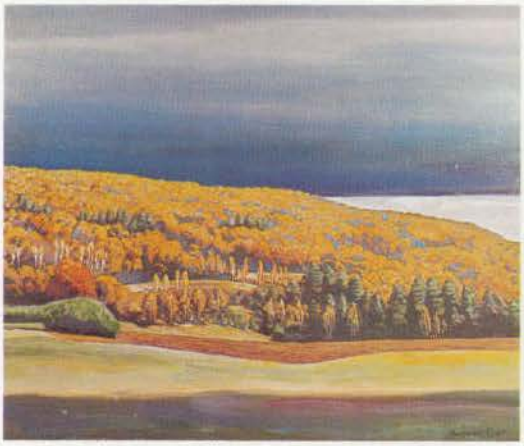
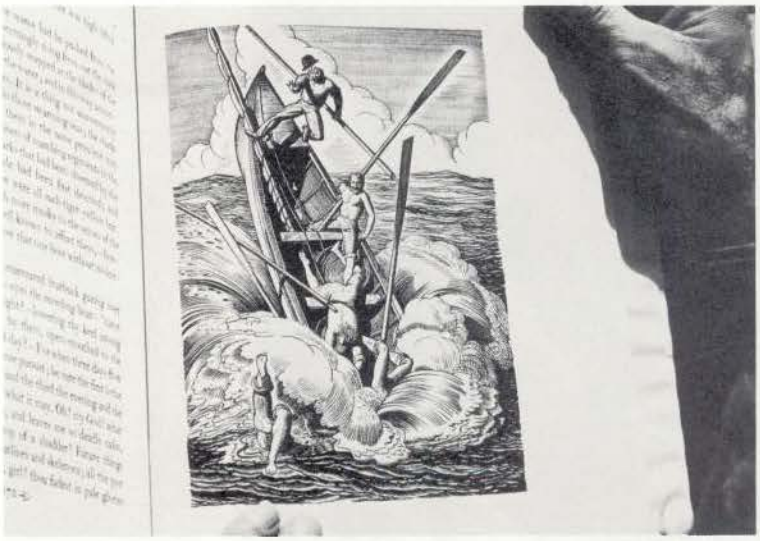


Plate and sugar bowl

Tapestry curtains

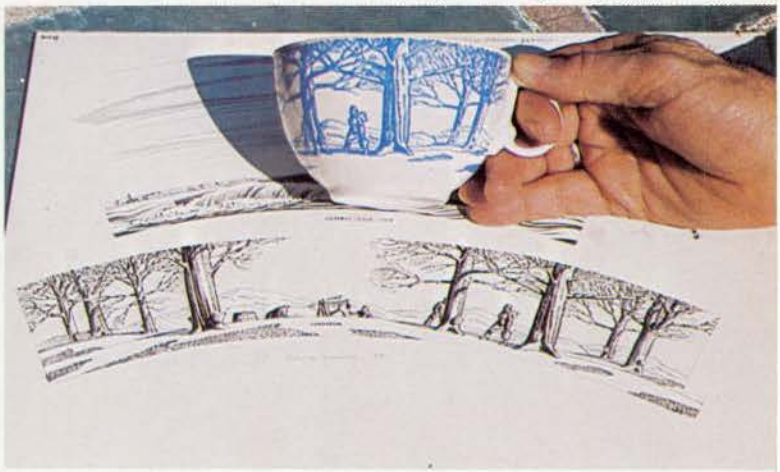


From the Modern Library Edition of Moby Dick

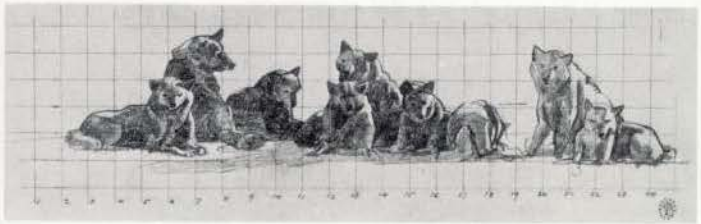
Captain Ahab as depicted for the Modern Library Edition of Maby Dick

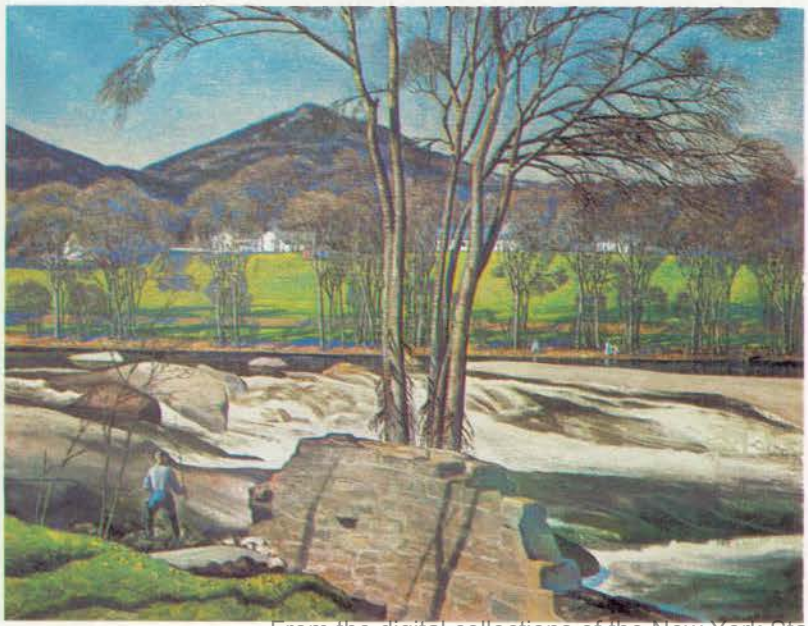
Plate, saucer and sugar bowl

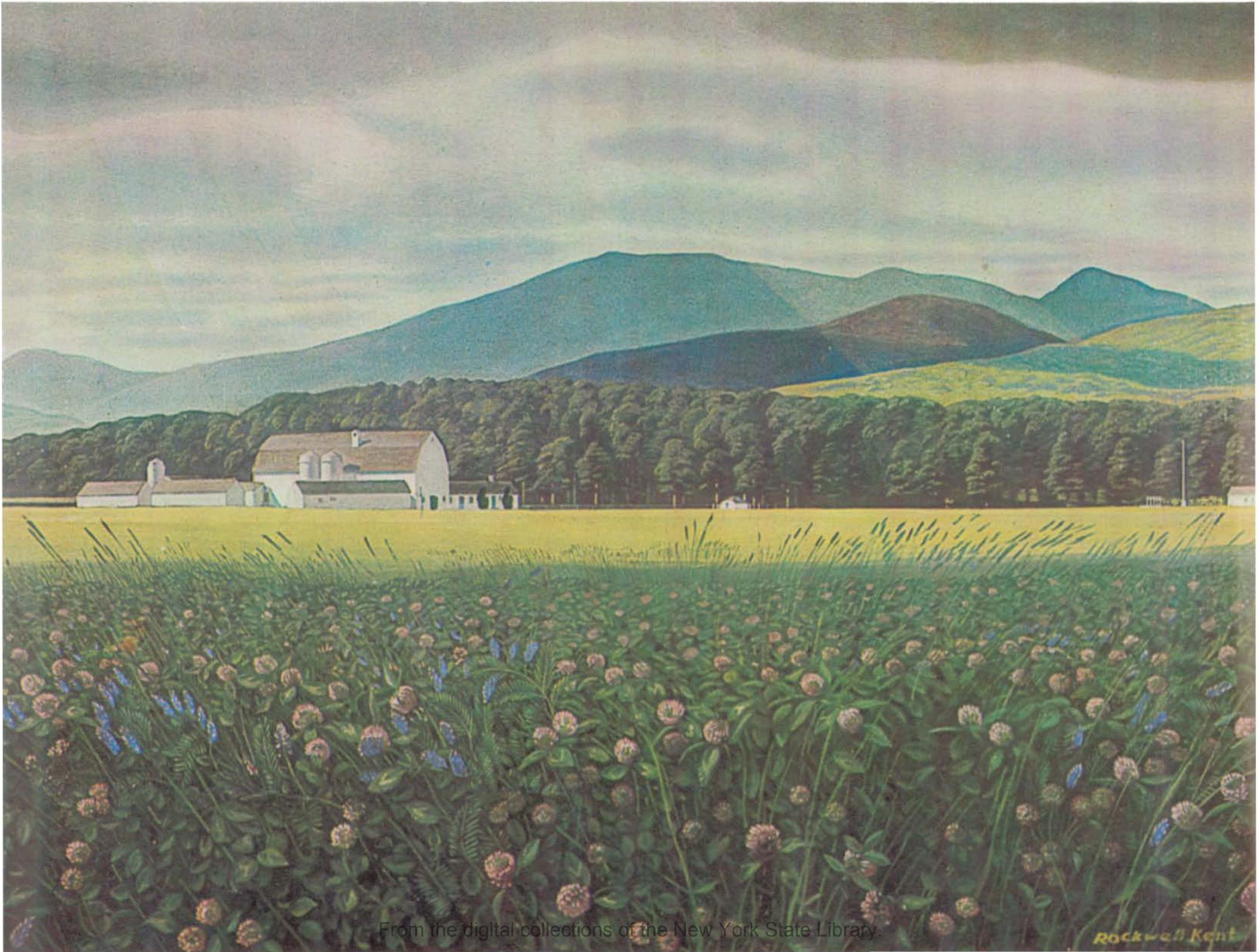
Finished cup with original design



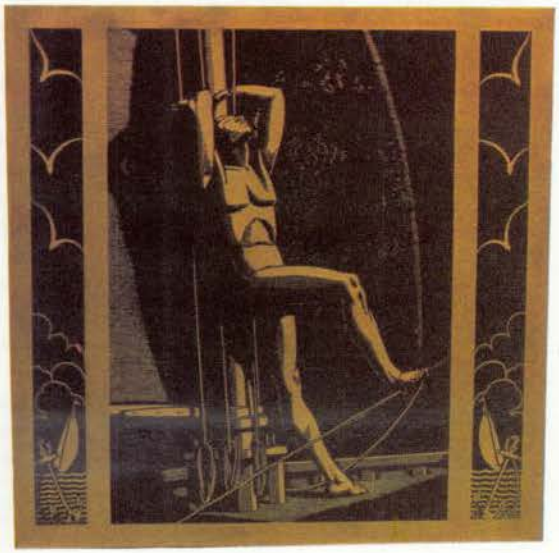
Ceramic tile







Above, Asgoord Cornfield, 1945; opposite poge, Clover Fields, Asgaard, 1940 (Amherst College Collection; Gift of Mrs. Robert A. Arms in Memory of Robert A. Arms '27)



by Douglas Roscoe
and
George P. Howard, Jr.

The Face of Famine

Starvation at the Great Swamp National Wildlife Refuge

This article by Roscoe and Howard documents the necessity for control of deer populations to prevent their starvation or malnutrition when their requirement for nutrition exceeds the supply available in the winter habitat. This has been the theme of my series of articles on deer management. What occurred in New Jersey's Great Wilderness Swamp is an annual possibility in about two-thirds of the deer habitat in New York.

The State Legislature's authorization for the Department of Environmental Conservation to manage the state deer herd terminates December 31, 1974. To prevent the recurrence in this state of what happened in New Jersey, it is essential that this authority be renewed in 1975. — C. W. Severinghaus.

THE Great Swamp National Wildlife Refuge, located in northeastern New Jersey just 35 miles from New York City, had the potential for being a lasting tribute to scientific wildlife management. Tragically, in the spring of 1974 famine and disease swept the Great Swamp deer herd.

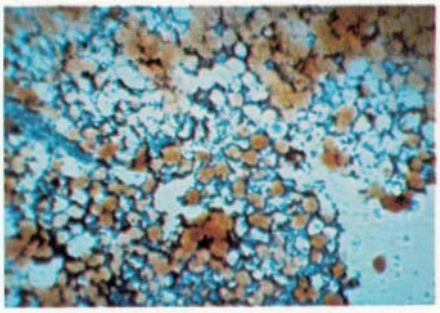
During the 1960's, land consolidation and strict posting of the refuge afforded increasing protection to the previously hunted deer herd. By the end of the decade these efforts proved so successful that the deer population became excessive — approximately 450 on the 6,000 acre refuge, 50 percent of which is under water. There was evidence of heavy browse damage and landowners whose property immediately bordered the refuge, complained of severe damage to their ornamental shrubbery. Also, deer-car collisions were steadily increasing on or about the refuge. All signs pointed to an overabundance of deer.

In May of 1970, local residents, personnel from the Great Swamp Refuge and biologists from the New Jersey Division of Fish, Game and Shellfisheries met to discuss the situation. The outcome of the meeting was a proposal to throw open the refuge for a hunt to control the deer herd. It was feared that if this density were not reduced by hunting, starvation and disease would break out in the herd. Most participants in the meeting were in favor of the hunt, and a date, December 19, 1970, was chosen to coincide with the state's regular either-sex hunt.

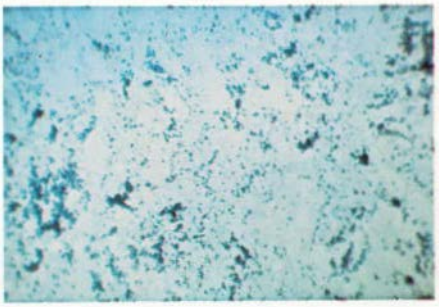
Several environmental groups protested the hunt. Among these were D.E.E.R. (Deer, Environment, Ecology, Resources), a group formed specifically to fight the hunt at the refuge. They were joined by the Friends of Animals, a New York City group, which protested the "free-for-all deer kill" which was to be allowed on the refuge because of pressure from "sports hunters . . . under the guise of saving the deer by killing them." Some local radio stations made extravagant claims that over 1,000 hunters would be turned loose on the refuge to kill over 500 deer. The volume of misinformation of this sort became so great that refuge and state authorities could no longer keep pace issuing denials.

