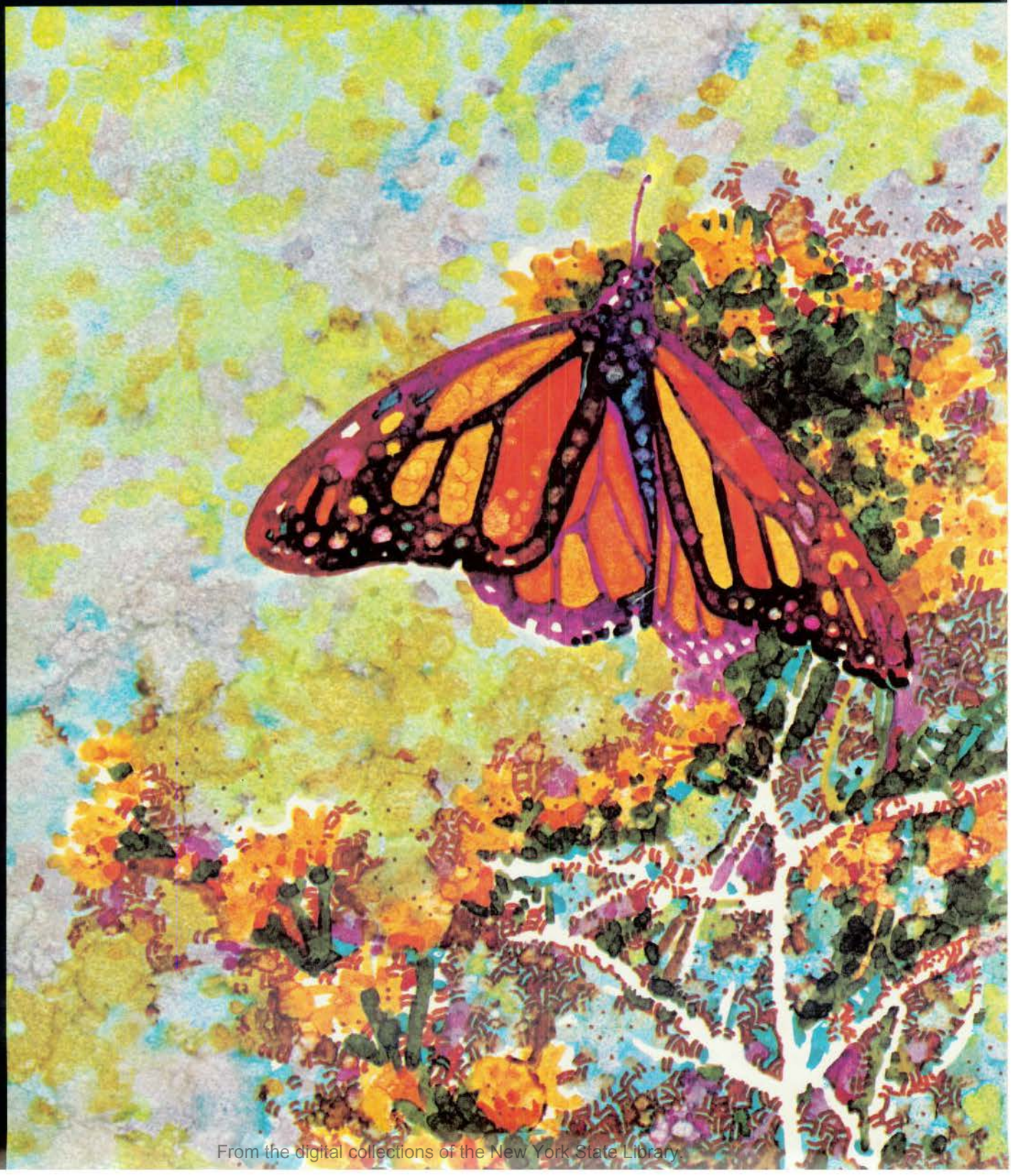
THE CONSERVATIONIST

JUNE-JULY 1973 75¢

PEOPLE'S PARKS ON THE BARGE CANAL

New York's Wild Rivers



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THE CONSERVATIONIST

Volume 27, Number 6 / June-July 1973

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Printed on recycled paper

The Conservationist is an official publication of the N.Y.S. Dept. of Environmental Conservation, published bi-monthly at the Department's office, Albany, New York 12201. No advertising. Subscriptions $2 per year, 3 years $5. Special rate of $1 per year for subscriptions received by a primary or secondary school in New York State, or at such schools by teachers. NO STAMPS PLEASE. Magazines not delivered through failure to send change of address six weeks in advance cannot be replaced. Second Class postage paid at Albany, N.Y. Additional entry office at Depew, N.Y. Printed in U.S.A. POSTMASTER (Re undeliverable Second Class matter): Send form 3579 to THE CONSERVATIONIST, Box 2328, Grand Central Station, New York, N.Y. 10017. © 1973 by N.Y.S. Dept. of Environmental Conservation.

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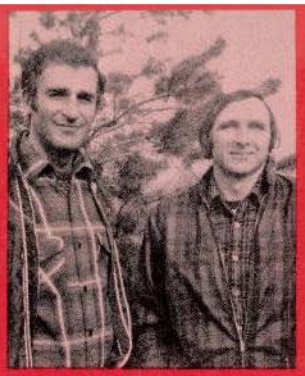

JUBINVILLE, DOWD

MORSE

TUCK

REILLY

ALDRICH

ALEXANDER ALDRICH (Parks on the Barge Canal) is Commissioner of New York State Parks and Recreation. In August 1972 he lived on the canal for three weeks aboard "Strider," his 36-foot Beals Island lobster boat. From this inland voyage came our article and a firming-up of plans to create recreational areas along the canal system. Mr. Aldrich, a native New Yorker, is an experienced boatman, an educator, forester, beef cattle farmer, lawyer and an administrator in State and city government. He has served as Deputy Commissioner of the New York City Police Department, Director of the New York State Division for Youth, chairman of a Special Cabinet Commission for Civil Rights, executive director of the Hudson River Valley Commission, president of the Brooklyn Center of Long Island University, and chairman of the Taconic State Park Commission. He was appointed to his present post in October 1971.

Another inland voyage is described by ROBERT P. JUBINVILLE and JOHN F. DOWD (Adirondack Odyssey) who are respectively educational communications director and science teacher at the Jamesville DeWitt Middle School. Bob, 34, lives at Minoa and John, 32, at Lafayette. Both are married, have children, and jointly teach sailing and camping. Their hobbies also include cross-country skiing, golf and photography.

ROGER A. MORSE (Tracking the Wild Bee) is professor of apiculture at Cornell University. He has been involved with bees since he was 10 years old, when he was given a hive by his father. During World War II he and his father maintained several hundred bee colonies in the Hudson Valley and the Catskill Mountains, which they operated for honey production. Morse took his bachelor's, master's and doctor's degrees at Cornell; his work for the master's involved making mead, or honey wine, and last year he and an associate at Cornell received a patent for a mead-making process they developed. After receiving his Ph.D. Morse worked for the Florida State Plant Board as a bee specialist and was assistant professor of horticulture at the University of Massachusetts. He returned to Cornell as a member of the faculty in 1957.

His most recent book is "The Complete Guide to Beekeeping," published by E. P. Dutton & Co., which will be reviewed in an early issue.

RICHARD S. ALLEN (The Professor Rang a Bell), is program director for the New York State American Revolution Bicentennial Commission, attached to the Office of State History in Albany. A native of Saratoga Springs, he was formerly a free-lance researcher and writer, specializing in the history of civil engineering, heavy industry and aeronautics. Among his books are four dealing with covered wooden bridges, and an award-winning history of early Lockheed aircraft. "I guess most of my interests stem from a love of geography," says Rick, who enjoys travel. "There are still hundreds of back roads in New York State I want to explore." He and his wife now live in Charlton, and have a year-round camp on Great Sacandaga Lake.

EDGAR M. REILLY, JR. (Pigeons) is Curator of Zoology at New York State Museum and a frequent contributor to this magazine. He is the science editor of "Primer of Pollution" scheduled for publication this year and has written articles on various birds for Encyclopaedia Britannica Junior. He serves as consulting editor on natural history and scientific subjects for Yale University Press, World Book Company and McGraw-Hill (Our Living World of Nature), Funk and Wagnalls, Readers Digest Books, Larousse Encyclopedia of Animal Life and other publishers. Dr. Reilly was born in the Bronx in 1916. His education at Cornell was interrupted by service in the U.S. Air Force during which he was a Jungle Survival Officer on the China-Burma-India front. He earned his B.S. in 1948 and his Ph.D. in 1954. He is a past scoutmaster and past president of the Federation of New York State Bird Clubs.

For our article on early Indian art we were fortunate in getting the world's foremost authority on the subject, JAMES A. TUCK (10,000 Years Before Columbus) chairman of the anthropology department at Memorial University of Newfoundland. Dr. Tuck was born at Tonawanda in 1940 and earned his A.B. and Ph.D. at Syracuse University, the latter degree with a dissertation on Onondaga Iroquois prehistory. His interest in the prehistoric Northeast takes him to Northern Labrador and to Anticosti and Prince Edward Islands. The work calls for skills at boating, backpacking and camping in arctic weather. He has written for Scientific American and other publications.