The whole debate finally boiled down to two basic arguments. First, if the deer are really starving, why not just feed them and be done with it? Second, and more important, if the deer really needed to he killed, who should do the killing? Opponents of the open hunt felt that only professional warden-hunters should be used and that the malnourished and the old deer should be systematically culled from the herd, thus more closely simulating natural selection in which only the

Bone marrow of a healthy deer
Fat globules are stained orange
Photo by Donald Slingerlands



Bone marrow of a starved deer
Fat globules are entirely depleted
Photo by Donald Slingerlands



Starvation has killed many of his kind in the Great Swamp

Photo by Robert Demetry

fittest survive.

The answer to the first objection is that starvation in wild deer populations usually strikes the younger animals first because the limited man-provided feeding sites are vigorously defended by the older dominant deer. Defense of a feeding site is a major reason for failure of winter deer feeding programs. In New York, for example, winter feeding caused excessive concentrations of deer and did not provide enough artificial food to adequately nourish the numerous deer pulled in as a result of the free handout (Hesselton, THE CONSERVATIONIST, December-January, 1964-65).

As to the second objection — that is, the use of professional hunters, the answer is that it is economically wasteful to pay wardens to hunt deer when sportsmen are not only able and eager to perform the same function for free but can do the job just as well. No warden is professionally trained to be a good hunter. Moreover, natural selection is simulated by the sport hunter in that only the most wary and alert deer will avoid detection and survive to propagate. The discussion over who should do the deed apparently stems from a philosophical argument over whether hunters should derive pleasure from hunting.

On December 14, 1970, just four days prior to the scheduled hunt, the U. S. Humane Society filed suit against the hunt in Federal District Court in Washington, D.C. The Humane Society contended that the hunt was illegal in that it conflicted with sound wildlife management principles and violated regulations established by the Department of the Interior. A second argument was that turning "amateur" hunters loose would wound many animals. The answer to these objections was that the regulations cited by the Humane Society were those of the National Park Service, not the U. S. Fish and Wildlife Service whose responsibility it is to manage the refuge. In answer to the second contention, statistics on deer hunting in New Jersey indicate the wounding loss among deer is less than five percent of the total harvest.

Unfortunately, the government was forced to spend more than 100,000 conservation dollars to fight the suit, and during the three-year delay the deer herd on the refuge increased by 200 to 650. After the court decision, plans were again made to reduce the deer herd by 250 animals through a controlled hunt to take place in December 1973.

Very little objection to this hunt came from the media and it seemed as if the hunt would finally take place. However, on December 7, 1973, D.E.E.R. and Wildlife Preserves, Inc. (an organization owning land next to the refuge) filed for a restraining order, which was granted on December 9 by Judge Frederick B. Lacey of the U. S. District Court in Newark, New Jersey. The basis of D.E.E.R.'s case was the failure of the U. S. Fish and Wildlife Service to issue an environmental impact study.

In the meantime, the deer on the refuge are writing their own environmental impact statement. They are dying of starvation for the first time in the history of the refuge.

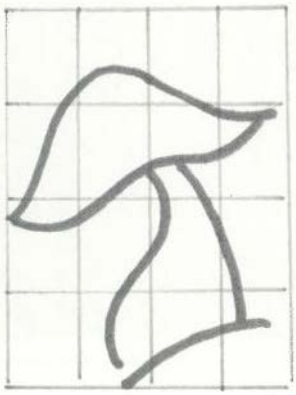
Because death is slow and attended by disease, starvation is a cruel death. Sugar reserves produced and stored in the deer's liver are used up, and then fats and muscle protein are burned. Fat is first depleted from about the kidneys, under the brisket and around the heart. Finally, it is removed from the thigh bone marrow which becomes red and gelatinous rather than white and waxy. The emaciated appearance of a starving deer is due to depleted muscle protein. Ultimately the heart muscles and the muscles of the arteries become so weak that death results from circulatory failure.

Starvation is almost always accompanied by other disease. In August and

(Continued on page 45)

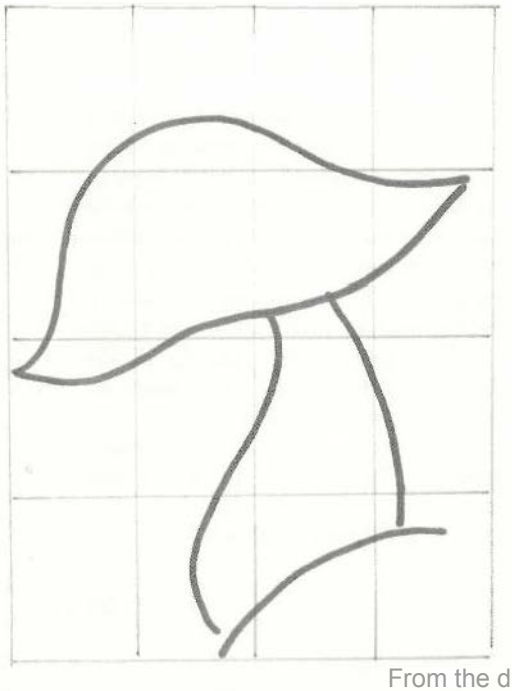
From Print to Pattern

by Maryel Clare



SQUARE DESIGN PATTERN

Mark off squares over the design to be reproduced, using ⅛ inch squares for small designs, and ¼ inch, ½ inch, or 1 inch squares for proportionately larger designs. Make the some number of squares for the enlarged design. Copy the outline for the design from the smaller squares to the corresponding larger squares. To reduce the design, reverse the procedure.



IF you have ever had a desire to duplicate in needlepoint an illustration from a book or from a magazine such as THE CONSERVATIONIST, here is a good method of getting it on your canvas. For those of you who can make your own sketches, the information about actually working with the canvas will be all you need. But if you are one of that great frustrated mass who can't even draw a straight line, these basic instructions should enable you to work your own needlepoint designs with a minimum of frustration.

Assemble the following materials:
Needlepoint canvas (instructions about which type to use will follow)
Waterproof marking pen, gray or black
Tracing paper
A large sheet of plain white paper
Masking or adhesive tape — at least 1" wide
Acrylic paints (Start with the primary colors of red, yellow and blue. Then add to your assortment as you do more work.)
Nylon bristle brushes — small, medium and large
Pencil, eraser, ruler

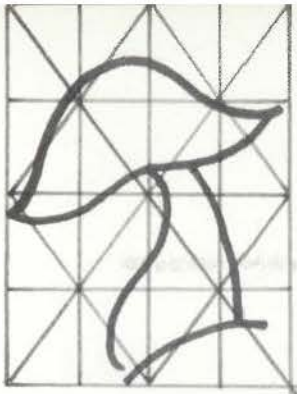
Once you have selected an illustration to reproduce in needlepoint, you will have to decide on the size of your pattern. If you are going to make it the same size, then trace the illustration directly onto tracing paper. But if you want to enlarge or reduce the size of the pattern, then take the illustration to a photostat shop and ask them to make a positive "stat" to the exact size you want.

Trace the photostat onto a piece of tracing paper with a fine-tipped black marking pen. Trace only those lines that give you the basic shape and form of your design. Try to simplify the design as much as you can — an absolutely realistic or naturalistic rendering is not necessary. This tracing must be of sufficient clarity so that when placed under the needlepoint canvas, the lines will be sharp enough to be seen through the canvas.

In selecting canvas, it is worth noting that today, most designs are worked on mono (single) thread canvas, which is quite satisfactory if you use the continental or the basketweave stitch. However, if you are going to do the half cross stitch or if you want to combine grospoint with petit-point, you will have to use Penelope canvas. The size of your canvas, i.e. the number of meshes to the square inch, will depend on your design — the more detail, the finer the mesh. Ten or 12 meshes to the square inch are good sizes for average work, but you may want to go to 13 or 14 to achieve greater refinements.

In preparing your canvas for transferring the design use a piece of canvas that is 4 inches longer and wider than your design area. This will give you a 2 inch margin all around your work. You will need this margin later on when you block your work. Try to keep the selvedge on the side of your design. Tape the raw edges.

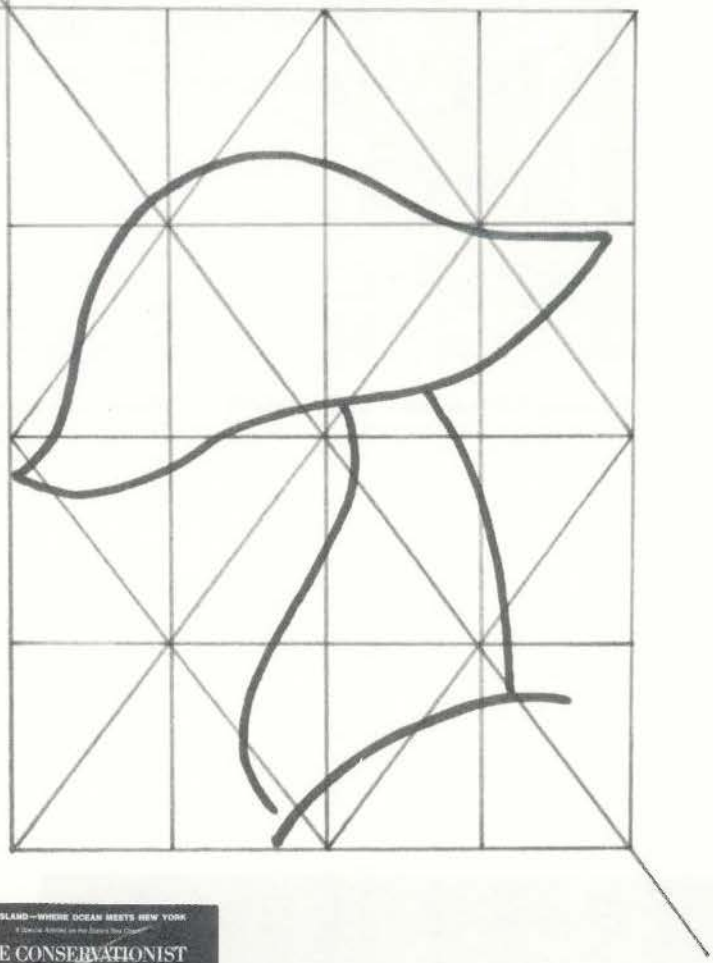
The first step in putting a design on the canvas is to cover your work surface with a large sheet of white paper to make your tracing easier to see. Lay the tracing on the white paper and secure it with tape on all four corners. Now lay the canvas on top of the tracing, and secure the canvas with tape at the top only since you may want to lift it to check out a detail of your tracing. Lightly trace the lines onto your canvas with your marking pen. (I prefer a gray marking pen. Make



To reduce, reverse the procedure. This kind of pattern enables one to check proportions quickly and accurately.

DIAGONAL DESIGN PATTERN

Draw a rectangle around the design to be enlarged. Then draw a diagonal line from corner to corner and extend that line far enough to form the diagonal of the enlarged pattern. Next, draw a rectangle around the enlarged pattern and, to locate the center, subdivide both large and small rectangles by drawing opposite diagonal lines. Now draw lines on both patterns to quarter the spaces. Copy the outlines of the design from the smaller area to the larger area.

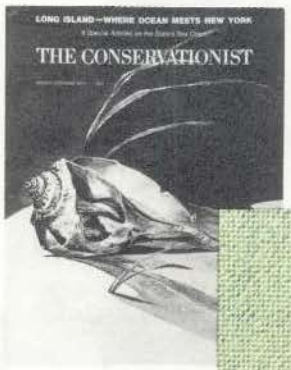


sure that the ink you intend to use is waterproof and will not "bleed.")

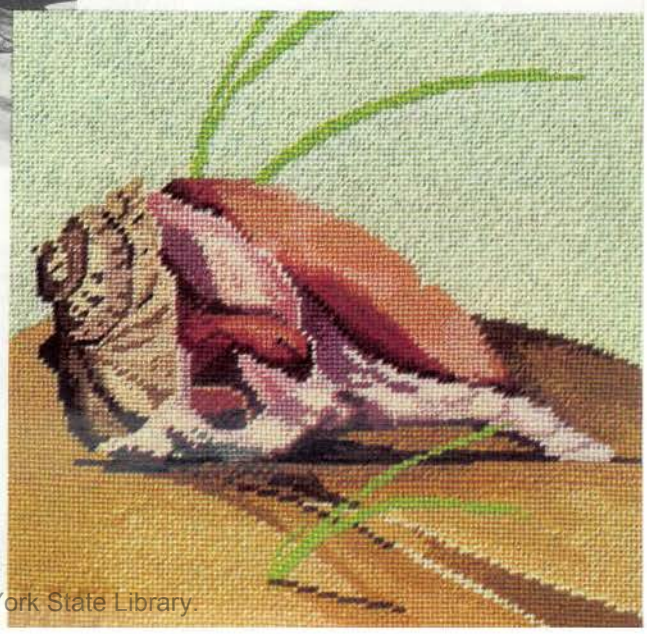
In painting the canvas some people prefer to work only with the basic outline, referring to the original illustration for their colors. However, a painted canvas is easier to work for most people, and eliminates constant checking.

I can't give enough stress to the importance of completely waterproof mediums. I have never found colored marking inks that haven't bled somewhat during the blocking process. A real tragedy can result at this point, especially if you have used light-colored yarns. If you do use these marking pens, I suggest you give the canvas a few light sprayings with an acrylic fixative.

Good acrylic paints have proved to be the most trustworthy medium because once dry they are completely waterproof. I have found the Liquitex and Hyplar brands the most reliable. Before they are dry, acrylics are water-soluble, so cleaning up is an easy process. Mix your colors in a small container with a lid — mixing cups with snap tops from an art supply store, plastic pill bottles, baby food jars. Put a small quantity of paint in the container and add water by the drop until it is the consistency of heavy cream. Too much water will buckle and shrink the canvas; too thick a paint will be difficult to spread and will clog the mesh. Once again, realism isn't essential. It is more important to have distinct color differences and to keep the intensity of the paints much further apart than you plan for them to be in the yarns. Your canvas will then be simpler to stitch. You will find that a little paint goes a long way, so don't overmix your colors. Since acrylics dry fast, your canvas should be ready to work an hour after painting.