FRED G. HAAG (Pollution in Your Ear) is a Principal Acoustical Engineer and director of the Bureau of Noise Control in this Department with the responsibility for planning, organizing and coordinating the State's fight against noise pollution. Prior to his appointment he taught noise control and acoustics at Union College for five years. Before this he was supervising engineer at Knolls Atomic Power Laboratory. He also taught at RPI, consulted with the General Electric Research and Development Laboratory on vibration problems and designed nuclear reactors at Oak Ridge National Laboratory. He has conducted research on rocket control systems for N.A.S.A. and has written more than 30 scientific papers, books and reports.

RAYMOND E. FALCONER and ROGER J. CHENG (Hail) are col-

(Continued on page 40)

NOTES ON OUR CONTRIBUTORS

HAAG

ALLEN

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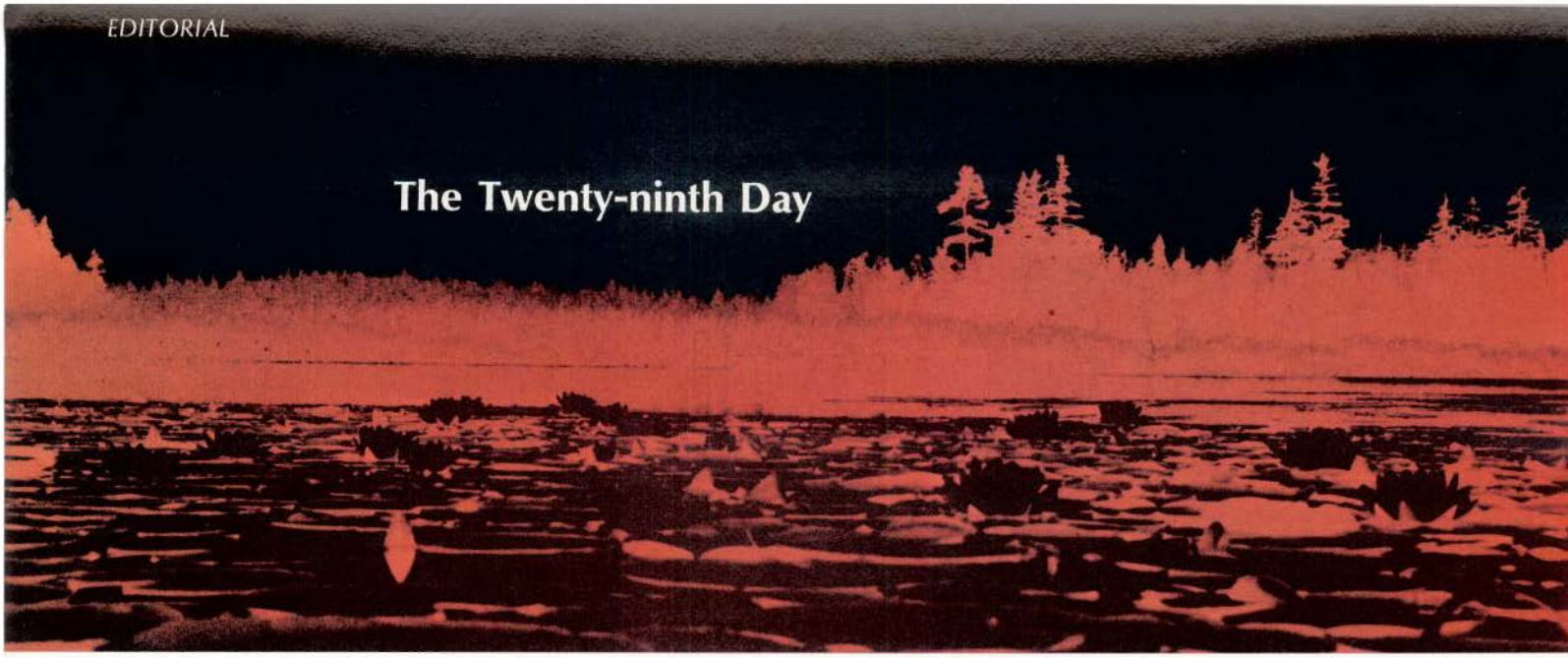

The Twenty-ninth Day

IF there were two newspapers in town, one which printed only good news, and one which printed only bad news, the latter would soon be out of business. For most of humanity there is a built-in antipathy to ill tidings. Except for that handful of skeptics who dote on the dark side, most of us refuse to recognize problems until there is no other alternative. The ancient kings slew the messenger who brought them bad news; we either ignore him or suggest that he needs psychiatric help.

This is the situation today in a world which is threatened with pollution and a population expanding more rapidly than the world's capacity to provide for its needs. A substantial portion of the people sufficiently literate to be aware of this proposition choose to close their minds to it. Among the large volume of letters we receive from our readers there are many who not only exhibit closed minds but abuse us for our modest efforts to open them.

This refusal to examine unpleasant fact has sometimes been attributed to a fear that society is incapable of solving the massive problem of pollution and overpopulation. If we shared that fear we might also join their club and let the fiddling of the Neros drown out the crackling fires of Rome burning. We do not. We are profoundly confident that society — by that we mean the people and their governments — has the capacity to find solutions. We also believe society will generate the will to solve the problems, but it will do so only when it is willing to face all the facts, favorable and unfavorable.

One fact is that man's works multiply in a linear manner while nature's growth is exponential. Put simply this means that man creates by adding one plus one plus one . . . etc., whether it is houses or ships or cultivated acres; nature grows by adding two plus four plus eight plus sixteen . . . etc. A tractor factory, for instance, might turn out 100 tractors a day, and thus each day would add only 100 tractors to its total production. In nature, each cell divides to produce two cells, each one of which divides to produce two, and so on. Plants, animals, insects and even man increase in this way, their potential limited only by predators, disease, disappearance of habitat and lack of food.

Authors of the book, "The Limits of Growth" quote a riddle to demonstrate the suddenness with which exponential growth approaches a fixed limit:

"Suppose you own a lily pond on which a water lily is growing. The lily plant doubles in size each day. If the lily were allowed to grow unchecked, it would completely cover the pond in thirty days, choking off the other forms of life in the water. For a long time the lily plant seems small, and so you decided not to worry about cutting it back until it covers half the pond. On what day will that be? On the twenty-ninth day, of course. You have one day to save your pond."

Fortunately this is not our "twenty-ninth day." We have more than 24 hours to save the pond, but how many more is anyone's guess. We must utilize that remaining time to examine the growing scarcity of essential minerals and other non-renewable resources. We need to study the part industrial technology plays in producing pollution and put technology to work in curbing pollution and recovering waste materials. Above all we must explore the means of creating an equilibrium between population and the resources necessary to sustain it.

The job to be done, therefore, is to develop as rapidly as possible among the people an understanding of the problem and its solution, keeping in mind that world population doubles in 32 years.

This magazine is dedicated to the enjoyment of nature and the outdoors, and to the conservation of those natural resources which make that enjoyment possible. This requires of us that we state the case for environmental protection and improvement as frankly and truthfully as we know how. We intend to contribute what we can to the people's understanding of the threat to their world and the actions which must be taken to save it. We have only one lily pond; we will celebrate its beauty and strive to restore its purity. Given courage, wisdom and a little luck, mankind will avoid the agony of the twenty-ninth day.—The Editor

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Adirondack Odyssey

Sailing the Fulton Chain canoe route

Editor's Note—One of New York State's stellar attractions for canoeists is the Adirondack canoe route from Old Forge to Tupper Lake. A picturesque passage through wild and beautiful Adirondack scenery, the 85-mile route covers twelve lakes of varying size and shape, two rivers and a minimum of six portages. Robert P. Jubinville's and John F. Dowd's lively story in text and pictures gives that recreational water route a new perspective — they traveled in sailboats! Because of space limitations we are only able to publish excerpts from Mr. Jubinville's account of the trip, and do so with his permission.

Text and pictures
by
Robert P. Jubinville and John F. Dowd

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Unpacking the gear

"Our primary objective was to prove the feasibility of an extended sailing-camping trip."

Casting off at Old Forge

FIVE days of camping on Long Lake in 1970, using a pair of Sunfish sailboats instead of the customary canoes or motorboats for both transport of gear and fishing, convinced John Dowd and me that the whole concept of sailboat camping on a budget was worthy of further exploration.

We spent a cold winter's evening in my living room discussing our expedition for the 1971 summer vacation. In selecting a route which would provide a variety of experiences, we settled on the Adirondack canoe route from Old Forge to Tupper Lake.

The route covers twelve lakes of varying size and shape, two rivers and a minimum of six portages—circumstances which shaped our choice of sailboat. Our primary objective was to prove the feasibility of an extended sailing-camping trip which would have implications for all sportsmen and their families. An important point we included was a desire to show that mobility need not have a detrimental effect on our deteriorating ecology.

Our discovery of the Sunflower — billed as the "Volkswagen of Sailboats" — enabled us to illustrate the potential of a maximum return for a minimum investment. A trim little craft with an overall length of eleven feet and a three-foot beam, the Sunflower is constructed of thick Styrofoam, coated with a durable space-age plastic. The boat weighs sixty pounds yet has a load capacity of 500 pounds, carries a 45-square-foot nylon sail on an aluminum mast and spars — all for a little over $200.

The rising sun was just beginning to burn off the early morning fog as John and I pulled up to the Old Forge public dock. Both boats were mounted gunwale to gunwale on my trailer in a clamshell arrangement. Our camping gear, spars, sails, rudders and daggerboards were inside the boats which were strapped together with shock cords.

We loaded the craft and cast off at about 9:30. A gentle breeze picked up and we headed up the channel toward First Lake, the initial body of water on the Fulton Chain. Within five minutes of launching John discovered that he could use his life jacket as a pillow on the transom, lie on his back with the tiller over one shoulder, and control the mainsheet with his big toe. This technique, coupled with the mountain of gear stowed in the bow, attracted lots of attention and comment as the bright yellow Sunflowers ran through the populated waters during early stages of our journey.

As we ate lunch on the dock at Ted Anthonson's seaplane base on Fourth Lake, we discussed our progress to that point. The winding channel between Third and Fourth had presented no problem. Our luncheon menu was the first of our 14 freeze-dried meals.

On Fourth Lake, the largest of the Fulton Chain, we encountered heavy motorboat traffic. The sprightly little Sunflowers rode over the big waves like corks. Leaving Fifth Lake, we entered a narrow channel where, for the first time, our paddles came into play, soon reaching the first portage. Leaving the boats behind we donned packs and hiking boots and negotiated the three-quarter mile carry to Sixth Lake.

The temperature was in the 90's as we carried our boats past other boaters burdened with their heavier canoes.

Later, on Sixth Lake as I rapidly bore down on the highway bridge separating Sixth and Seventh Lake, John yelled a warning. I rammed the tiller hard to port and headed into the wind. From my cockpit it appeared that I had enough clearance — now obviously a mistake. We dropped our sails, paddled beneath the bridge, then hoisted them for the final run of the day.

We pitched our first camp on State land about three-quarters of the way down the northern shoreline of Seventh Lake. In less than half an hour we had our tents pitched and our ham and cheese supper rehydrating. The secret to preparing top quality freeze-dried meals is allowing enough time for the food to absorb back the moisture that was taken out in processing.

Before turning into our tents we sat

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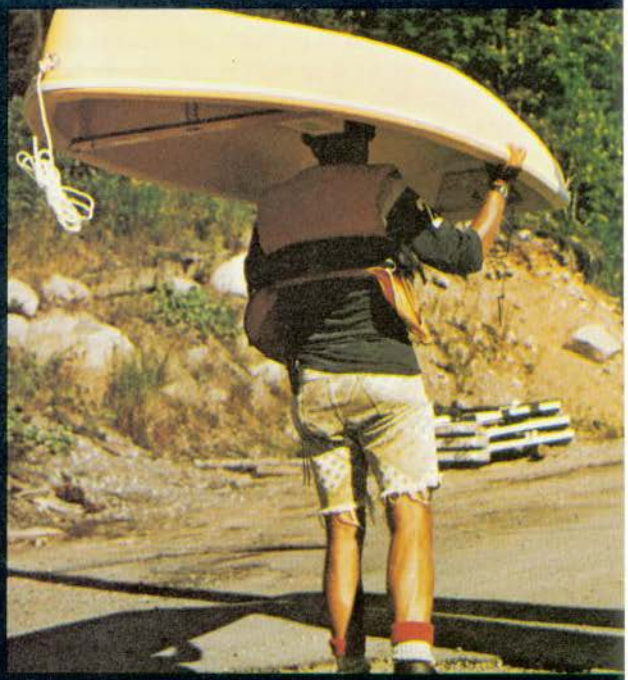
A new use for the big toe



First portage — ¾ mile to Sixth Lake

on the shore over our pipes and hot coffee, listening to the hypnotic music of the waves.

Next morning as we paddled through the stump-strewn channel at the head of Seventh Lake, we were amazed at the ease with which we negotiated the mile to the portage. The carry from the head of Seventh Lake to the Eighth Lake campsite could have been avoided. After depositing our packs at the end of the portage, we learned from a camper that we could have paddled through an inlet which comes into Eighth Lake next to the beach. We both figured it was worth a try, so we dumped the boats into the stream leaving Seventh Lake and paddled toward the brushy flats.

The narrow stream was quite deep at first, but as its meandering course took us further from the landing, the water became only inches deep. At the same time, the surrounding foliage closed in until we were paddling through a green tunnel with a canopy so thick the sun could barely pierce it.

Eventually the erratic course, shallow water and numerous beaver dams forced us to wade, dragging our diminutive "African Queens" *a la* Humphrey Bogart.

The swimmers at Eighth Lake beach were startled as two grubby, bearded characters dragging sailboats emerged from the thick jungle at the mouth of the inlet. After sponging out the hulls, we were off again before the wind, taking time for a swim before reaching our next landing and portage. This time we took the boats over in two trips — a more time-consuming method but one which seemed physically less taxing to our protesting city-life muscles.

It was after five before we cast off into the Brown's Tract Inlet which would ultimately bring us to Raquette Lake, a paddle of almost three miles.

The inlet is a narrow, deep, winding series of switchbacks which often had us conversing although not in sight of each other. The primitive beauty is overwhelming and merits a more relaxed pace than we had allowed ourselves. Two beaver dams failed to daunt our progress. By standing up in the Sunflowers, grasping the gunwales and jerking forward, we didn't even get our toes wet.

At Raquette Lake, after a stop at the general store, we headed for Big Island, a public camping area, where a kind-hearted family of campers helped us set up our tents in the darkness. That night a bear could have chewed off my leg and I wouldn't have known it until I tried to walk to the lake next morning.

The next day's sail was exhilarating before a wind whipping up the lake. Despite the combined weight of the equipment and us we covered the eight miles from Raquette Lake village to the far end of Outlet Bay in less than two hours. The ½-mile portage to Forked Lake turned out to be the easiest carry of the entire trip. Although the landing at Forked Lake is on private land, the State has maintained a right-of-way for canoeists.

It was past 4 p.m., but great weather and favorable winds encouraged us to relax our pace and savor our extraordinary journey. The 3½ miles to the Forked Lake Public Campsite took only 40 minutes.

At the campsite we purchased ferry service via station wagon for our boats and gear around a tough 2½ mile portage. A group of eager Boy Scouts helped us make camp, and that night even the raccoons clattering among the pots, pans and our Svea stove failed to dent our slumber.

The next morning we loaded packs, masts, sails, daggerboards and rudders into John's Sunflower, tied his painter to

For more information about canoeing in New York, including a map of the Adirondack canoe routes, single copies of Department publications are available free of charge. Ask for *Canoe Trips* and *Adirondack Canoe Routes.* Write to: Publications, Room 107 N.Y.S. Department of Environmental Conservation, Albany, N. Y. 12201.

From the digital collections of the New York State Library.

an eyehook in my transom and the two of us cast off in my boat with the heavily laden cargo boat trailing effortlessly behind. The widening river and a fresh breeze soon caused us to head in and redistribute our gear for sailing. Rigging the craft for sailing is a simple affair.

A temporary setback with the loss of John's rudder pin was overcome by two minutes spent whittling a replacement from a springy spruce branch which held up well during the five-mile run to Long Lake Village through steady drizzle, frothy waves and choppy water. We didn't really need the stove bolts we bought in the village to use as spare rudder pins.

We enjoyed the brisk sail on white-capped water, and it was with some reluctance we put in to the beach for the night's camp. By 3:30 we had our camp all set up and had finished a lunch of ham salad, lemonade, pecan cake, cookies and candy bars. That afternoon I took my Sunflower out into the lake where I put the boat through a series of maneuvers deliberately designed to capsize it and otherwise test it for safety. The results, recorded by John with a telephoto lens, support our theory that the Sunflower has a wide safety factor. As a final test, I purposely swamped the boat and sailed her back to camp with a full load of water and a healthy respect for her capabilities.

Three hours of fishing that night on the now tranquil waters of Long Lake failed to produce any lunkers, but we did bring in four smallmouth bass of respectable size. John wrapped each fish in a double seal of aluminum foil along with a package of freeze-dried onion soup, some olive oil and a portion of brandy. Each package was then submerged in a bed of hot coals, and in a little over five minutes the fish were done. Sheer delight!

That night we tried sleeping in the lean-to for the first time. Voracious mosquitoes drove us to the protection of our tents which had netting in the windows.

Our fifth day looked like an instant replay of the previous day. The air felt heavy and wet, the sky was overcast and the clouds hung low over the wind-churned lake. At the end of a four-mile sail to the mouth of the Raquette River at the lake's outlet we furled our sails for the last time on the trip. Again we loaded all the gear in one boat.

Travel on the river was unlike anything we had done up to that point. We had covered over 50 miles in the four and a half days and had navigated 11

Above (clockwise from top left): Shallow tow between Seventh and Eighth Lakes; a refreshing swim; camping at Axton Landing; putting the Sunflower through its paces on Long Lake. Below: A life of ease.

Opposite page: (top) Towing on the Raquette River; (center) sunrise on Seventh Lake; (bottom left) spruce branch replacement for a lost rudder pin; (bottom right) tying down for the trip home.