From THE CONSERVATIONIST cover



to finished needlepoint

Photo by Wayne Trimm

State of New York, Department of Environmental Conservation

Snakes i

Snowsnake, a tradition

"Throwing the Snowsnake" by Ernest Smith Owner, Lillian Samuelson, Indian Art Treasures

SHOULD you visit some of New York's Indians during a snowy winter, you might be lucky enough to see a game of snowsnake. It is played today much as northern Indians have played it since before recorded history, and is a cultural tradition which involves personal skill, creativity, and competition.

The purpose of the game is to slide a flexible, polished 5 to 9 foot hardwood rod down a straight-line trough 10 by 18 inches deep marked on a level area of snow. Courses vary, the usual length being 1,500 to 1,900 feet. Incredible distances can be achieved. Dr. William Fenton of SUNY, Albany, tells of seeing a snowsnake travel more than a mile during competition.

Each participant makes his own "snake" from maple, walnut, or hickory with a 1½-inch upturned head, tapering to about a half-inch at the tail where a notch is made to provide a finger hold. Heads are sometimes realistically carved. Modern snowsnake heads are lead weighted to provide balance. The 5 to 9 foot body of the snake is smoothed and polished, sometimes ornamented by removing part of the bark

Playing a game of snowsnake

the Snow

l winter Indian sport

by **Naa-you-thaw-huh-tut-oit**

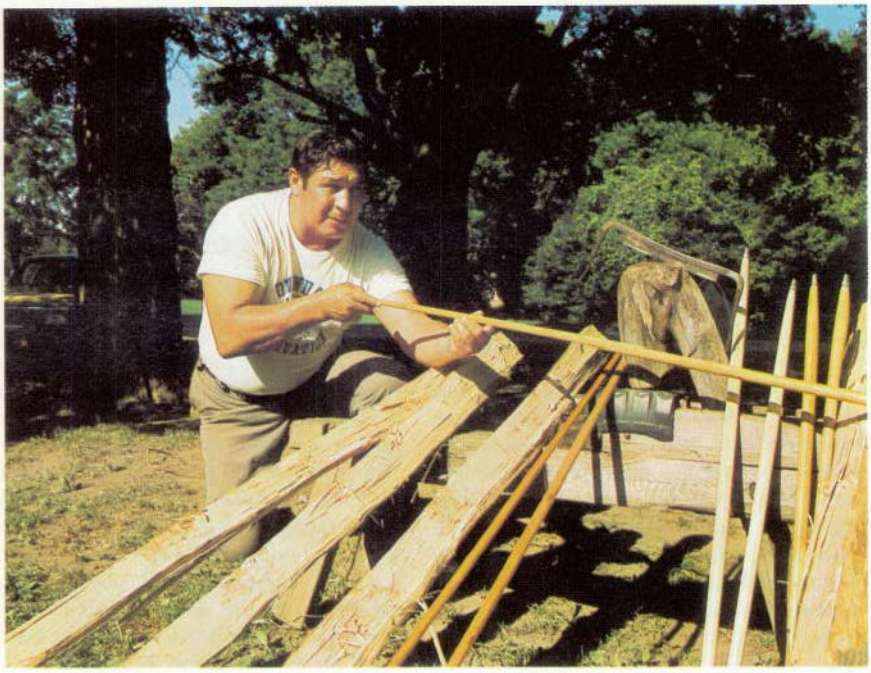


Photo by John Goerg

Fashioning a snowsnake. Edward Shenandoh of the Onondaga Reservation makes snowsnakes in his spare time.

in a pattern, then smoke-drying the rod before removing the remainder. Each snake is precision made.

Tradition says the course is laid out on a snow-covered level area by dragging a smooth log of 10 to 18 inches in diameter along a straight line, removing any obstructions, then sprinkling the trough with water to form an ice crust.

Players gather at one end of the course, taking turns at throwing the snake which is polished with oil or wax. Grasped by the notch at the tail, the snake is thrown — usually underhand or side-arm — down the icy track. Markers (sometimes the snake itself) are set up in the snow to indicate where each stopped sliding. Rules of competition vary, but the victor is the man or team achieving the greatest distance in a specified number of attempts.

Known as the national sport of the Iroquois, snow-snake competition seems to have been a part of the culture of all northern Indians. Plains Indians have a variation in which "winged bones" (a section of buffalo rib fitted with two feather stabilizers) is the projectile, and an overhand delivery common.

Seneca Reservation in Allegany County.

The black and white photographs were taken by Dr. William Fenton during the 1930's.

Your Questions Answered

conducted by Paul Kelsey

Bear Hunting

Please tell me which is the best bear hunting area in New York State.

The Rev. T. H. Rankin, Newark, NJ

The Adirondacks contains about 75 percent of the bear range in New York State, and has a bear population in the neighborhood of 4,000. It is without question the best part of the state in which to hunt bear. Within the Adirondacks, most of the bear taken come from Hamilton County. They do their best throughout the Adirondacks in the more rugged and inaccessible portions of the range.

Trout Appearance

What could cause the Pepacton brown trout to have such a silvery appearance totally lacking in "red" markings? Many I have caught have muted blue dots instead.

J. F. Cavano, Kingston

Brown trout living in deep large waters tend to lose the coloration of the typical stream trout and take on the silver appearance that you so well described. The presence of good trout streams flowing in may mean that not all the trout confine themselves to the open water, and those that make some use of the streams would retain their normal brown trout coloration.

Seed Storage

I have watched the blue jays pack away sunflower seeds. Where do they put so many?

Hazel W. Holland, Mansfield, Pa.

Blue jays are notorious for being able to stow away a great many sunflower seeds in their gullet, flying off and caching them away for future use, and returning immediately for another load. They can clean a feeder in short order. Watch one in profile as it stows away the seeds and you will note a slight swelling develop in the upper throat and under the bill. The seeds can apparently be retrieved individually or en masse.

Earwigs

For several years I have observed a small insect which looks like a miniature lobster or space monster, about one inch long when fully grown, elongated body with many legs, chocolate brown to black in color, and with a pair of convex pincers recessed on either side of the head which look very effective. The insect seems to thrive in moist, dark places such as under a piece of wood which has been lying in the grass for some time. We seem to be run over with these little creatures during the warm summer months, yet they disappear in the fall. If at all possible, would you identify this insect and tell me if his bark is worse than his bite.

Paul G. Kusara, Monroe

I think it is safe to say you are observing earwigs and that their bark is worse than their bite. They were given this odd name in the mistaken belief that they would crawl into the ears of sleeping persons. A closer examination will reveal that, like all true insects, they have six legs, and what you must have taken for the "many" legs included their antennae and palps on their mouthparts, and that the pincers are actually on the posterior part of the body. Earwigs are nocturnal, and during the day they seek dark moist places, just as you describe. They may do some damage by eating tender vegetation, fruits and flowers, but at the same time they also clear up decaying organic matter and feed on such slow moving things as snails and insect larvae. They can be very annoying when they invade the home, for they will hide under dishes, clothing or in crevices, coming out at night and running all over everything. Finding your first one under a cold cereal box could be a traumatic experience. There are special household formulations of Malathion which can be used for their control once inside. To prevent their invasion, spraying the foundation of the house with Diazinon, Carbaryl, or Malathion in the spring, or when invasions are anticipated, may be helpful.

Animal Attack

My wife witnessed something that baffles us. There was a flicker in the oak tree behind the house. A chattering chipmunk ran up the tree and pulled some handfuls of feathers out of it. The bird then flew in a zigzag fashion around the house, flying into the picture window. What could the chipmunk hope to accomplish? Are they competitors for food? Why didn't the flicker harpoon the chipmunk? Isn't it true that sick, weary or old animals in strange places invite attack?

Harvey H. Hawver, Philmont

I haven't the slightest idea why a chipmunk would run up a tree and attack a flicker. If it had been a red squirrel it might have been defending its nest or even its cache, but chipmunks use underground tunnels for these. In neither case would it have been because of competition for food. Some birds that have powerful bills, like the loon or great blue heron, use their bills very actively in defense, but most birds just pinch with them instead. I believe the latter is the normal reaction of woodpeckers. To say that weak animals invite attack is probably stretching a point, but it is safe to say that they are more susceptible to attack. I recall reading somewhere of a study of crows taken by a trained falcon. To the observer the crows appeared to be perfectly normal as the falcon picked them out of the flock, but upon autopsy, they all had something which would have put them at a slight disadvantage. It appeared that the falcon was able to perceive which birds in the group it was most likely to catch and turned its attentions to one of them.

Posting Waters

Could you clarify the public confusion over what waters may be posted by a landowner?

W. B. McCoy, Rochester

The first problem faced in determining whether a water may be posted is to determine its ownership by the deed. If the person posting owns both the bed and the shoreline, he has the right to prohibit the use of that body of water -- whether pond or stream -- for hunting, fishing, trapping, or trespassing by posting under Section 11-2113 (2) (e) of the Environmental Conservation Law. Often the deed will read to include "all lands and lands under water," but if the boundaries as shown on the deed include all the shoreline, the land under water is probably included.

This posting authority applies even where access may be obtained by paddling a canoe onto the water without touching posted land. However, it does not extend to bodies of water which are accessible by navigable water. In this case navigable water is generally defined as water which is used for commerce, and in some cases, waters which have been used to float logs.

Bioluminescence

About twenty years ago while camping with a group of 10-12 year old boys, we chopped down a dead tree making lots of chips. During the night I woke up to a terrifying sight, for the woods seemed to be on fire. All the chips looked like red coals, and the stump and cut ends of the log appeared to glow as though they were on fire. I couldn't believe it when I found they were cold. We took some chips home and found they would glow in the dark of a closet just as they did in the woods. Was this an unusual experience? I have never seen this again or talked with anyone who has seen it.

Leland Fanning, Morrisville

What you saw was an example of bioluminescence — the result of chemical processes that go on in plant and animal tissues and produce light. This is probably more common than we realize. I have run across it a couple of times just as you did. Since we do our chopping in the daylight and this shows up at night, there is no way we can tell how much we miss. There is one fungus which grows in wood which gives off a yellowish light, and there are luminescent bacteria that give off a kind of bluish light. Scientists have been fascinated by this for years and have studied it to try to find some way of producing light chemically without heat.

Floods and Deer

In the Oct-Nov 1972 issue of the CONSERVATIONIST *there was an article about the devastating floods that hit the southern tier that June. I would like to know the percentage of deer that were killed and what care was given the deer that survived?*

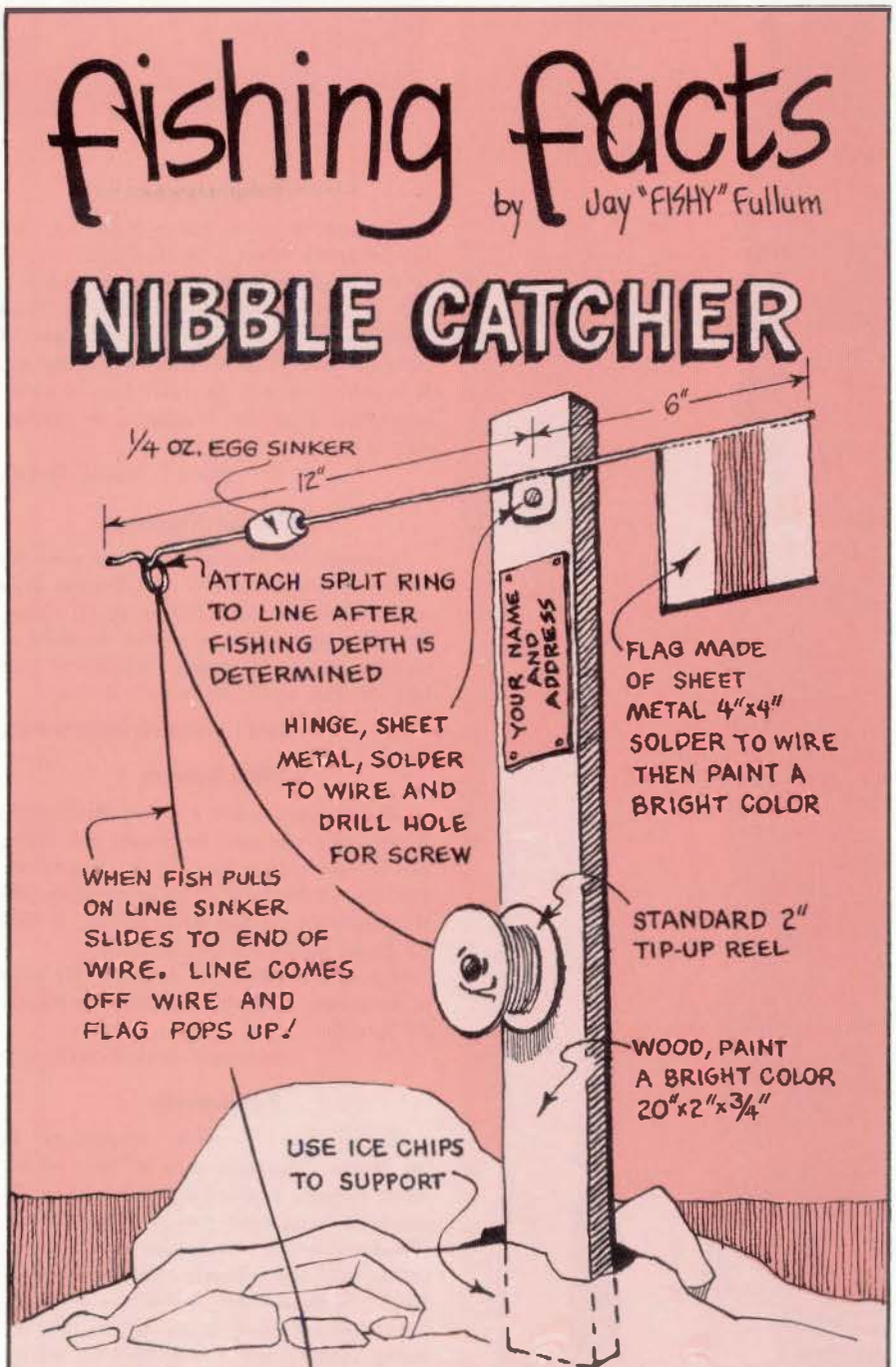
Robert McGuire, Ogdensburg

Photographers have made sensational stories about trapped wildlife by the rising water of newly created large impoundments because they make exciting human interest stories. Though rising flood waters of a stream or river may be disastrous to the small birds and animals, particularly the young, which have limited mobility, large animals like deer can readily move to higher ground and avoid the trouble. A handful of deer in the whole area may have been trapped on islands and swept to their death, but statistically they would have been but a trace of the population. Since only a small portion of any deer's home range would have been affected by floodwaters, no special care was needed.

fishing facts

by Jay "FISHY" Fullum

NIBBLE CATCHER



DROP LINE, THEN SET BY PUTTING SPLIT RING ON WIRE, SLIDE EGG SINKER UNTIL WIRE IS BALANCED. KEEP HOLE FREE OF ICE. GREAT FOR CATCHING BAIT NIBBLERS.

ASK THE EXPERT

As a service to our fishing friends, the expert invites questions on specific topics.

Do you have a question on fishing and equipment? If so, send it in to Jay "Fishy" Fullum.

THE CONSERVATIONIST
50 Wolf Rd., Albany, N. Y. 12201

Icicles: Photo by K. A. Wilson

LETTERS

Tidal power

Congratulations to Karen Magnuson Beil for the article "Switch on the Moon, Please" in the August-September issue. Implementation of the proposed Passamaquoddy Tidal Power Project has been studiously ignored since the onset of the current energy shortage. It is indeed the most desirable form of power generation from the standpoint of environmental impact.

Arthur F. Leiper, Chelsea

Noise at Niagara

I would like to give some very good advice to people planning to visit Niagara Falls in the summer or early fall. Bring ear plugs! Ear plugs are needed to protect the sense of hearing from the roaring helicopters that take off from and land on Goat Island.

Paul Gromosiak, Niagara Falls

1908 license

This morning I had a senior citizen come in the office who said he bought one of the first licenses ever put out by the department. His name is Edwin Watkins of Franklinville. He purchased a small game license in 1908 for $1.10, from Fred Bacon, clerk.

One dollar went to the state and 10¢ went to the issuing clerk. Mr. Watkins has hunted all his life.

Frances J. Bink, Franklinville

Porcupines

Earlier this year while camping out in the Hunter Mountain area of the Catskill forest preserve I was amazed to notice the unusually large number of porcupines about. Whether this was due to the mating season or the food and climatic conditions around Hunter Mountain was difficult to ascertain. Yet in an area less than one quarter mile my outing partners and I were able to spot no less than ten porcupines around dusk. During the night at a state constructed lean-to it was nearly impossible to sleep owing to the falsetto notes and squalling of these rodents as they went about their nocturnal activities. Closer inspections at sundry locations revealed girdled trees, and other timber showed traces of chewed bark, most likely attributable to the porcupine. I wonder if others have noticed the large porcupine population in this area, perhaps a missing fork or spoon or some morsels of food taken from one's campsite during the night might serve as alternate proof.

It appears that the natural primary enemies of the porcupine are all but absent in the Catskills, those being the bobcat, mountain lion, wolf and fisher. So one must wonder what is there to keep the porcupine in check other than natural death and disease. Further north in the Adirondack forest preserve a small but lethal enemy to the porcupine, the fisher, is making a splendid comeback in numbers. Although the fisher has no compromise with the habitats of man, he is adaptable to spruce forests and mountainous topography. Since the Catskills satisfies his last two needs as well as a healthy supply of porcupines to prey on, the transplanting of the fisher into this area might be an interesting experiment. At a time when the many parameters of the Catskill ecology are decreasing or falling into further imbalance, the addition of the fisher would certainly be welcomed.

Douglas A. Laubach, Chappaqua

Hungry sparrow

While walking down the street near a friend's house, I spied a small English sparrow hopping along the sidewalk with what I thought was a piece of green wool string to add to its nest. Even though it was quite late for nest building, I figured this one had had its nest damaged or something. I approached with caution and the bird did not fly away as sparrows usually do, but instead hopped only a few inches out of my path. I noticed that the bird had a praying mantis in its beak and was thrashing its head from side to side fiercely literally shaking the life out of the mantis! A woman walked past the bird, within two inches, and the bird refused to either fly away or drop the mantis. I watched the bird for about five minutes and all of this time the bird was swinging the mantis, stopping, looking for signs of life and then swinging it back and forth again.

I have seen small birds eating small insects but the mantis was at least as long as the body of the sparrow! In all my years I have never seen such a small bird with such a large meal! I imagine that a mantis must be a prized tidbit as I probably could have picked the sparrow up in my hand before he would have given up the insect, and then I doubt that he would have dropped it.

Irwin H. Baeder, Bronx

Against bounties

I am not a rattlesnake fan. Although I would not go out and deliberately kill one that is not in a crowded area, I would avoid it and leave it perhaps for food for a hawk or owl.

My objections to rattlesnake bounties are that it could be the first step to opening up bounties once again on bobcats, coyotes or others and it is a great waste of taxpayers' monies which could be put to much better use in cleaning up the environment.

Every study of bounty systems has shown that bounties do not work! The Environmental Conservation Law provides that the state or local government may, if necessary, employ professional trappers to control pest animals. To date, no one has been able to prove disease threat from rattlers, nor going back some ten years has there been any bona fide facts or proof of a death from a rattlesnake bite except one unsubstantiated report of a massasauga out near Syracuse.

More people die from bee stings. Would you put a bounty on bees?

Marcia Kent, Public Affairs Chairman
Albany County Audubon Society

We thank you

My heartiest congratulations to you and the staff of THE CONSERVATIONIST for winning the first place international magazine award from the American Association for Conservation Information. The AACI judges recognized what the readers of THE CONSERVATIONIST have always appreciated, "a solid, first-rate, readable, informative, above all intelligent job throughout." With every best wish for continued success.

Perry B. Duryea, Jr.,
Speaker of the Assembly

Congratulations on the naming of THE CONSERVATIONIST as the first place International Magazine Award winner for 1973. I believe that this honor from the American Association for Conservation Information signifies the outstanding work that you and your staff have been doing to keep the people of New York informed on these vital matters. I believe that THE CONSERVATIONIST magazine is a valuable source of information and provides entertaining reading for those interested in the advancement and improvement in conservation throughout the state. I look forward to more enjoyable reading during the current year.

Senator Bernard C. Smith
Chairman, Committee on Conservation and Recreation

Congratulations on your award! Just a few lines to tell you how much my husband and I enjoy your magazine. It gets better all the time.

Tell Mr. Trimm I love his Sketchbook. I wish I might have the opportunity to see the wonderful things of nature as he encounters them. Keep up the good work.

Bernice and Augustine Freeman, Turin

More on trapping

I usually borrow my father-in-law's copy of THE CONSERVATIONIST but have missed some issues. The two articles in your February-March issue on trapping by Tom Gebo and Dr. Ward Stone have convinced me I can't afford to miss any issues.

Dr. Stone's previous article on mange in the red fox has given me the help I need to talk intelligently about why I trap. These last two articles by Dr. Stone and Mr. Gebo are excellent.

Thomas G. Fisher, Jefferson

I dare you to put this in your letters to the editor! A comment on your recent articles defending trapping.

It's a deadly thing
this business
of taking the skin off one back
to put on another back.

Alice Green, Long Beach

Christmas story

As Christmas draws near, I think back many years to when the children were small and we were living in a dear, quaint and small furnished house in Chautauqua County. The snow was very deep, as was usual in that county, and Christmas promised to be white. There was a kind of Dickens-like feeling in the air, heightened by figures scurrying along in red mufflers and boots. Store windows were gay with wreaths. Houses at night were picturesque with their many-paned windows glowing in a warm light which threw small squares of gold on the snow. We had really extended ourselves that year. Our son was eight and our daughter was four. My parents were with us and we had a young hired girl, Helen, who was perfect with the children. A happy group of seven souls. Next door to us was a tall pumpkin-colored old house where a very old couple lived. Back of their house was a steep-roofed and lovely old Victorian barn. We called these dear folks Granma and Grampa True.

On Christmas Eve the children were tucked away in the big square bedroom which was lighted by two windows which looked out on the barn next door, and upon the fields which stretched away in the moonlight under the "new-fallen snow." We were up very late trimming the tree, stuffing the turkey, placing the big Teddy bear on the sled, hiding the new bicycle back of the low spreading branches and putting leaves in the dining table. It was four o'clock in the morning when we climbed the short flight of steps which led from the living room to the two bed chambers above. We were awake but growing drowsy when we heard the chime of sleigh bells on the barn roof. The children who had gone to bed with their minds alert and one eye open were on their feet almost at once. We all peeked out of the window in the rear bedroom. There was the moon, paling in the sky. There were the stars, very bright on the frosty air. There was the barn catching moonlight on its rooftop, there were the fir trees and the dark band of woodland beyond the fields. There was no more sleep for any of us. We put on our robes, went downstairs and lit the tree, Jimmy fell over, actually, with joy when he discovered the new shiny bike. Alice hugged her big Teddy bear.

Helen prepared breakfast which we ate in the big warm kitchen. The turkey was put in the oven betimes, as it, too, like the bear, was huge.

The children couldn't wait to go out in the snow, so by seven-thirty Helen was busy helping to put boots on and zip up snowsuits.

The mystery and beauty of those bells were the subject of awe and delight for years to come and when Jim asked "Mama, didn't you hear the sleigh bells?", and "There is a Santa Claus, isn't there?", I could truthfully say "There is, if you believe there is," and, truthfully, we *all* believed!

Grampa True at eighty years of age, (he was raised on a farm and accustomed to rising early, even on a cold winter morning) had donned his boots and fur cap and coat and had gone out back of the barn to shake the string of big sleigh bells.

Such a Christmas! None of us will ever forget it.

And that night my husband read Dickens' Christmas Carol to us. The Trues joined us. The tree gave off its fragrance and beauty. The room was blessed. May we all keep memories, such as these, forever holy in our hearts.

Erma Gray, Nunda

Al's meadow

Mr. Fick's "Almost a Meadow" rang many bells while I was reading it. I was brought up on an unproductive Vermont farm on a still unpaved road that runs beside a mountain, and those early days left me with many memories and definitely shaped much of my life. I am in my seventies now and still pass a good deal of my time outdoors on my few acres. National Wildlife gave me an award for my Backyard Wildlife Program. I tell you this partly to boast, no doubt, but also to substantiate my appreciation of what he wrote.

Beth Brown, Glens Falls

My magazine for August-September 1974 just came and it is one of the most beautiful issues ever put out. "Almost A Meadow" by Al Fick is one of the loveliest bits of prose I have ever read and I'm 80 years old. It may be prose but I call it God-given poetry. The whole magazine is a gem.

Alice M. Ives, North Creek

Stream improvement

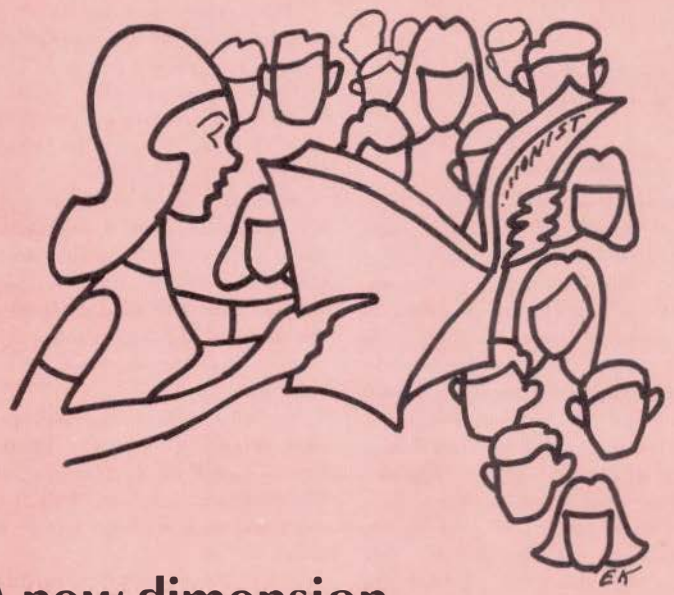
As a student of stream geomorphology, I most welcomed the article on stream improvement by Maurice Otis in the August-September issue. It is an important addition to the public literature on this neglected subject.

Since I have used many of the structures mentioned in the text over the years, I thought your readers may be interested in a few brief notes concerning my experiences with stream improvement devices.

First of all, I wish to emphasize Mr. Otis' comment that stream improvement devices

(Continued on page 42)

Copies of THE CONSERVATIONIST Index, Volumes 27-28, for Aug.-Sept. 1972 through June-July 1974 are now available from Department of Environmental Conservation Publications, Room 107, Albany, N. Y. 12233.



A new dimension to classroom teaching

Thank you for the Teaching Guide in the August-September issue of THE CONSERVATIONIST. I look forward to the Teaching Guide for the October-November issue. As a classroom teacher, I enjoy responding to the students' interest in the world of nature. Almost every article in the magazine brings into focus some vital aspect of the environment. The Teaching Guide with its outlines of these articles and the pointed questions it lists makes my job all the more rewarding. It helps me to encourage these interests and to broaden their knowledge. You have given me an educational tool which brings the outdoors into the classroom and the classroom into the fields. Thank you for providing a new dimension to classroom teaching.

Mrs. Agnes Culhane, 5th grade teacher

THE CONSERVATIONIST comes six times a year to primary or secondary schools for $1. The Teaching Guide, published separately, is sent free to teachers who request it. For your copy of the current Teaching Guide, fill out the coupon below.

Dept. of Environmental Conservation Publications, Room 107, Albany, N.Y. 12233

Please send me the Teaching Guide for the following issues of THE CONSERVATIONIST:

☐ Feb-March, 1974 ☐ June-July, 1974 ☐ Oct-Nov, 1974
☐ April-May, 1974 ☐ Aug-Sept, 1974

Name_____

Address_____

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"should be sloped slightly toward the center of the stream from each bank." I believe that one should never construct any type of structure which is perpendicular to the flow of the water. Such structures soon become clogged with debris and are easily destroyed at times of flood flow.