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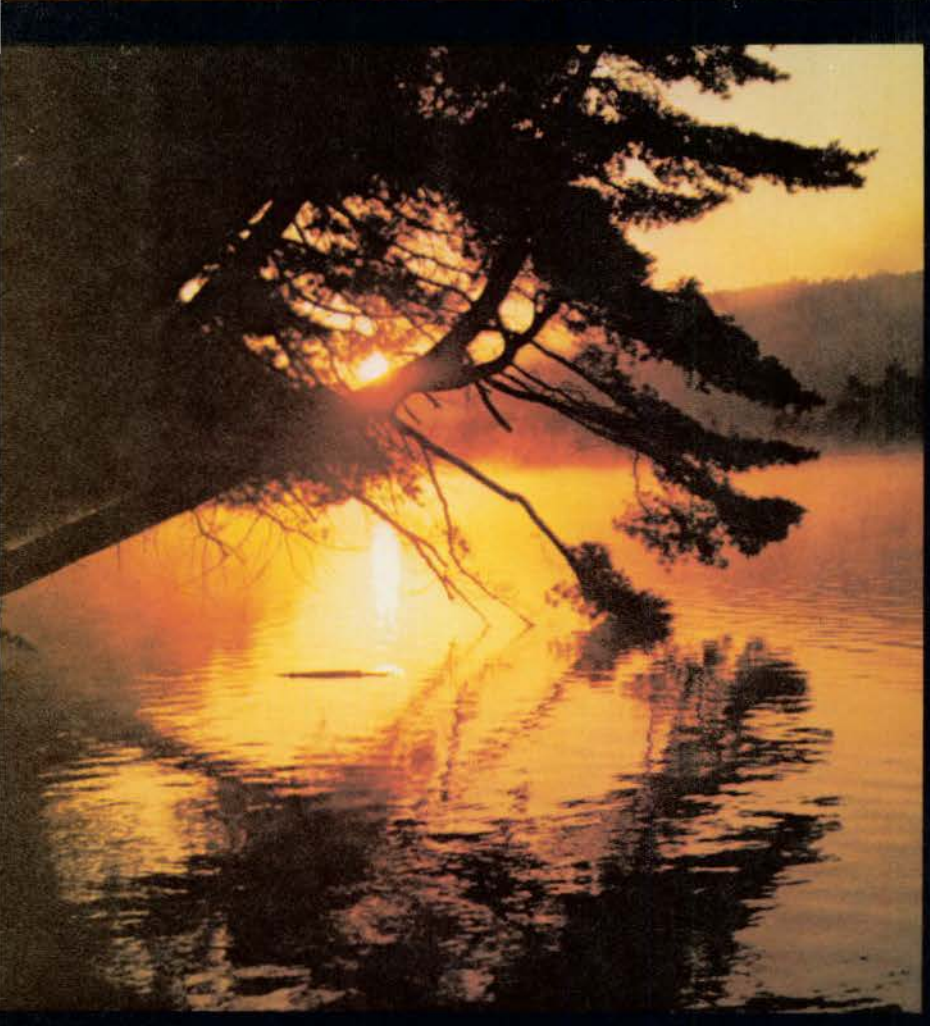

lakes in doing so. Most of the journey was high-keyed with the exhilaration of travel under sail. Now all was changed as we guided the Sunflower and rode the river current. The Raquette is so winding a river that the traveler is constantly rewarded as he rounds one bend after another. We lunched on the river with the top of the daggerboard well serving as our galley.

Shortly after 2 p.m. we arrived at Raquette Falls where we faced a mile and a quarter portage across the most rugged terrain yet encountered. Dormant muscles responded and the carry went well, with three trips across. By placing the narrow bow on my shoulder atop a rolled up towel, I could enjoy unrestricted vision. John, beneath the rear of the boat, had to take my word for a lot of things.

We found that lightweight freeze-dried foods coupled with a small backpacker's stove made mealtime chores a breeze. Campers undertaking a shorter trip by sailboat, or one which does not involve much portaging can take liberties with their choice of food and drink. It is possible to replenish supplies at various points along the route.

That night we had plenty of company along the riverbank. After the portage, most canoeists are ready to make camp. After supper, John and I sat around the campfire watching some novices preparing tuna noodle casserole in a gigantic pot. I have mixed emotions about the success or failure of this project. The kids dove into it with relish and downed enormous quantities of the stuff. However, raccoons who raided the camp in the middle of the night wouldn't have anything to do with it.

By one o'clock the next day we had made only five miles and it was obvious we weren't going to make Tupper Lake without a lot more work. After covering only one more mile, we pitched our tents at Axton Landing, determined to get a good night's sleep to fortify us for the 18 miles to go on our final day.

After supper, eaten in John's tent while rain drummed down, we dug out our rain parkas and hiked down a dirt road to the home of H. W. Hallenbeck. He was not home, so the trip had to be repeated that night in pitch blackness. We hired Mr. Hallenbeck to pick us up the following morning. A canoeist with a radio had told us severe storms were moving into the area, and we were glad later for our decision.

(Continued on page 40)

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1

Prehistoric people of the Northeast created their own art, some with religious overtones, some merely decorative

10,000 Years Before Columbus

by James A. Tuck

2

3

4

5

1. Stone effigy mask, late woodland 2. Antler comb, historic; bird stones, early woodland; banner stone, late archaic 3. Round bottom jars, late woodland 4. Conical bottom jar, late woodland 5. Wooden effigy ladle, historic 6. Bird effigy, late woodland 7. Bird bone flutes, woodland 8. Antler comb, late archaic 9. "Great Rim Walker" mask (wood), historic 10. Quill decorated pouch, historic 11. Bird effigy comb, late woodland 12. Glass necklace, historic 13. Copper necklace, early woodland 14. Smoking tubes, early woodland; clay and carved pipes, late woodland. (Artifacts courtesy N.Y.S. Museum and Science Service and Rochester Museum of Art and Science)

THE area known to anthropologists as the Northeast stretches from the Middle Atlantic States to Labrador and inland to the western Great Lakes without regard to state, provincial, or national political boundaries. It has been the scene of archaeological investigations of one sort or another for more than a hundred years.

The archaeological cultures of the Northeast have produced a number of interesting ornaments, tools, and weapons which display considerable aesthetic sense and ability. They are of stone, bone, antler, pottery, occasionally other materials, and are usually very skillfully carved or modeled.

These different kinds of artistic expression — from simple decoration of everyday objects to lifelike carvings of animals, birds and even humans with no apparent utilitarian function — do not easily lend themselves to a single mode of analysis. Perhaps therefore the best way to approach a discussion of aboriginal art is to try and make distinctions of two types. First among the cultures and peoples themselves by using the periods described by archaeologists and secondly between two general types of art themselves — decorative art and art with some possible religious or magical overtones.

Even this approach has several drawbacks for in the one case the culture periods themselves are not clearly bordered by any temporal and spatial boundaries and in the other it is often difficult to distinguish between designs intended simply for decorative purposes and those with some deeper symbolic meaning.

With these cautions in mind let us now look at some examples of art forms found in the three major cultural periods in the prehistoric Northeast — the Paleo-Indian hunters, the Archaic hunters, fishers, and gatherers, and horticulturists of the Woodland period.

The Paleo-Indians 10,000-7000 B.C. — A series of talc pendants, the oldest surviving decorative objects in the Northeast, from the Reagen site, Franklin County, Vermont was found by two local Indian relic collectors and may be as much as 9,000 years old. Most are cylindrical or conical with a single perforation for suspension but one larger, flat example, also perforated for suspension, has an incised decoration on one face which is vaguely reminiscent of the plastron or lower shell of a turtle. This apparently has little to do with the spiritual life of a people whose subsistence was based upon the hunting of caribou and other large game, perhaps even mammoths and mastodons, but its very exis-

From the digital collections of the New York State Library.

tence indicates that aesthetics were not ignored by the first residents of the Northeast.

The Archaic Period 7000-1000 B.C. — For a few thousand years following the demise of these early people there seems to have been a very sparse population in the Northeast, perhaps because of a climax forest eonsisting largely of pine which provides little sustenance for mammals and therefore holds little attraction for the human groups who prey upon them. Traces of *any* archaeological material, especinlly art objects, are very rare from this time hence there is presently a 4000 or so year gap in our story.

With a change in environmental conditions sometime around 3500 to 3000 B.C. archaeological sites became more numerous with an increase in the number of decorated artifacts and distinctive art objects.

Archaic (a period defined by its antiquity and hunting-fishing-gathering economy) artists used those available natural materials readily at hand and with which they were most familiar — stone, bone, antler, and probably wood, bark and other perishable substances.

In the mixed forest along the Atlantic coast and inland across the southern portions of the Northeast there was a widespread group of loosely related cultures which apparently drew inspiration from the Atlantic coast and, to a lesser extent, the Mississippi drainage with a good deal of local and regional elaboration as well. Coastal sites seem remarkably devoid of decorated or curved objects in non-perishable materials but as we move inland, the number and kinds of artwork increase with a peak at the large Lamoka Lake site in western New York State. Here William Ritchie's excavations revealed abundant evidence of a hunting and gathering people who lived on deer, bear, turkey, fish and acorns and other vegetable foods.

While no representational objects were found in the refuse at Lamoka Lake a large number of decorated bone and antler artifacts has been recovered. A series of pendants are decorated in a variety of ways including fine nicking along the edges, incised triangular designs on the bone, and in a few cases by painting candy-stripe designs in red hematite pigment. The functions of these objects can only be guessed at, but the nicks and painting may represent some kind of tallies or perhaps marks of ownership. For the time being, however, we must class these objects with decorative rather than religious or magical art.