I have always felt that stone structures are vastly superior to wood in that: 1) they create needed shelter niches for aquatic insects and other foods for the upper tropic levels; 2) they cannot become dangerous debris at times of flood flows; 3) they are aesthetically pleasing; and 4) they are the easiest type of structures to repair or modify. I have also long felt that stone structures would tend to increase the level of dissolved oxygen in the stream more than an equivalent wood structure, although I have never empirically tested this assumption.

On the last note, it must be mentioned that stones should *never* be removed from the river's bed or banks for use on stream improvement structures, or any other reason, since they play a critical role in the processes of the ecology and geomorphology of the stream. Since the transport of the necessary stone is a taxing business, I have devised a simple apparatus out of truck tire innertubes to simplify the task.

Finally, if any of the readers wish further information on the subject along with "The Stream Conservation Handbook," I strongly recommend the report entitled: "Guidelines for Management of Trout Stream Habitat in Wisconsin" by Ray White and Oscar Brynildson of the Wisconsin Department of Natural Resources, Division of Conservation (Technical Bulletin No. 39).

Irving W. E. Fallon, Researcher
Connecticut Department of
Environmental Protection

Population problem

In the editorials in April-May and June-July issues you discuss new priorities and express concern for the quality of the environment. In examining these matters how can you completely exclude any mention of population as a problem which we must all face? To quote Russell Peterson, Chairman of the President's Council on Environmental Quality, (Apr. '74), "The solution to most of the major problems of mankind such as malnourishment, disease, poor housing, unemployment, pollution, and depletion of resources is dependent upon solving the population problem. If the present rates of growth continue, however, the global population will reach 6.7 billion in the year 2000 and 35 billion 1000 years from today (if famine and disease do not reduce this number)."

We can have an economic policy which would allow economic growth while improving the quality of life for all the population which exists, without trying to increase the population to make markets.

Ellin London, Pound Ridge

Book Reviews

Conducted by Joan Taylor

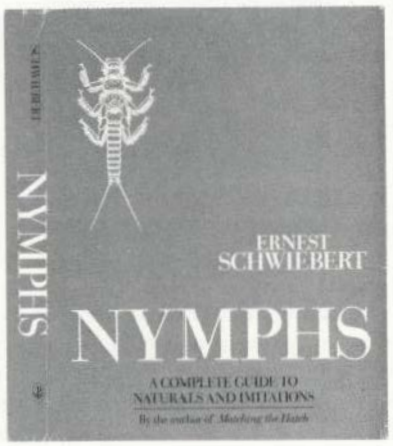
It's stocking stuffing time, and for the sportsman (woman) who likes good books, Santa Claus, take note: 1974 has been an open season at the publishers.

Tackle Craft, by C. Boyd Pfeiffer, 338 pages, Crown Publishers, $9.95, is a definitive, profusely illustrated, how-to-do-it book on making, maintaining and repairing rods, nets, plugs, leaders, rubber lures, molds, bait boxes, tackle boxes and hundreds of other essential fishing items. No fishing library is complete without this handy, comprehensive work manual.

Fly-Fishing Materials, by Eric Leiser, 191 pages, Crown Publishers, $7.50, is another classic in the fishing hardware field. The author begins with a basic examination of the nature and quality of commercial fly-tying materials and ends with a unique discussion of the preparation and use of readily available small game furs and feathers. Much of the material in this book, such as the illustrated section on grading, bleaching and dyeing of necks, has not been widely advertised in the past.

Fly Casting With Lefty Kreh, by Lefty Kreh, 128 pages, Lippincott, $8.95, is a superb, photographic study of basic and advanced casting techniques by a master of the art. This is a practical, self-teaching guide covering the most useful techniques from catching your line to examine the fly to controlling your cast under windy conditions. The full page photographs solve one of the most perplexing problems of a self-taught fly fisherman: "What should I be seeing as I handle my cast?"

Practical Black Bass Fishing, by Mark Sosin and Bill Dance, 216 pages, Crown Publishers, $7.95, combines the field experience and expertise of two leading bass fishermen. The book fulfills the promise of its title. It is practical and explains how one can methodically fish unknown waters and find bass in lakes, farm ponds, rivers and creeks. It discusses the habits and haunts of the black bass as well as the selection of your equipment and baits. In short, this guide is a concise, first rate graduate course in black bass fishing and a welcome addition to the popular literature on this scrappy and tasty game fish. — Holt Bodinson



Nymphs, by Ernest Schwiebert, 339 pages, Winchester Press, New York City, $9.95.

Here, for the first time, is a comprehensive volume picturing the common insect nymphs often found in our streams. It is natural that such a book, written by an expert fly fisherman, would include recommendations of flies that will match the form and color of the more common stream nymphs. Certainly this book, which is beautifully illustrated with 4-color plates of insect nymphs painted by the author, is a must for fishermen interested in either the biology of stream life or the taking of fish on flies. It identifies insects and the seasons and conditions in which they are found. It also comprises a study of insect behavior which is of considerable importance. It should be of value to entomologists and streamside biologists.

I heartily recommend "Nymphs" to the fisherman, but still wonder in my own mind whether fish are actually so selective in their feeding that subtle differences, so well shown in the paintings, are significant. Perhaps a general pattern, well presented to the fish might be equally productive. Every fisherman will have his own opinion.

I do not recommend this book for recreational reading, although Dr. Schwiebert includes some illustrative anecdotes. Author of "Matching the Hatch", "Salmon of the World," and "Remembrances of Rivers Past," Ernest Schwiebert's intent here is not to entertain, but to inform. He has done this most successfully. — H.W.T.

The Titanic Effect: Planning for the Unthinkable, by Kenneth E. F. Watt, 268 pages, Sinauer Publishers, Stamford, Conn., $3.95.

Kenneth Watt is a "connecting" mind. As an ecologist he brings to a problem that discipline's intellectual imperative — unity, cohesion, connection, the interrelatedness of things. Though the title of this book suggests something of the "doomsday school" about it, it is really a cautious, well-documented and well-reasoned piece. We have lived too long in some sort of "dream world," Watt argues, insulated from the realities of environmental crisis and economic disaster by a set of beliefs and myths which are untenable. The most pernicious of these has been the traditional American equation of bigness and growth with quality and better. To begin to turn the corner on our dilemma, we need to get rid of our blinders, scrap a good deal of our intellectual baggage and develop something like a crisis psychology. Together with this, the author argues for a more honest and rational allocation of scarce resources and more effective planning. Unless we do this, we will hit the "iceberg" head-on and go down to the murky bottom as a society.

This is a very readable book and it brings together many diffuse elements into a cogent synthesis on the modern American and post-industrial dilemma. Yet it is a thoroughly conventional argument which assumes that all we really need to do is appraise the people of the situation and so informed with the truth the right thing(s) will be done. I'm not terribly sure this works all that much. The basic point Watt raises, though, is beyond debate: we may simply run out of time and hence alternatives. This book will not bring the troops to the barricade as "Limits to Growth" appears to have done in certain places, but it will stimulate discussion and serve also as a model for the very type of analysis and thinking which is so sorely lacking these days. — Mark B. Lapping, Institute for Man and His Environment, SUNY at Plattsburgh

The Last Eagle: The Dramatic Story of Khan, by Ben East, 144 pages, Crown Publishers, Inc., $5.95.

If ever a book succeeded in combining fact and fiction and, through a strange synergism, creating something more powerful than either, Ben East's "The Last Eagle" is it.

It is a life-history book — a biography of a glorious bald eagle named Khan, of

a great nest in northern Michigan and of a noble species trying to maintain its hazardous existence despite added man-made obstacles.

In some ways "The Last Eagle" is a love story of avian fidelity and devotion, for bald eagles mate for life and share an ecstatic courtship and the demands of family life.

It is a story of fierce fighters whose instincts command them to battle to the death even when the prey outweighs them.

It is a tragedy of unscrupulous men who poach eagles for their feathers, of pesticide pollution — an insidious threat to eagle reproduction — and of Khan's magnificent mates and offsprings who fall victim to them.

The prose is lively and the drama is built flawlessly and steadily to its inevitable conclusion — the collapse of the Great Lakes bald eagle population.

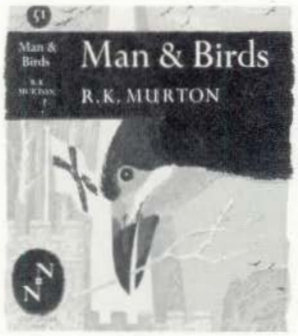
East is intimately familiar with eagles — having banded many himself — and he has relied on recognized eagle experts for factual material and anecdotes. "To the best of my knowledge," he avers, "there is no episode here that is untrue to eagle behavior."

He adds that the ominous prediction implied by the title of the book is his alone. "I cannot claim to know whether it will come true. That it will not is devoutly to be hoped, but there is sound reason to fear it may."—Connie Komarek Bart

Man and Birds, by R. K. Murton, 364 pages, Taplinger Publishing Co., New York, $8.95.

In spite of the bird feeder in nearly every yard, the profusion of coffee table books filled with bird portraits, and the field guide in every rucksack, there is a broader implication for people in their sharing of the environment with birds. Murton's book dealing with the "economic aspects of man's interrelationships with birds" — while specifically devoted to bird problems in England — has universal application.

Although the species, crops and industries may vary, the principles are the same. The recent foothold established in the United States by the monk parrot and the blackbird problem in Maryland last spring are reminders that pleasant birdsong and a splash of color around the house are only part of the picture. When we see martins consuming mosquitoes, or while we are enjoying the oriole's song, we are not likely to think about birds as disease carriers, crop decimators or hazards to aviation (Trans-Canada Airlines has experienced $2 million in direct costs from bird strikes since 1959).



Sustaining and perpetuating the species is a common denominator between birds and humans. It is inevitable that the pursuit of the common goal results in clashes which have economic impact. "Man and Birds" explores all of these and much more in a text rich with data, charts, tables, illustrations and an extensive bibliography.

R. K. Murton's book is objective and scientific in approach. Even when he discusses the killing of new born lambs by ravens it is within the framework of scientific evaluation rather than emotion.

A worthwhile addition to the avian bookshelf. — Alvin Fick

John Muir, by Margaret Goff Clark, Garrard Publishing Co., $3.75, illustrations by Cary.

John Muir is a familiar name to conservationists and those who use our national parks. Muir helped organize the Sierra Club and the numerous articles he wrote led to the establishment of the national park system.

This is a short biography of the man who, in his own words, "chose to become a tramp" instead of the millionaire he might have been with his inventions and business acumen. His decision came after a factory accident that temporarily blinded him. He was 29 when he started off alone and on foot, without a gun, to study the woods, fields, and mountains. He covered about 1,000 miles, classifying new species of plants and animals and discovering a living glacier in the Sierra Nevada mountains. His daring and resourcefulness were still much in evidence when, in his forties, he and a dog became lost on an Alaskan glacier when darkness was near.

There is plenty of action throughout the book from Muir's childhood in Scotland, growing up on the family's pioneer farm in Wisconsin, into his inventive period and college years, his hikes into the wild lands and his efforts to save them.

The book is easy to read, interesting, informative and authentic. The illustrations add to the authenticity with excellent likenesses of people and surroundings.

One of Garrard's Discovery Books about famous people, the book is written for children in the primary grades. However, the information in this capsulized version will be enjoyed by adults, too, and would be a perfect gift to a child to spark an interest in conservation. — Isabel K. Hobba

Books Received

Energy, Ecology, Economy, by Gerald Garvey, 235 pages, W. W. Norton & Co., Inc., 55 Fifth Ave. N.Y.C. 10003, $8.95.

Economics and the Environment, by Matthew Edel, 162 pages, Prentice-Hall Inc., $7.95, $2.95 paper.

The Economics of Environmental Policy, by Freeman, Haveman, Kneese, 184 pages, John Wiley & Sons, 605 Third Ave., N.Y.C. 10016, $4.25.

Daydreams and Nightmares, A sociological essay on the American environment, by William R. Burch, Jr., 175 pages, Harper and Row, $5.00.

The Old Guide's Story of the Northern Adirondacks. Reminiscences of Charles E. Merrill, ed. Fay Welch. 224 pages, Adirondack Yesteryears, Inc., 10 Dorsey St., Saranac Lake, N. Y. 12983, $9.75 plus 65¢ postage.

Beginner's Guide to Archaeology, by Louis A. Brennan, 318 pages, Stackpole Books, Harrisburg, Pa., $9.95.

Water, A Primer, by Lana B. Leopold, 172 pages, W. H. Freeman and Co., cloth $4.95, paper $2.95.

The Comedy of Survival, Studies in Literary Ecology, by Joseph W. Meeker, 217 pages, Charles Scribner's Sons, $8.95.

Bibliography of the Ruffed Grouse, by John C. Moulton and Phillip V. Vanderschaegen, Wisconsin Dept. of Natural Resources, Madison, Wisconsin.

Environment and Society, A Book of Readings On Environmental Policy, Attitudes, and Values, ed. by Roelofs, Crowley, Hardesty, 374 pages, Prentice-Hall Inc., $5.95.

More on books
on page 46

An Island for the Birds

(Continued from page 14)

common and roseate terns for ornithologists, fellow scientists, and experienced bird watchers.

"By following the lives of the common and roseate terns, and by finding out what their requirements are," says Helen Hays, "we hope to understand the life cycle of the species."

Mary Le Croy, a Scientific Assistant in the Department of Ornithology at the American Museum of Natural History, studies the growth of young chicks. In her work, she discovered that chicks double their weight within three to four days after hatching. It again doubles within the next four days and gradually levels off for the remainder of the growth period. Chicks may weigh more than adults before they fledge but usually lose the excess weight before they fly and migrate.

Mary Le Croy continued her study in Venezuela to determine if climate is a factor in affecting the comparative growth patterns of the common terns that breed on Great Gull Island and those that breed in the tropics. Her findings so far have shown that there is little difference between them.

Grace Donaldson Cormons of the Department of Education at the American Museum of Natural History, has been studying the change in bill color of the common and the roseate tern during the breeding season. She discovered that when the common tern first arrives its bill has a red base with a black tip; the roseate's bill is completely black. At the end of the season, the bill of the roseate appears similar to the bill of the common. The reason for this change bears no relation to the change in breeding plumage. And its cause still remains a mystery.

A young tern testing his first wings

Joan Stormonth Black, a photographer who began photographing terns in 1970, became interested in documenting their behavior on film and recording their avian language on tape. In 1973, working daily from 7:00 a.m. to 6:00 p.m. at a gun emplacement that had been converted into a bird blind, she watched nine families of terns. Joan believes that terns, like people, have unique personalities.

Among the many behavioral quirks she observed was the adoption of the chicks Black and White (so named because of the colored bands on their legs). During a food shortage, both parents left the nest to find fish. In their parents' absence, Black and White wandered about to beg for food. Contrary to the ill fate that befalls unattended chicks, the neighboring birds did not attack or peck at them, but fed and adopted them as their own.

When the parents returned, and found their chicks in their neighbor's nest, there was a bitter feud between the families over the custody of the chicks. Black and White returned to their natural parents. But only at night. For the rest of the summer, they would leave each morning to spend the day with their adopted parents.

At dusk the workers return from various parts of the island. A soft breeze cuffs the water as a beacon flashes on neighboring Little Gull Island. Bob Stephenson, a worker on the island, points to the remaining military debris and exclaims: "Relics of man's destructive stupidity!"

However, as members of the American Museum of Natural History and the Linnaean Society of New York have proven from their extensive efforts in conserving Great Gull Island for the terns, man can act as a constructive force in improving the environment for seabirds. And through their research, and in their field work, they remind us that wildlife is an effective mirror of the quality of our environment.

Face of Famine

(Continued from page 33)

September of 1955, for example, over 1,500 deer died in New Jersey from epizootic hemorrhagic disease, an uncommon but extremely virulent contagious disease similar to bluetongue in cattle. The Great Swamp, although not a refuge at the time, was the geographic center of the epizootic, (which corresponds to an epidemic among humans). A starved, dense population of deer in the Great Swamp could well precipitate another epizootic of this dangerous deer disease.

Levels and varieties of parasites are usually higher in malnourished deer than in healthy animals. The average number of parasitic worms found in the stomachs of fresh road-killed deer from the Great Swamp during the period under discussion was nearly six times the number from stomachs of deer taken on a good range in New Jersey.

Photo by Bob McDowell

A typical deer herd in the Refuge

A particularly pitiful example of starvation was found in the case of one young buck found by wildlife officials at the Great Swamp Refuge on March 23, 1974. When approached, the animal tried to flee but fell frequently because of muscular weakness and finally laid down and died. The pathology section of the New York State Department of Environmental Conservation was requested to autopsy the deer. The buck weighed 41 pounds, half its normal weight. It had moderate infestations of lice, lung worms and peritoneal worms, the latter causing a mild peritonitis. Over 80 nose bots, a type of fly larva, occluded and inflamed the nasal cavity. A heavy load of whipworms was present in the intestine. The stomach had bleeding ulcers. The ribs were brittle and the thigh bone marrow completely depleted of fat, as was the liver.

The diagnosis—death from starvation.

Photographs of this deer, when published in the major newspapers in New Jersey, generated a shift in public attitude toward the hunt. One major newspaper,

long silent in its editorial page, came out in support of the hunt and of the expertise of the wildlife biologists involved.

Two days later a dead deer survey of the refuge was conducted by New Jersey wildlife biologists and refuge management staff. Projecting from the area survey, it was calculated that a minimum of 40 deer had met death from starvation.

Cold winter temperatures cause deer to utilize much of their food reserves in keeping warm. When snow is deep for extended periods of time deer are compelled to feed on less nutritious food sources. But since 1970, neither cold winter temperatures nor prolonged snow cover has aggravated the condition of the deer in the Great Swamp. The absence of these factors would suggest the primary reason for the die-off was extensive habitat destruction by the deer themselves, an assumption subsequently confirmed through vegetational analysis by refuge officials. Because of the severe damage to vegetation from the hungry deer, the carrying capacity of the refuge has been considerably reduced from what it was in 1970 and will therefore require the reduction of the herd below the originally proposed level of 400 deer. This will necessitate a hunt in December 1974 in spite of starvation losses. Since healthy deer have been shown to have higher reproductive rates, a low population level will not jeopardize the herd and periodic harvest will still be a necessity.

It is hoped that this report on the events of the Great Swamp controversy will prevent further repetition of wildlife mismanagement by legal action. This is not to suggest that concerned citizens refrain from becoming involved in wildlife management issues, but it does recommend tempering their zeal with reason. They should also understand that the vested interest of the wildlife scientist is in wildlife not sport hunting.

The U. S. Department of Interior announced in September that a public deer hunt will be allowed in the New Jersey Great Swamp National Wildlife Refuge in December to reduce deer numbers "from the present over-population of 600 to a level that can be sustained by the habitat available." The 1974 hunt will consist of 400 persons to be chosen by application. Only 150 hunters will be permitted on the Refuge at one time, however.

Correction—Water Reflections, 2nd cover of the Aug.-Sept. issue was the work of Charles Wagoner III.

More on Books

Fishing Widows: The Intimate and Domestic Revelations of an Angling Addict, by Nick Lyons, 154 pages, Crown Publishers, Inc., $5.95.

Author Nick Lyons is his own best advocate in justifying his book: "Fishing is *complexly* irrelevant, and its very capacity to absorb men completely makes it the more valuable to them — and the less intelligible to women. A woman may not like the idea of a mistress, but another woman is something she can understand and fight. Fishing, unintelligible and irrelevant to the uninitiate — is, as the wise judge Robert Traver wisely notes, *worse* than adultery. . . . The very intensity of the passion . . . cannot be understood or appreciated without some disclosure of how deeply the fisherman's passion runs."

There follows fifteen witty, perceptive essays some concerning the plight of a confirmed fisherman in New York City ("Trout in Fun City"); others imaginative descriptions of rivers and the devoted anglers who derive a special satisfaction from fishing them, and an amusing final tale called "Fishing Widows." All of which are meant to explain to and, in a measure, soothe fishing widows everywhere. As Author Lyons says, "Some fishing widows suffer loudly, some silently. I have known some who learned to live royally on their husband's guilt. Some women won't be made fishing widows and make fishless widows of their husbands. Some fishing widows are sons — and some graduate from that role. . . . It is an entanglement that may issue both pain and humor and someday, hopefully, even understanding." — H.W.T.

Books Received

Citizen's Policy Guide to Environmental Priorities for New York City, Part II Townscape, 78 pages. Council on the Environment of N.Y.C., 51 Chambers St., N.Y.C. 10007, $2.50.

World Directory of Environmental Research Centers, ed. by William K. Wilson, Morgan D. Dowd, Phyllis A. Sholtys, R. R. Bowker Co., P.O. Box 1807, Ann Arbor, Mich. 48106, $19.50 plus shipping and handling.

The Seabirds of Britain and Ireland, by Stanley Cramp. W. R. P. Bourne and David Saunders, 287 pages, Taplinger Pub. Co., $14.95.

Common Globe or Global Commons, Population regulation and income distribution, by John C. G. Boot, 139 pages. Marcel Dekker, Inc., 305 E. 45th St., N.Y.C. 10017, $9.75.

The Seas and Oceans in color, by C. F. Hickling and Peter Lancaster Brown, 249 pages. Macmillan Pub. Co., Inc., $5.95.

Tropical Marine Invertebrates of Southern Florida and the Bahama Islands, by Warren Zeiller, 132 pages, Wiley-Interscience, div. of John Wiley & Sons, $19.95.

Decoys Simplified, by Paul W. Casson, 95 pages, Freshet Press, 90 Hamilton Rd., Rockville Centre, N. Y. 11571, $14.95.

Fermented Foods, Current Science and Technology, N. Y. S. Agricultural Experiment Station, Geneva, Div. of N. Y. S. College of Ag. & Life Sciences, Cornell Univ., Ithaca.

It Happened Last Year — Earth Events-1973, ed. by James Cornell, 250 pages, Collier Books, div. of Macmillan Pub. Co., Inc., $3.95.

Thor Heyerdahl and the Reed Boat Ra, by Barbara Beasley Murphy and Norman Baker, Navigator, 64 pages, J. B. Lippincott Co., $4.95.

Finches, by Ian Newton, 288 pages, Taplinger Publishing Co., $12.50.

The Problem of Solid-Waste Disposal, by Eugene A. Glysson, James R. Packard, Cyril H. Barnes, 153 pages, College of Engineering, Univ. of Michigan, Ann Arbor, Mich. 48104, $4.50.

A Field Guide to Trees And Shrubs, by George A. Petrides, 428 pages, Houghton Mifflin Co., $3.95 paper.

Giant Sea Creatures: Real and Fantastic, by John F. Waters, 128 pages, Follett Publishing Co., Chicago, $4.95.

About This Issue (Continued from page 2)

every black walnut and hickory tree near his native village of Fremont. Retired since 1956 as Professor of Pomology and Chairman of the Department of Floriculture and Ornamental Horticulture at the State College of Agriculture at Cornell, Professor MacDaniels has long been an active member of the Northern Nut Growers Association and is active in various conservation projects in the Ithaca area including President of the Cayuga Lake Preservation Association and Cochairman of the Central New York Chapter of the Nature Conservancy.

CAROL J. FULLUM (From Field to Table) attributes a Pennsylvania Dutch background to her love of good cooking. The wife of THE CONSERVATIONIST's fishing expert Jay Fullum, Carol, in addition to her full time job of housewife and mother of two girls, finds time to be a Brownie Girl Scout leader, a Sunday school teacher and a member of the Home Bureau in Ravena. Before moving to New York State she taught Latin and French in Fairfax County, Virginia.

ERNEST SMITH whose painting illustrates "Snakes in the Snow" was born on a Seneca Reservation in western New York in 1907. A veteran of the WPA's Artists and Writers Project, Smith has devoted a lifetime to depicting the Iroquois way of life, especially their legends. His paintings hang in the Rochester Museum and Science Center as well as in the gallery of Indian artists at the U. S. Bureau of Indian Affairs. His work has also been reproduced in Oliver LaFarge's "American Indian" and Ruth Underhill's "Red Man's Religion."

When her avocation began to provide more creative fulfillment than her vocation MARYEL CLARE (From Print to Pattern) decided to turn her hobby of needlepoint and crewel into her business. Now, with her husband Keith, who does furniture stripping and refinishing, she owns and operates Clare's Barn Emporium in Mellenville, New York, just outside Hudson. Mrs. Clare maintains a very busy schedule teaching needlepoint and crewel as well as lecturing to clubs and organizations on the subject. Recently, she received a grant from the America the Beautiful Fund of New York to research and teach early American crewel.

HENRY L. DIAMOND (Is this Land Our Land?) has been executive director of the Commission on Critical Choices for America since January 1974. The commission is headed by Nelson Rockefeller, who by the time this appears in print will be Vice President of the United States, and includes among its members President Gerald Ford. In April 1970 Mr. Diamond was named by then Governor Rockefeller as commissioner of the newly formed Department of Environmental Conservation and served in that post for almost four years. Mr. Diamond has been associated with a number of environmental efforts, in New York State and nationally. He has been a member of the Long Island Park Commission, the New York State Council of Parks, the Temporary Study Commission on the Future of the Adirondacks and the Temporary Commission on the Hudson River Valley. He served on advisory committees under Presidents Nixon and Johnson and in 1965 was director of the White House Conference on Natural Beauty. He edited the landmark report of Outdoor Recreation Resources Review Commission which led to such major legislation as the Wilderness Act and the Land and Water Conservation Act. The article which appears in our EQ News supplement is reprinted with permission from Newsday.

DOUGLAS E. ROSCOE and GEORGE P. HOWARD JR. (The Face of Famine) are both wildlife biologists. Mr. Roscoe, who has served as an assistant pathologist in DEC's Wildlife Research Laboratory, received his B.S. in Wildlife Management from the University of Wyoming and his M.S. in pathobiology from the University of Connecticut. He is currently on leave from the department to complete doctoral studies in pathobiology at the University of Connecticut. The author of numerous papers on diseases in wildlife, Mr. Roscoe is also coauthor of the fur bearer section of the Catskill Study Commission Report. Mr. Howard currently holds the title of Assistant Chief, Bureau of Wildlife Management for the New Jersey Division of Fish, Game and Shell Fisheries. A graduate of the State College of Forestry, at Syracuse, he has had over 24 years experience in wildlife management including supervision of all wildlife research and management activities for the New Jersey Bureau of Wildlife Management. As a leader of the Division's Fish and Game Habitat Restoration, Forest Management and Deer Research projects, he has been intimately acquainted with all phases of the Great Wilderness Swamp controversy.

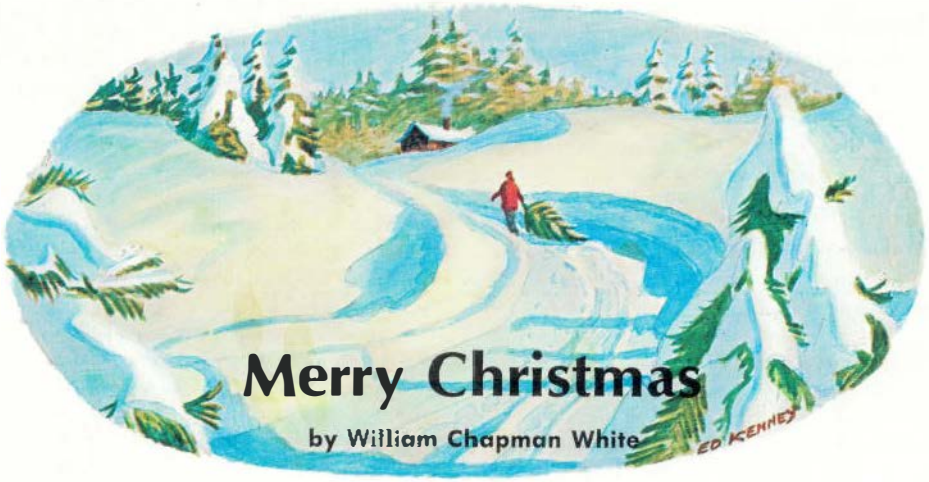
Our Earth Almanac for this issue features a heart-warming story by WILLIAM CHAPMAN WHITE (An Adirondack Christmas) reprinted by permission of Mrs. Ruth Morris White, his widow, and the Adirondack Museum, holders of the copyright. Bill White came to the Adirondacks shortly after World War II after an active life as a newspaperman, war correspondent for the New York Herald Tribune and a writer for various publications, including a stint producing scenarios for MGM. Observing nature from his home on an Adirondack lake, he wrote about the flora, fauna and people of those mountains in a weekly column for the HT and the New York Times and produced a book, "Adirondack Country" in 1954, which has been a major reference book on the region. Some of his columns and essays were collected in a little book, "Everything about the Adirondacks," and published in 1962 by the Adirondack Museum. Our selection comes from that book. Bill White died in 1955.