From a related site of about the same time period, located in the Mohawk Val-

From the digital collections of the New York State Library.

ley there have been recovered a number of decorative objects of an artistic nature. Winged "bannerstones," probably spear thrower weights, bilaterally symmetrical and highly polished, show considerable skill in manufacture, and are classified as art objects solely on the basis of the excellent workmanship. A second artifact from this site is a fragment of what appears to be a large stone pestle surmounted by the skillfully carved head of an animal resembling a bear. If it was a pestle we must once again consider the art purely decorative but it is possible that the image of a bear somehow imported to its owner some of the characteristics of the animal by a process called contagious magic.

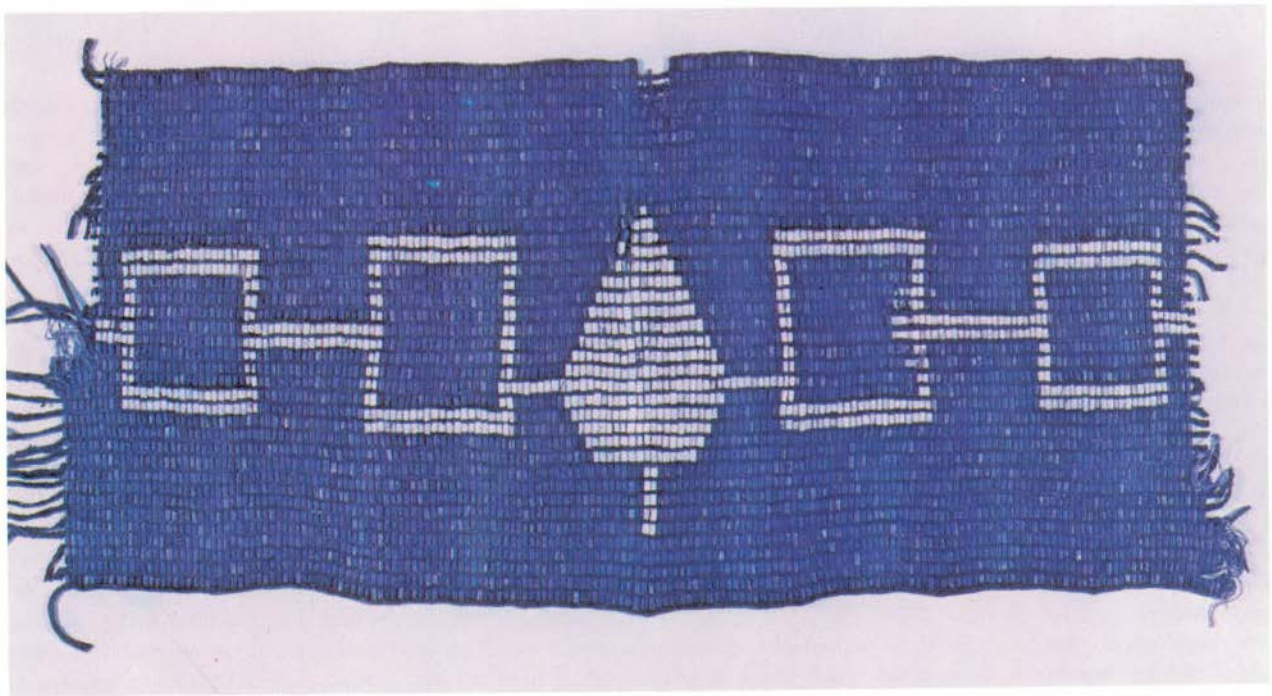
To the north, in the Lake Forest Zone of the Great Lakes-St. Lawrence drainage there lived other peoples from western New England to the western Great Lakes. They seem to have relied relatively less on vegetable products and more on fish with deer, elk, and other large mammals still of great importance. The artifact complex is distinctive and includes a number of beaten copper and skillfully ground slate tools. Once again art and utilitarian artifacts either were rarely produced or have not been preserved in any great numbers. Exceptions such as Allumette and Morrison's Islands in the Ottawa River, Ontario, provide us with copper bracelets, beads, and pendants, bone flutes, whistles, bone and copper hairpins including at least one carved to resemble a feather, many incised with zig-zag lines, parallel rows of short straight lines, and various combinations of lines and dots all of which may have been purely ornamental but which very likely had some deeper meaning as well.

Another happy accident of preservation is a burial site on Frontenac Island in Cayuga Lake, New York, which produced one of the outstanding artifact assemblages from any site in the Northeast. The culture seems to be a cross between the Lake Forest and more southern Lamoka Lake Archaic cultures showing elements of both. The site produced a wealth of new and unique material. Shell beads and pendants, perhaps purely decorative, appear at this time. Many small bone and antler pendants were also found, as well as large numbers of animal teeth, claws and bones, which probably were both ornaments and charms but do not qualify as objects of art.

The outstanding and unique specimen from Frontenac Island is an antler comb surmounted by the effigies of two birds with bills intertwined. The significance of this piece remains unknown but in view of the role played by birds in the spiritual life of many primitive peoples it may have been more than merely ornamental. Regardless of its place in the life of the young man with whom it was buried it deserves special mention for its graceful design and skillful execution can scarcely be matched.

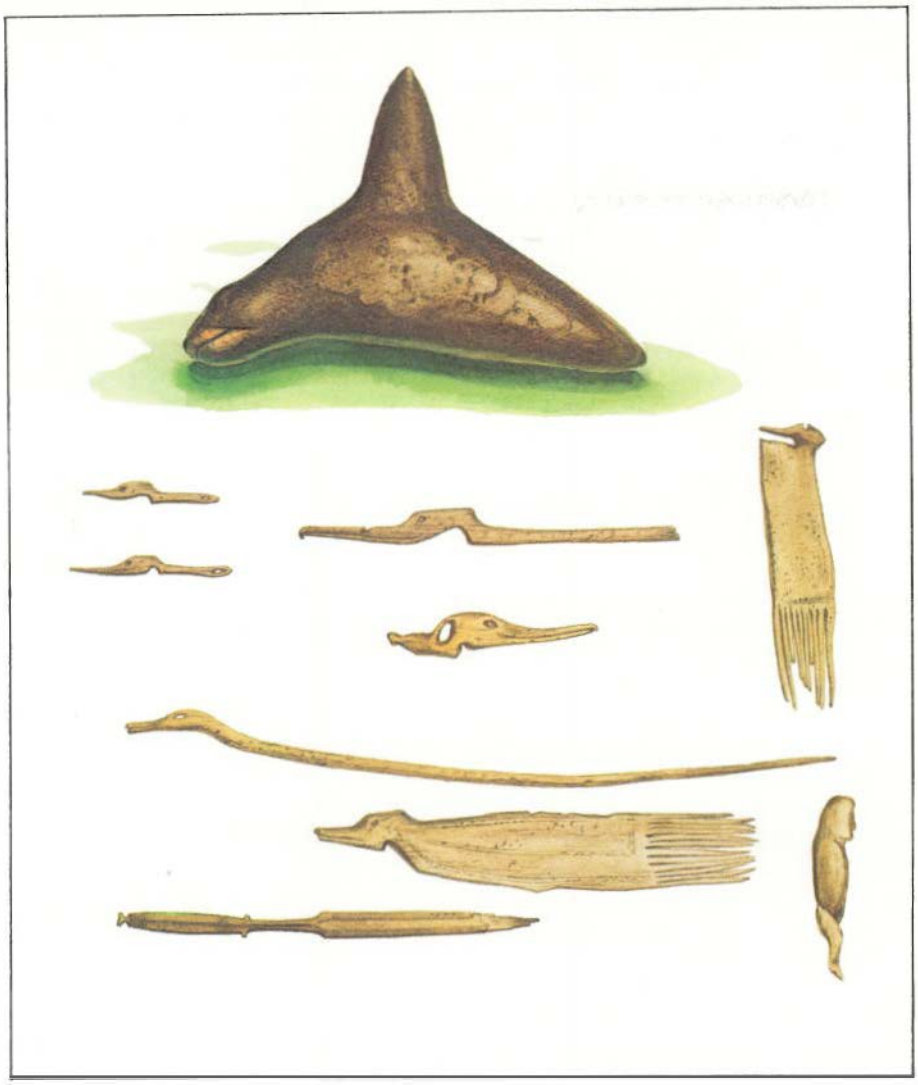
A third Archaic culture which I have called the Maritime Archaic Tradition by virtue of its seasonal utilization of sea mammals and fishes extended from the northern New England coast north to Labrador. The hunting of caribou (and perhaps moose in the south) played an important part in the economy. At sites in Maine, the Maritime Provinces, and most recently in Newfoundland and Labrador cemeteries have been found which reveal a variety of carved bone, stone, and antler objects as yet unequalled in the interior of the Northeast.

At the Port au Choix site in northwest Newfoundland most of the 60 red ochre covered graves contained some form of art or ornamentation ranging from simple decorative objects such as shell beads to elaborately carved bone, stone, and antler charms and fetishes. Antler and bone hair or jacket-pins were not rare and many have birds' heads so skillfully carved that the cormorant, ducks, merganser, and now-extinct great auk are clearly recognizable. The same is true for two antler combs, one bearing the effigy of a broad-billed duck, goose, or swan, and the other the unmistakable profile of a merganser. These effigies also have their place in the inferred magical system of the people of the North Atlantic coast.



Hiawatha Belt, wampum (historic)

From the digital collections of the New York State Library.



Artifacts from Port au Choix, Newfoundland. Stone killer whale effigy at top, late archaic.