WILLIAM H. CARR (Bear Mountain Trail Blazers) is probably this country's most effective promoter of on-site nature education. Jean George in the September Readers Digest tells how he left high school in Flushing at age 18 for a job in the American Museum of Natural History and was soon building a small zoo in a dark corner of the museum's insect hall. "Soon crowds of youngsters were coming in to pet the skunk, feed the woodchuck and handle the harmless bullsnake," she wrote. In 1927 he applied the lesson learned from this experience to the building of the Rear Mountain Park trailside museums, nature trails and zoo. "This was one of the first displays of its kind in the world," Mrs. George said. Moving to Arizona in 1947 for his health, he became the prime mover in building the Arizona-Sonora Desert Museum near Tucson which has approached as no other museum in the world the ideal of presenting wildlife in its natural habitat. Bill Carr is known to our readers for his story on Dan Beard (August-September 1973). He is known nationally as an outstanding leader of American conservation and an author of many books and articles in this field.

NNA - YOU - THAW - HUH - TUT - OH (Snakes in the Snow) goes in other quarters by the name of Wayne Trinun, our Art Director. Wayne's interest in all things Indian stems both by virtue of his Indian ancestry and by his adoption into the Tuscarora nation some ten years ago. The name, freely translated, means "The Big Paint Brush."

With this issue we introduce to our readers two North Country artists. MINA ANGELOS, whose St. Lawrence Valley farm appears on Cover II, grew up in Montreal, attended McGill University and graduated from the University of Minnesota with a bachelor's degree in bacteriology. She has lived in Plattsburgh for the past 12 years with her husband, a surgeon, and four children. The family hobby is camping, fishing and cross country skiing. ED SCHAUER, lives in Upper Saranac. His painting of Big Slide Mountain (See Cover IV) was one of several he exhibited at the Adirondack Art Show at the Legislative Office Building in Albany early in 1974. This painting was purchased by Beverley B. Sawaya who kindly permitted us to reproduce it here. Mr. Schaher is building a home and studio on Hurricane Mountain in Keene. Big Slide rises 4200 feet on the town line.

APOLOGY — A belated credit line omitted from our August-September issue: The map of Champlain Country used as our cover and in detail as illustrations on pages 6 and 7 came from a rare first edition of Champlain's "Les Voyages" (1613) in the New York State Library of the State Education Department, Albany.



Merry Christmas

by William Chapman White

JOHN Roberts is a forest ranger. He is a grayed, gaunt man, as sturdy as one of the tall spruces in his care. For forty years he has watched over what he calls "his trees."

A few days before one Christmas John came out of the woods, following a human trail. It had started at a freshly cut white spruce stump, then crossed the heavy snow in a clearing, and came out on a back road. The heavy footprints turned down toward an unpainted bleak house a quarter-mile away. As John plodded down the road following the footprints he knew what he was going to have to do. It was one part of his job he never cared for.

The trail led right into Joe Carson's ramshackle place, where Joe, wife and seven kids somehow lived. John had known Carson all his life. He had never amounted to much.

In the littered front yard small children were building a snowman. A pack of black puppies ran at their heels. John went by them to the old barn. On the floor inside was the fresh-cut white spruce. Kids and puppies followed John when he turned to the house. Carson opened the door before John could knock. He asked without much surprise: "Something you want, John?"

The ranger nodded as he went into the house, along with the kids and dogs. In its one big, steamy, downstairs room were more children, more puppies. A faded woman in a faded dress stood by a littered dining table. Behind it were three ill-made beds.

John nodded to Mrs. Carson. He said to Joe: "You cut a tree off state land, Joe. You know there's a fine of ten dollars a tree for that. I didn't make the law. If we didn't have it, soon we wouldn't have any trees left, particularly at Christmas."

Joe nodded. "Yeah, I know. We can't have much for Christmas this year, but I figured I'd get the nicest tree I could and I didn't expect you'd see it. My wife even made some paper chains for it."

"You can pay me the fine, on stipulation, as we call it," John said bluntly. "Or you can come to justice court and stand trial."

"No use," Joe shook his head. "I just about got $10."

"How much have you altogether?"

"I got $11.58 in all this world. We were going into town tonight to get some things for the kids' Christmas, but we won't go now."

"I guess not," John hoped he did not sound as miserable as he felt. He saw Mrs. Carson and the circle of children 'round about staring at him. "Law's law, Joe. Give me the $10 and I'll give you a receipt." He stooped down for a moment to brush away two puppies that were chewing at his shoelaces.

The ranger took a dirty crumpled bill from Joe and gave him a receipt. He felt angrier at the man for having put him in this spot. "Okay," he said. "That's all, Joe."

"Thanks," Joe answered. "Well, Merry Christmas!"

John just nodded at that as he hurried to the door to get away. At the door he had to stoop again and push puppies away. Then he turned back. "Joe," he said, "would you sell me one of these puppies? I have a nephew who wants a dog for Christmas."

"I'd sell most of 'em if I could."

Joe picked up one puppy. "How about $10 for this one?"

Joe stared at the ranger, then grinned. "That's a high price."

"It's worth that to me." John took a dirty crumpled bill from his pocket, handed it over and hurried out with a puppy squirming under his arm.

Two nights later the ranger was in town finishing his Christmas shopping. He ran into the Carsons on the main street.

"Glad I met you," Joe told him. "The darndest thing happened after you left the other day. People started coming to buy those puppies. I musta sold seven."

"That's fine," John said. "News sure gets around fast up here in the backwoods. Well, Merry Christmas, Joe!"

"I'll say," Joe answered. "Merry Christmas!"

Earth Almanac

EQ News

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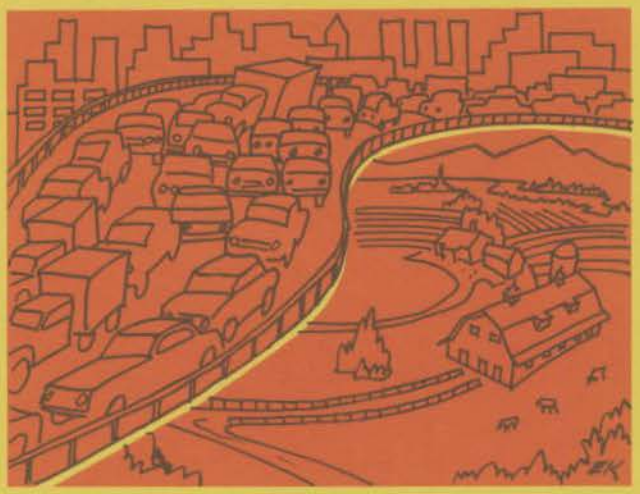


In This Our Land?

by Henry L. Diamond

In a heated mid-June debate, the House of Representatives voted down a bill that would have given federal and state governments a modest voice in land use planning. The key issue was whether Washington or the state capitals should have any role in control of the use of private land. This power was pictured as a new threat from big government to private property, but the ironic fact is that federal and state officials are already exercising far stronger land use controls than any proposed in the defeated bill.

The legislation which aroused the ire and the oratory of the conservatives in the House was mild stuff. It said only: "If you states want to set up a process by which you participate in decisions on land use which have a greater than local effect, we, the Congress, will put up $100 million a year for eight years to pay most of the tab." Initial versions of the bill put pressure on the states by threatening to withhold other federal aid if they didn't move on land use planning, but these sanctions were defeated in early legislative skirmishes.

At one time, land use planning legislation, or at least this painless prescription for it, seemingly had the support of almost everyone. In three annual environmental messages, President Nixon gave strong support, calling it "a high priority of my administration." But in the last days before the vote, White House lobbyists and, what's more important, Interior Secretary Rogers Morton, who was to administer the program, began opposing the bill.

The opposition, led by the U. S. Chamber of Commerce, stopped a major environmental issue on ideological grounds. Their sense of a gut issue was astute, but their timing may have been late.

At stake here is something basic. The country has come to accept strict controls over use of air and water. There is still debate over the pace and price, but the nation is committed to limiting the pollution that goes into the streams and the atmosphere. Further, the political decision has been made that the federal government is going to have a major say. While some program and enforcement responsibilities have been delegated to states and local governments, Washington is paying for most of the pipes and is calling the tune on standards and penalties.

But control of land pollution has been much slower coming, and the congressional defeat reflects a strong reluctance to confer even the mildest of land use authority on the federal government or to push the states in that direction. Traditionally, people have been loathe to give their governments control over land use or misuse. The deep-seated Anglo-Saxon tradition that every man's home is his castle has extended to the land around that castle. Voters and representatives they elected have believed that it was none of the government's business whether a man used his land as a garden-like preserve or as a garish pizza palace.

There is support in the Constitution for limits to land use control. A lesser known clause of the Fifth Amendment directs "nor shall private property be taken without just compensation." The traditional argument has been that almost any limitation on the ability of the owner to maximize the dollar return from his land is a "taking" requiring compensation. This view has been put forward as a constitutional bar to any land use control, but the growing trend has been to hold a reasonable, widely applied, soundly based system of land use control as not a taking but a valid exercise of a general welfare power.

The difference is basic because if a system of land use control cannot be based upon regulation without compensation, it becomes so expensive and unmanageable as to be almost impossible. Almost every player in real-life Monopoly thinks his land is Boardwalk (the shopping center) and wants to be compensated accordingly for any government action which reduces his expectations, even if in fact he only owns lowly Baltic Avenue (the unbuildable slopes and swamps).

This timid, limited and local approach is changing. Many of the 211 nay-sayers on the use planning bill may have left the House chamber that day thinking that they had successfully stopped the federal government from getting a foothold where they believe it shouldn't be. The fact is, however, that the federal foot is already firmly planted in land use under other banners, and state governments are there as well.

For example, the Federal Coastal Zone Management Act directs 30 states to come up with a plan for managing a vaguely defined but clearly substantial chunk of real estate known as the coastal zone. Just as the legislation the House voted down, it sets guidelines and grants some money to carry out a land use plan. Under coastal management, federal dollars are, in fact, already flowing to the coastal states to pay for almost exactly the kind of thing that the House voted against.

The most clear-cut federal land use control requirement is in three provisions of the Clean Air Act of 1970. First, the act says that the states must have a way of regulating "complex sources" of air pol-

lution. Complex sources are developments such as shopping centers, sports centers or developments which generate a lot of traffic and, in turn, a lot of air pollution. Regulating them is regulating land use. In New York, for example, one must get a state permit to create any land use which is going to provide more than 1,500 parking spaces.

Second, the Clean Air Act also seeks to prevent any further degradation of the air anywhere, no matter what its status is now. A very rigid enforcement of this "nondegradation rule," which some have espoused, mandates that nothing may be added to the air anywhere.

The Clean Air Act further directs the states to come up with a plan for meeting the air quality standards the federal government has set. The basic tool for meeting the standards is setting emission limitations on factories, homes and power plants, the so-called stationary sources. If these limitations do not bring the air quality up to standards, then the states must come up with a "transportation plan" to get the rest of the way to the standards. The transportation plans cut down on the number of miles driven, and thus the air pollution, with provisions such as tolls on bridges, increased parking lot fees, fewer parking spaces, a ban on taxi cruising, parking areas on the fringes of cities and better mass transit. By another name, this would be called land use control, and the Clean Air Act confers authority to the states and the federal government in giving them the power to create and carry out clean air plans.

The 1972 Federal Water Quality Act also calls for land use planning. Its Section 208 directs that agencies be created to carry out a waste-management plan. Now you can only manage waste by managing what goes on on the land. Congress has provided money to do just that, and the federal percentage of participation is so high as to make it very attractive. Something of a rivalry among levels of government and semi-dormant planning agencies has been created by the promise of power and purses implicit in this section.

Federal and state governments are regulating land through flood plain zoning. After several millennia, it has dawned on man that every 100 years or so the same streams overflow their banks in a regular, predictable way. From looking at the records, one can determine what is likely to be flooded in the next 100 years. This is known as the flood plain.

The classic response to floods has been to ask the local U. S. representative or senator to ask Congress to tell the Army Corps of Engineers to build a dam to store the flood water.

Some people are beginning to see that rather than building and living with the dam, it might be cheaper, fairer and more environmentally sound to tell people not to build where we know the water is going to come. It is a little hard to tear down downtown Elmira or Binghamton, but certainly this concept can be applied to new building.

An expanded program of federal flood insurance has been created, and the leverage of this program is being used to bring about flood plain planning. Some 13,500 communities have been identified as having special flood problems and to get federal insurance to help protect them, they must come up with a way of controlling building in the flood plain or lose federal help.

The federal government is also wielding control over land through its review of individual projects. The National Environmental Policy Act of 1969, which requires that all projects built with federal money or aided by federal money must have an environmental impact statement. That means that the proposers of highways, airports and reservoirs must tell the public and their fellow government agencies what the devil they are up to and what it is going to do to the environment.

Several states have created environmental impact statement requirements of their own to cover situations where there are no federal monies involved. Others are experimenting with environmental impact statements for completely private developments as well. This leverage on the budgetary process can be very effective land use control.

Another specific regulatory program seeks to control strip mining (peeling back the surface of the earth with enormous machines). Both houses of Congress have passed legislation regulating the huge impact of strip mining, and the differences in the bills are being reconciled in conferences.

Some states require the mining company to restore the land to at least some decent contour before walking away as it has in the past. The New York Legislature passed such a regulatory system this session, and it requires the mine operator to post a bond before he starts to assure that he is going to clean up the mess.

The most innovative and important changes in land use control are happening in the state capitals without federal prodding. While a rather bland bill cannot be passed in Washington, quite far-reaching controls have been enacted in Tallahassee, Montpelier, Madison and Albany.

One group of states has gone about setting up formal mechanisms for statewide planning. Hawaii was the first to move on a comprehensive basis with statewide zoning in the 1960's. Vermont, Florida and Oregon enacted statewide land use planning in the early seventies. California and Delaware have voted planning and control for coastal areas.

The mechanisms vary, but generally call for a citizen board to review projects which might have a major impact on the environment or a regional or statewide effect. A large second-home development in an environmentally sensitive area is the most common case. There is usually a minimum size of project expressed in acres, dollars or people which triggers the review process. The boards generally have the right to approve, veto or approve with modifications, and there is an appeal mechanism. The key element is to review in a broader perspective projects which have impact beyond the limited jurisdiction where they are being built, and this was precisely the kind of planning the federal land use bill was to stimulate.

Another group of states has not created comprehensive land use mechanisms, but has sought to solve specific problems with ad hoc solutions, and some of these solutions involve more stringent land use controls than the comprehensive planning statutes. In fact some argue that these state actions do go beyond that old boundary, the "taking." The details of the controls vary from state to state but a series of new legislative acts in New York State offers dramatic illustration of the fact that a series of individual state actions are attempting to solve different problems and that adds up to a lot of land use control.

The greatest impact on Long Island is the new wetlands law. Wetlands are what used to be swamps eyed for filling. Recently, we have learned that those wetlands serve their most productive and highest use by being wet, breeding fish and wildlife and serving as natural sponges for floods. In 1973, the State Legislature passed a law requiring owners of marine wetlands to get a permit from the State Department of Environmental Conservation before filling wetlands or altering the land adjacent so that wetlands are affected. Further, the Legislature said, let us have a moratorium on all filling until an inventory is made and until we know what is wet where.

Now this is absolute regulation of the most far reaching kind, and there are those who say it reaches beyond that constitutional restriction on taking without due process.

The Adirondacks are a 6,000,000-acre upstate region of mountains and high plateaus in northern New York. Six million acres is about the size of Vermont and about one-fifth the total acreage of the State of New York.

Of the 6,000,000 acres, the state owns about 40 percent. By the Constitution, its land is "forever wild." That means that nothing may be built and that a tree may not even be cut. New Yorkers have taken this constitutional wilderness protection quite seriously over the years, and any public official who moves toward more development faces an aroused constituency and likely a lawsuit.

On the other 60 percent of the Adirondacks which is privately held, there have been virtually no restrictions. The Coney Island roller coaster could have been moved to the heart of the Adirondacks so long as that particular section of the heart was privately owned. Indeed, some of the tourist "attractions" that have sprung up in the Adirondacks appear to have been conceived by designers of the Early Coney Island school. To complicate the issue further, the public and private land are intermingled in a jumbled pattern. In some townships, there is a checkerboard pattern where every other building is state owned and constitutionally "forever wild" and the intervening holdings are completely unprotected.

After a series of study commissions and legislative battles, the Legislature in 1973 created an Adirondack Park Agency which exercises a degree of control over what happens on the *private* land. There are still fights being fought and issues decided, but the principle that the state does have sufficient interest in what happens on *private* lands to participate in its control has been established. For example, in the most sensitive category, the agency limits development to one structure on 42 acres.

The Catskill Region, too, is protected by the Constitution of the State of New York, but here the situation is different. Of a total of 2,000,000 acres, only about 248,500 are in state ownership and thus "forever wild." The remaining private land has been subject to intensive development because of its proximity to population centers.

The road to state land use control has opened up with the creation of a Temporary Study Commission of the Future of the Catskills. While its report is not due until next year, it may well follow the pattern of the Adirondacks with some sort of state participation in land use control tailored for the Catskills.

Governments have also recently come to the conclusion at the urging of conservationists that the unspoiled rivers and streams of the country are worth trying to save before they get channeled, developed and dammed out of existence. New York has authorized a system of wild, scenic and recreational rivers. The real function of the legislation is land use control. In order to protect the wild or scenic and recreation values of a river, you really don't do anything to the waters, you do something about what goes on on the banks.

The Legislature has directed the Department of Environmental Conservation to study 46 rivers and come up with rules and regulations for their preservation.

The quality of the environment is determined more by the land that is now or once was farmland than any other factor. New York is not generally thought of as a great agricultural state but about a third of its surface is farmland. Farmland, usually the best land, is under intensive pressure for development. Nationally, over a million acres of farmland each year are turned into something else, and usually that something else has a lot of blacktop and concrete on it. The pressure on farmers to sell is strong not only because of an attractively high price but also because of at least two habits of government.

One is that public agencies themselves gobble up a lot of land for highways, airports and so on. Taking a farm with two or three people who do vote and a lot of cows who don't is much easier politically than tearing down buildings where people live or work. The second is that most land is assessed at its highest and best *potential* use; thus, if a farm is in the path of development and could be a housing subdivision rather than a farm, it is assessed and taxed as if it were subdivision land. This becomes a self-fulfilling judgment because the farmer cannot afford to farm at that tax price even if he wants to. He takes the developer's dollar.

Suffolk County is using another method to preserve farmland: the purchase of development rights from the farmer so that he owns the land only for farming purposes and no longer has the right to sell it for development. In many cases, this development right is worth virtually as much as the entire value of the land, but at least it keeps the farm going.

The point of all this is, of course, that state and federal governments are now controlling use of a lot of the private surface of this country. If we took a map of the United States and began a series of green overlays for each federal or state control, it might look something like this:

- First, color the lands under the jurisdiction of the Federal Water Pollution Control Act, Clean Air Act, Coastal Zone Management and Flood Plain Zoning and various kinds of project review.
- Then green up states like Oregon, Hawaii, Vermont and Florida which have a form of comprehensive planning.
- Add big chunks of California, Maine and Delaware which have controls over coastal zones.
- Add most of New York and other states which have a collection of special regulations covering wetlands environmentally sensitive regions, agricultural lands and wild and scenic rivers.

When the overlays are completed, we would find that a substantial part of non-urban, privately owned America is colored green. We would also find that faces aren't as angrily red as those during that House debate. Although there are still problems, debates and litigation, land use control is working. People are finding that planning is not a Marxist or Machiavellian scheme but that it makes sense. The Adirondack Park Agency has already handled some 200 applications; builders and landowners are finding that the regulations are not unreasonable, some even agreeing that developments may be improved by bureaucratic review.

The congressional opponents' predictions that grass would grow in the streets if the federal government got into land use planning is being put to the test and found to be not true. More grass and trees are growing where they ought and development has not been brought to a halt. Some expectations of huge profits have been reduced, but substantial areas have been saved from shoddy development.

What is needed now is a systematic approach to land use planning in all the states rather than the patchwork approach of our series of overlays. What has been wrought in the name of specific environmental problems such as wetlands, farmland or flood plains can be brought together as land use planning. We've found it doesn't hurt that much. Perhaps the federal government should stimulate and coordinate what's going on anyway and put some money up to improve the quality of the planning — say a federal land use planning act.

EQ News Briefs

During the 1974 session, the New York State Legislature adopted a law authorizing the Commissioner of Environmental Conservation to establish a list of rare and endangered plants which should not be picked or removed from their natural habitat. The new law makes it unlawful for any person to knowingly pick or remove, without the consent of the owner, any protected plant. A violation is punishable by a maximum fine of $25. Commissioner Biggane has named an advisory council to compile a list to be adopted by April.

* * *

In reporting on progress in cleaning up New York's 22-county area of the Great Lakes Basin, DEC's first deputy commissioner, Ronald W. Pedersen, said that well over 500 million gallons of sewage which formerly found its way into the Great Lakes daily is now being treated. More than $200 million in state aid to localities for 160 sewage treatment projects since 1965 and private industry resources have made this improvement possible. In looking toward the future of the Great Lakes Basin resources, Governor Malcolm Wilson has urged establishment of an investigative board to study the Lake Ontario-St. Lawrence System to discover whether improved regulation of lake levels would be feasible.

* * *

Nearly 17,000 youngsters from more than 1,100 schools participated in a Current Science newsletter survey to map the magnitude of the acid rainfall problem on a nationwide scale. Armed with specially-treated "hydrion" paper, the student-scientists measured the pH of rainwater. The National Oceanographic and Atmospheric Administration have finished analyzing their findings. Acid rain is thought to have serious impact on plant and animal life.

* * *

A recent federal study revealed that carbon monoxide from auto fumes has saturated the blood of urban dwellers to a point where about half the nonsmokers in a sample of nearly 30,000 people contained more of this pollutant in their systems than is considered "permissible" under federal safety standards. Furthermore, the blood of cigarette smokers and of cab drivers and others in similar occupations was found so highly polluted that it could not be used for infusions to patients with heart ailments. In cities where there is great reliance on the automobile, rather than mass transit, such as Los Angeles and Denver, blood pollution was most severe.

* * *

Glenn L. Sapir, senior editor of Field and Stream, reports in the April 1974 issue of The Southern New York Sportsman that Union Carbide has been successful in rejuvenating 132-acre Lake Waccabuc in Lewisboro "from the eutrophied lake from which nearby residents turned upwind and fishermen avoided, into a waterhole capable of sustaining a planted trout population." Its oxygen content and hence its life are being gradually restored by aeration. Union Carbide is also experimenting with another system, side-stream pumping, at the Attica Reservoir. EPA estimates that 40 percent of U. S. lakes suffer from moderate to advanced eutrophication.

* * *

New York is one of seven states opting to spend $2 million allowable maximum in federal funds for walkways and bikeways. The U. S. Department of Transportation has announced a list of 23 states requesting funds totaling $24,100,275. About $6 million will be spent for bike projects on federal lands.

* * *

Heat transported by the Gulf Stream through the Florida Straits could one day produce all the electricity now used in the United States. Ocean thermal differences energy is now being studied under two recently-awarded National Science Foundation grants to Dr. William E. Heronemus, University of Massachusetts, and Dr. Clarence Zener of Carnegie-Mellon University. Both proposed plants, one in the Gulf Stream and the other in the Caribbean, would use warm surface water to vaporize a working fluid of propane or ammonia, which in turn would drive power plant turbines. Then the vapor would be returned to its fluid state when condensed by frigid water brought up from deeper regions.

* * *

Questionable advertisements by the American Electric Power System against stack gas scrubbers were recently charged with being false and misleading by EPA Administrator Russell E. Train. Citing ad language such as "scrubber systems applied to large coal-fired power plants would produce in five years enough oozy gook to destroy and cover 10 square miles of America to a depth of five feet," Train pointed out that several scrubber systems are available, four of which create a saleable byproduct and no sludge. The issue, as he sees it, is "whether utilities will make the necessary efforts to make the technology work at individual locations by solving the site-specific problems that responsible and aggressive firms have solved."

* * *

Radio-equipped deer are sending signals to researchers at SUNY College of Environmental Science and Forestry's Newcomb Campus who are studying seasonal ranging patterns of deer. The biologists have trapped and tagged nearly 300 deer since 1968. During the last three years, 76 does have been equipped with collars bearing radio transmitters. Twelve bucks have been equipped this summer with transmitters mounted on special expandable collars to allow for neck expansion during the rutting period. If a radio-equipped deer is shot, the hunter should contact the Adirondack Ecological Center west of Newcomb on Route 28N, or call (518) 582-4551, or in the evening, 582-4602.

* * *

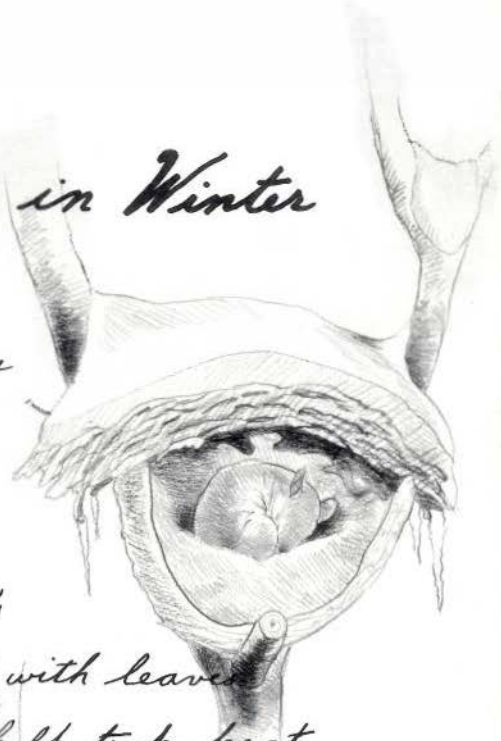
A 400-mile underground oil pipeline may stretch across New York and central New England to link a supertanker port in Rhode Island with refineries in Oswego, N. Y., according to plans of New England Petroleum Corp., a major New England oil supplier. The construction of the 36-inch diameter conduit from Oswego to Albany was expected to begin during the summer. A NEPCO refinery with a 200,000 barrel a day capacity was being constructed adjacent to Niagara Mohawk's Oswego power plant. NEPCO representatives indicated that alternate proposals were being studied for super tanker ports at the opening of the St. Lawrence and Hudson Rivers.

* * *

Straddling the Rio Grande and stretching into the desert highlands, a 220,000-acre ranch has been given to the federal Fish and Wildlife Service. This tract, located 65 miles south of Albuquerque, N.M., is the largest tract ever donated as a wildlife refuge. It is one of the last unspoiled desert grassland and brushland areas in the valley.

Sketch Book Look at Keeping Warm in Winter

Scaups and other ducks trap body heat with a layer of down beneath the main water-resistant feathers.



White-footed mice achieve the same result by lining an old bird's nest with cattail fluff and capping it with leaves. The air spaces between the dead leaves help trap heat.

Meadow mice nests are often built downwind from brush and the resulting thick blanket of snow also helps insulate.

Meadow mice build nests with several distinct layers of grass, each layer at a different angle. Rain, snow and soil dampness are kept out.

Deer, when well fed, can withstand considerable cold. Their hair is hollow and, when dry, holds body heat.

Muskrats on large bodies of water will sometimes cover their feeding platforms with dark reeds and mud. The heat absorbent quality of the dark material helps keep ice from forming.

Chipmunks often use the combined insulating qualities of a log, dead leaves and their winter cache of nuts and berries.