The actual bills, skulls and other bones of diving birds or their replicas as combs and pins probably were believed to impart their skills as fishermen to the persons who wore them. Hundreds of other natural and modified objects also occurred — quartz crystals, small irregular pebbles resembling birds, bear teeth, fox, wolf, marten, otter and seal jaws and teeth, etc. all having their places in a prehistoric belief system. But the outstanding carving from Port au Choix was a stone killer whale effigy about eight inches long with the mouth clearly depicted and the pronounced dorsal fin. Almost certainly this was a hunting fetish, perhaps even associated with a cult, for there is no better animal for seal hunters to emulate (and to placate) than the killer whale, itself a successful seal hunter yet feared by the Eskimos even today as a danger to man.

Archaic Indian art forms then seem to have been confined to stone, bone, antler, and shell although wood and other perishable substances were doubtless utilized and had they survived the ages would probably surprise us by their variety and number. We also see during the Archaic period the first real evidence of a division between decorative art such as incised bone pins, pendants, weapons, or utensils and art with some clearly magico-religious overtones such as the charms and fetishes from graves along the northeast Atlantic coast.

The Woodland Period — For the sake of convenience the Woodland period in the Northeast may be considered to begin with the introduction or invention of ceramics, about 1000 B.C., followed sometime later by the beginnings of a horticultural economy. Pottery-making was not universally adopted and some people, notably the northern hunters, continued to live an essentially Archaic way of life until almost the present day.

While work in bone, stone, antler, shell, etc. continued into the historic period the new plastic medium of clay provided the material for a new and often impressive series of art forms.

During the Early Woodland period, from about 1000 B.C. to the beginning of the Christian era, clay pots were relatively unspectacular with cord-roughened surfaces and decoration, if any, confined to the upper portions of the vessel. Most burials from this period are cremations so little bone or antler material is preserved. Frequently, however, intriguing and enigmatic artifacts called "bird stones" are found on Early Woodland sites. These small stone bird effigies, often with unusual pop-eyes as a feature are often made from porphyry, banded slate, or other colorful materials. These are exquisitely manufactured with the natural colors or other features of the raw material incorporated into the design. To date no one has satisfactorily demonstrated their function. One theory holds that they were used as a counter balance on spearthrowers, in which case their likeness to birds is probably more than fortuitous and involves the simple mental connection between the flight of a bird and that of the dart propelled by the spear-thrower or atl-atl. Other noteworthy artifacts from this time period include undecorated tubular or cigar-shaped smoking pipes and rectangular, trapezoidal, and occasionally reel-shaped gorgets of banded slate. These usually have two perforations near the center and may also have served as spear-thrower weights. While most objects of this period appear utilitarian, many clearly have had more care lavished upon their manufacture than absolutely necessary, hence they might qualify also as decorative art.

During the Middle Woodland period, roughly 300 B.C. to 500 A.D. a variety of elaborate artifacts appear in the Northeast, mostly associated with the Hopewell burial cult which has its hearth in the Ohio River valley. Objects of grave furniture include artifacts of stone, bone, antler, copper, galena, hematite, mica, obsidian, and other exotic materials often exquisitely modified by Middle Woodland craftsmen. As yet none of the outstanding Hopewell art objects — cutout and repoussé copper birds and other figures, cut mica zoo morphic figures, animal effigy platform pipes, and even occasional ceramic human figures of almost portrait quality — have been found in New York but mounds exist and one day we may get

From the digital collections of the New York State Library.

American Indian Poetry, an anthology of authentic songs and chants, edited by George W. Cronyn and published by Ballantine, includes several songs by the Indians of the Northeast. Two are printed below.

Calling-One's-Own

(Ojibwa)

Awake! flower of the forest, sky-treading bird of the prairie.
Awake! awake! wonderful fawn-eyed One
When you look upon me I am satisfied; as flowers that drink dew.
The breath of your mouth is the fragrance of flowers in the morning,
Your breath is their fragrance at evening in the moon-of-fading-leaf.
Do not the red streams of my veins run toward you
As forest-streams to the sun in the moon of bright nights?
When you are beside me my heart sings; a branch it is, dancing,
Dancing before the Wind-spirit in the moon of strawberries.
When you frown upon me, beloved, my heart grows dark—
A shining river the shadows of clouds darken,
Then with your smiles comes the sun and makes to look like gold
Furrows the cold wind drew in the water's face.
Myself! behold me! blood of my beating heart.
Earth smiles—the waters smile—even the sky-of-clouds smiles—but I,
I lose the way of smiling when you are not near.
Awake! awake! my beloved.

—Translated by Charles Fenno Hoffman

Fire-Fly Song

(Ojibwa)

Flitting white-fire insects!
Wandering small-fire beasts!
Wave little stars about my bed!
Weave little stars into my sleep!
Come, little dancing white-fire bug,
Come, little flitting white-fire beast!
Light me with your white-flame magic,
Your little star-torch.

—Translated by H. H. Schoolcraft

a pleasant surprise from some unexpected area.

Local developments in the Northeast during this time include conoidal-based ceramics decorated with an assortment of stamped, impressed, rouletted or occasionally incised motifs, mostly geometric and decorative. From central New York, stone and bone pendants of various forms and attractive shell beads occur. An unusual antler comb from the Durkee site near the Genesee River decorated with elongate triangular patterns of parallel incisions continues the chain of such ornaments. Neither combs nor pendants seem directly related to the belief systems of the Middle Woodland occupants of the Northeast.

A new and interesting art form begins to be more fully expressed during the Middle Woodland period: the smoking pipe. Most are made from a fine clay or, more rarely, are carved from stone. Early in the Middle Woodland period smoking pipes are simply tubular or have a very slight bend or elbow. Toward the end of this period the bend increases and a clearly distinguishable bowl appears often decorated with fine incised or impressed geometric decorations similar to those found on cooking and storage vessels. Occasionally "platform" or "monitor" pipes, so named, I guess, by virtue of their resemblance to the Civil War warship, are found and the most elaborate of these have a decorated or even effigy bowl placed near the center of a broad flat stem rather than at one end.

While the form and decoration, (if any) of these pipes may have had little actual magical or religious significance we must remember that the whole idea and practice of tobacco smoking among American Indians was frequently bound up with religious or other ceremonial behavior.

We might even suppose, therefore, that these early smoking pipes were themselves often objects of considerable ritual significance.

In the Late Woodland period ceramic vessels and smoking pipes continued to increase both in numbers and in variety until they became, by the time of European contact, by far the most significant medium of artistic expression among the farmers of the Northeast. To the north of this agricultural zone, however, there were people who never accepted the art of pottery making, probably since they were not farmers and continued to live a wandering hunting-fishing-gathering existence much as their Archaic predecessors had done for centuries before them.

Among these latter peoples — the Algonkian-speaking Indians of Quebec and Labrador, for instance — traditional art forms in bone, stone, antler and other non-perishable substances have persisted until nearly the present day and additional objects of perishable materials add to the list of decorative and representational objects of art. For instance clothing decorated with porcupine quill and moose hair embroidery, bark and split wood baskets, and other wooden, leather, and cloth items still produced not only provide an impressive array of contemporary Indian art but allow us to speculate on some of these arts and crafts of the prehistoric period. Surely the Archaic predecessors of these people made decorated clothing, pouches, baskets, boxes, and much more which we cannot even imagine.

In the areas where climate allowed agriculture late Woodland ceramic development can easily be traced from its Middle Woodland base. The conoidal-based pots of the earlier period gave way to round-bodied examples with a constricted neck and usually either a pronounced collar or thickened and everted segment beneath the vessel lip. Paste became finer and pot bodies were finished by smoothing instead of paddling with a rough cord-covered or checkered paddle. Decoration was confined to the upper portions of the vessel — the neck and collar — and ultimately almost exclusively to the collar. Motifs remained geometric encompassing horizontal, vertical, and oblique lines which eventually were combined into elaborate patterns of opposed triangles and chevrons. The technique of decoration underwent a change from impressing the edge of a cord-wrapped paddle into the clay to incising the design into the clay with a sharp instrument. Frequently the rims of vessels castellated or "scalloped" and around the year A.D. 1500 increasing numbers of small human faces and occasionally full figure effigies appear on the collars of vessels. While most of the geometric designs are probably decorative (although it has been suggested that different designs belonged to different clans or other social groups) the appearance of human faces may somehow be related to the rise of the masking complex or False Face Society among the Iroquois at about the time of the formation of the Five Nations Confederacy.

Smoking pipes, as well as cooking and storage vessels reach their zenith during

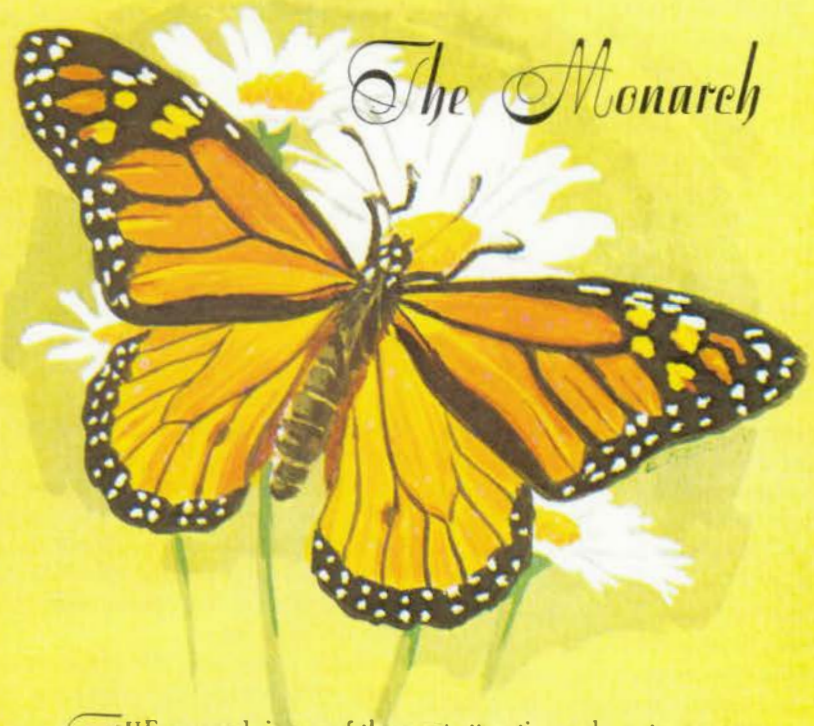
From the digital collections of the New York State Library.

the Late Woodland period. The geometric motifs and simple forms of earlier times are gradually replaced by more elaborate bowl forms including those resembling ceramic vessels, the "puff-sleeve" variety, "trumpet" pipes, and a vast range of skillfully modeled effigy pipes. Owls, crows, snakes, corn ears, otters, many other mammals and birds, and occasionally even detailed human faces were used. Smoking pipes may have signified clan affiliations although this is probably an unprovable hypothesis.

Other media were not entirely ignored by the Iroquoians for there are stone, shell, bone, and antler objects from many Iroquois sites which can be categorized as decorative or religious art. Outstanding among these, I suppose, are the small faces made of various substances which are miniature versions of the larger false faces carved by the Iroquois to depict spirits of the forest. While the large specimens, themselves first rate examples of Iroquois religious art, were used in curing ceremonies, the smaller ones were worn by individuals to ward off disease or ill fortune. A host of other Iroquoian art objects is represented in collections made after European contact including decorated clothing, bags, moccasins, wooden bowls, ladles, etc. Finally no mention of Iroquois art would be complete without at least passing mention of the wampum belts now the source of so much controversy. Comprised of small beads made from the white or purple portions of the hard clam shell these belts had woven in them designs illustrating events of importance to the Iroquois. The classic example being the Hiawatha belt which symbolically portrays the five Iroquois nations stretching across the belt and linked by bars of white wampum between them.

In conclusion, we have learned Northeastern aboriginal art served a variety of purposes in the prehistoric Northeast from simple decoration to marks of ownership or tallies, as part of systems of magical beliefs and practices, and to record important political events of the times. We can appreciate prehistoric man's mastery of the techniques of carving, sculpting, and modeling the various materials with which he worked, which very few of us could equal today. We may have gained some insight into the minds of prehistoric men as they thought about and created the objects we may see and handle today and seen, perhaps, that their minds worked not unlike that of artists today.

The Monarch



THE monarch is one of the most attractive and most numerous North American butterflies. In great flocks, monarchs migrate south in autumn, to Florida along the eastern flyway, to California on the western flyways. Southern migrants are divided about equally between male and female, with the male determining direction and destination, aided by the scent he diffuses as they fly. The monarchs return each autumn to the same trees on which their parents wintered. The town of Pacific Grove, California, has enacted an ordinance providing protection for the Monterey pines within the town known throughout the world as the "butterfly trees" where literally millions of monarchs cluster during the winter. First to leave in spring are the females, to be followed by few if any males, for they have done their job in reproduction and will not survive the spring.

The females returning north lay their eggs on milkweed plants. The larvae feed greedily on the milkweed leaves, then spin themselves the chrysalis from which the new adult monarch will emerge during the warm summer days.

Since the milkweed is distasteful to birds, the monarch is generally immune to attack from that quarter, although inexperienced birds not yet educated as to sources of food poisoning sometimes take a bite of monarch only to vomit it out. The monarch's reputation is such an effective protection that the viceroy butterfly, a succulent morsel for birds, is often avoided by them because of its resemblance to the monarch.—R.F.H.

From the digital collections of the New York State Library.

Tracking the Wild Bee

HONEY on the table and money in the pocket outweighed the thrill in finding a bee tree for our ancestors. Today beekeeping is a flourishing industry and bee tree hunting is a vanishing art pursued by a few for fun.

In 1400 A.D. a pound of honey or a pound of sugar could be swapped for 29 pounds of butter or 360 eggs on the London market; until recently sugar and honey have been in short supply and commanded a high price. Today the average American consumes about 100 pounds of sugar a year and we take the availability of sugar and other sweeteners for granted. Our ancestors had just as much of a sweet tooth as we have, thus accounting for the great monetary and exchange value attached to both honey and sugar until recently.

Honey is mentioned many times in the Bible but sugar is not. The ancient Egyptians, Greeks and Romans had many beekeepers in their populations, and there were apiaries throughout the Mediterranean area. The number of nectar producing plants of that day suggests that only the rulers and a privileged few ever ate honey in any quantity.

Sugar cane is Asian in origin and was not taken into the Mediterranean area from India until about 600 or 700 A.D. Even after that the production of sugar in the Mediterranean area was slow to develop and by 1700 annual per capita consumption in Europe and North America was only 4 pounds per person, rising to about 11 or 12 pounds by the time of the Revolutionary War. One of George Washington's problems was providing his troops with the sugar ration which he had promised them.

After the Americas were discovered, a sugar cane industry was started in San Domingo. In 1518 it is recorded that there were 28 farms devoted to sugar cane growing in that country. Production subsequently spread to Mexico, Guadaloupe and Martinique.

Sugar cane was first grown in the United States in 1751 in Louisiana. The project was abandoned until the 1790's because of a lack of extraction technology. Thereafter the raising and processing of sugar cane expanded rapidly in the southern states, and by early 1900 the industry was well-developed in this country. About 1870 the per capita consumption of sugar in the United States reached approximately 50 pounds, just about half enough to satisfy the average man's craving for sweet.

Throughout history this craving has stimulated the beekeeping industry and honey production and encouraged men to keep bees wherever it is possible to do so. The amount of honey which may be produced in an area is limited by the number of nectar producing plants available for bee forage. Europe, with some exceptions, has never been known as a major honey producing area. Modern agriculture both encourages and discourages beekeeping. Pesticides cause some problems; however, agricultural crops such as alfalfa, clover, soybeans, rape, and cotton are examples of good nectar producers and are the source of over half of the honey produced in the country.

Honey bees are native to Europe and were introduced into North America very early. Precise dates are difficult to determine but it is known that once bees were introduced they spread west faster than the white man.

Maple syrup was the American Indians' only sweet. Its production was limited to the Northeast where it was soon learned by the colonists whose primitive tools and equipment restricted its quantity. Since 1900 maple syrup is the only sweet which has declined in both production and use in the United States.

The New World had an abundance of honey producing plants. These were supplemented by accidental and intentional introductions from Europe, for example, the alfalfas and clovers. Dandelions, which are highly prized by beekeepers and from which bees collect large quantities of pollen in the spring, were also imported from Europe.

Modern beekeeping began with discovery of the movable frame hive in 1851. Prior to that time beekeepers encouraged colony division and swarming. In fact, the early beekeepers in this country kept their colonies small and crowded and were aware of the fact that this technique would encourage swarming by bees. Swarming, unfortunately, divides the colonies' strength and colonies which swarm do not produce so much honey as those that do not swarm. Thus, modern beekeepers discourage swarming and keep large populous colonies which may produce 100 or more pounds of honey per year for the careful beekeeper.

The discovery of the movable frame hive in 1851 brought about the rapid expansion of the beekeeping industry; this was not slowed by the Civil War. Large apiaries were developed in both the North and the South. Bruce Catton records in "Mr. Lincoln's Army" that in one civil war battle the rookie 132nd Pennsylvania Infantry Regiment was routed when a cannonball passed through

From the digital collections of the New York State Library.

Robbing a Wild Beehive — Drawn by R. F. Zegbaum. From an old print — Harper's Weekly (Courtesy N.Y. Public Library)

Cunning and hard work by our pioneer ancestors resulted in a sweet reward when they found a bee tree

by Roger A. Morse

a long row of beehives as the troops were advancing.

Since swarming was encouraged by the colonists, many of the swarms escaped from man-kept apiaries and the bees lived in the virgin forests. The natural home of the honey bee is a hollow tree, more rarely a cave. The virgin forests in America were filled with large, old, hollow trees which made excellent nesting sites for bees. Thus, in the late fall after the normal crops had been harvested, the attention of many farmers turned to the location of wild bee trees and the collection of honey from them.

The scientific basis for the success which bee tree hunters have was discovered by Professor Karl von Frisch in the 1940's. Honey bees have a refined communication system by which scouts find food, then alert and convey to other bees in the hive information about the source. Recruits are able to find the food and to bring it back to the hive where it is stored for winter. Honey and pollen are the sole food for bees and in most areas a colony of bees requires 60 to 80 pounds to survive the winter successfully. Often colonies will go into the winter with far more food reserves than this.

But how does one find a bee tree? To do so and to "line" bees, one captures a foraging bee from a goldenrod or aster or other flower in the late fall and offers it honey. It is helpful to add a small amount of water to the honey so that the solution is not so viscous. Usually the bee will accept a rich food source but the food must be richer and more abundant that that produced by the flower on which she is working. Bees are able to detect the quality of food which they are collecting and have a threshold of acceptance which must be satisfied before they will switch to a new source of food. Bees prefer natural sources of food over artificial ones.

If the bee accepts the new food source, she engorges and returns to the hive. Usually, after two to four trips between the food source and the hive, she is satisfied as to its quality and starts to recruit other bees to the site.

It is difficult to follow an individual bee as she flies from a newly established food source to her home. However, when 30 or 40 more bees are feeding at an artificial food source and are taking wing, a bee tree hunter will be able to follow the direction they take, called the bee line, with his eye. This is a straight line between the food and the bee's nest or hive.

When the direction the bees are flying is determined, the bee tree hunter usually closes the box which contains the food and carries it, together with some of the captured bees, several hundred yards along the line taken by the flying bees. The bee line is then established again. Since most bees usually forage within a mile of their nest, it is necessary to make only three or four such moves of several hundred yards each to find the colony. Not infrequently bee liners record that they have unwittingly walked past a bee

From the digital collections of the New York State Library.

tree and the bee line is in precisely the opposite direction from which they thought the bee tree was located.

A bee lining box may be square, rectangular or round. It is usually large enough to hold a piece of honeycomb which might contain two to ten ounces of honey. Bees prefer honey over a sugar syrup since honey is a naturally scented material. If no honey is available to the bee tree hunter, he may take a small amount of sugar-water and add a scent to it. Anise is the favorite scent of the old-fashioned bee tree hunter.

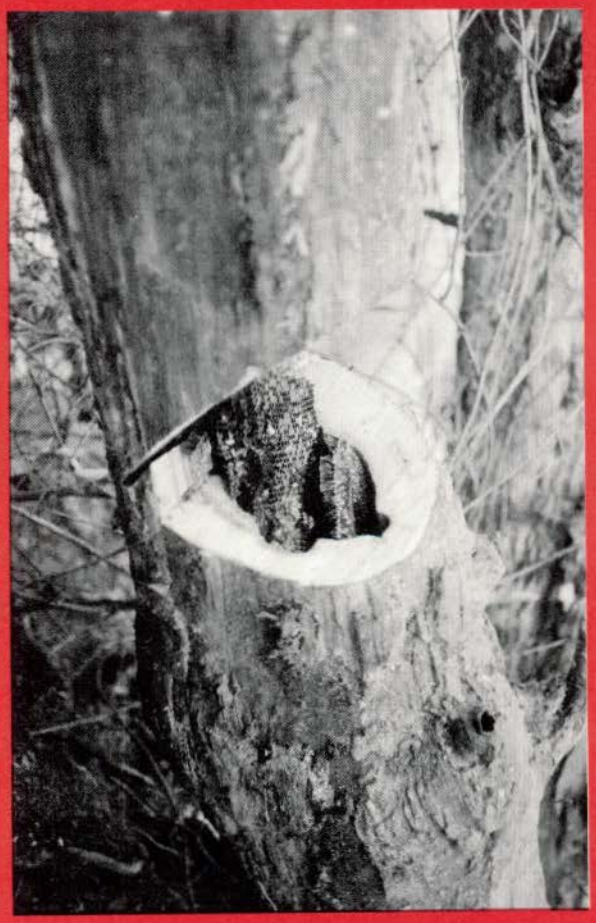
Dancing bees, conveying information about food sources, may be observed in glass-walled observation bee hives. It's not uncommon for beekeepers to keep such observation hives in their studies or living rooms where they may show them and the activities of their occupants to friends. The bees need only to have access to the outdoors and the observers may watch the activities of the bees through the glass-walled hives without exposing themselves to the danger of being stung.

A scout or dancing bee needs to convey to a recruit three pieces of information: the direction and distance of the food source and the type of food to be collected. Bees make two types of dances but in the principal dance, called the wag-tail dance, the direction of the tail-wagging part of the dance indicates the direction of the food source from the hive. The rapidity of the dance indicates the distance. Periodically, the dancing bee stops and gives a small amount of food to those bees following her. In this way the recruits identify the taste and/or odor of the food to be collected. With this information the recruit has little difficulty in locating the food source.

Harvesting a bee tree is usually done on a cold day in November or December before the bees have had an opportunity to consume much of the stored food. There is no easy way to save the bees themselves and they were usually destroyed by the early bee tree hunters.

Bees are quite adept at protecting themselves even during the cold winter days. They cannot do so as well as they can in the summer but the stories told by the early bee tree hunters indicate that they were often badly stung. Honey bees are coldblooded but they can generate heat within the center of the tight cluster which they form in the winter nest. While

Split trunk of bee tree



Notched bee tree shows comb arrangement

From the digital collections of the New York State Library.

the bees on the exterior of the nest are cold and can scarcely move, they can protrude their sting when disturbed and the exterior of a disturbed honey bees' winter cluster reminds one of a porcupine. Touch an insect on the surface of the cold cluster and one will be stung just as readily as on a warm summer day.

The bees on the exterior of a winter cluster do not perish because of exposure to cold and the fact that they are too cold to move. There is a continual rotation of bees from within the warm cluster to the outside. Periodically one may observe a warm bee from within the winter cluster move to the outside of the cluster where she pushes a cold bee, unable to move herself, to the interior of the cluster where the cold bee is warmed.

If one provokes a winter cluster of honey bees the first reaction is for bees on the exterior of the cluster to protrude their stings. If the provocation continues, warm bees from within the cluster will fly out in wide arcs searching for the enemy attacking the nest. Bees which are out from the nest on a cold day will usually land on the cold snow and die. However, individual bees are willing to sacrifice themselves for the good of the colony and the loss of even several hundred individuals is not important to the survival of the colony. In the process of flying or arcing from the colony in all directions, the enemy is sure to be found by at least a few bees and be rather severely stung.

Traditionally, a bee tree hunter carves his initials on the trunk of a newly discovered bee tree. If the bee tree is on private property there is, again traditionally, some sharing of the harvest with the landowner who also helps to fall and split the tree to obtain the honey and wax. If the bee nest is some distance up the trunk of the tree the bees usually do not attack in force while the tree itself is being cut. However, as the bee tree hunter begins to saw out that section of the hollow tree containing the nest itself, the attacks by the bees start since large nests of honey bees may contain 30,000 to 50,000 bees in the late fall or early winter.

The real prize for the bee tree hunter was what was referred to as virgin honey — honey in new white combs which may be eaten just as it comes from the nest, including the wax. Virgin honey commanded an especially high price in colonial times: it is a special treat to eat the honey and chew the wax as one would chew gum. Beeswax is digestible, or passes through the system, and swallowing it causes no trouble.

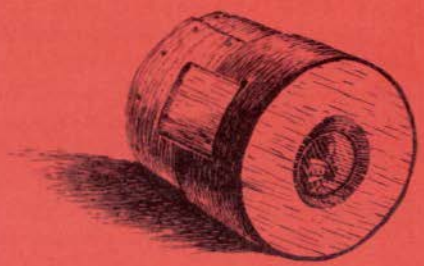
Most of the honey in a bee tree is stored in old, dark comb. The secretion of beeswax by worker bees requires time and a large quantity of honey, therefore the colony reuses the comb as much as possible. Old comb becomes stained with pollen and the gums and resins which bees collect to strengthen it. As a result it usually has a rather bitter or resinous taste. It is necessary to take the comb containing honey and crush it and place it in a cheesecloth bag which is hung and from which the honey drips.

It is difficult to separate all the honey from the wax and the remaining comb refuse can be placed in warm water and the honey soaked from the comb in this manner. The comb washings were boiled and used as a sweet syrup or, depending upon the family philosophy, to make honey wine (mead).

The washed comb was then boiled in water and the pure beeswax rose to the top where it could be skimmed off. Beeswax, man's first plastic, had a great variety of uses around the colonial home. It was especially valuable for making candles, for unlike animal fats and tallows, beeswax candles have a pleasant odor when burned, and do not smoke or drip.

Bee tree hunting is a little-practiced, modern-day sport. Our knowledge of practical beekeeping is considerable and usually the person interested in bee tree hunting finds himself so fascinated by the animal that he prefers to keep the bees in his own backyard. The greatest frustration for the bee tree hunter is that he often finds he is lining bees from a commercial or hobby apiary.

Bee tree with combs just visible



Drawing of bee hunter's box at the Bennington Museum, Vt.

From the digital collections of the New York State Library.

Wild Rivers

An appreciation of our free-flowing streams and a way to save them for posterity

by Paul Schaefer

Blue Ledge of the Hudson

ADIRONDACK rivers always intrigued me, but full appreciation of their splendor and variety came only after years of fighting for their preservation with scores of associates.

I vividly recall a first trip into the Higley Mountain country in May 1945. Here, a dozen miles back in the woods, an unnecessary impoundment threatened to inundate the famous Moose River Plains, the Beaver Lake region and the Indian River.

Although I had backpacked a lot of Adirondack country, the quality of this wilderness surpassed any that I had yet seen. The Plains had solitude and Beaver Lake was surrounded with virgin white pines of great beauty. Wildlife was abundant. A score of deer were feeding on the opposite shore of the lake, a bald eagle soaring over it and just about dusk a raccoon made its way along a sand bar. That night we listened to the call of a loon and, later, as we were catching bullheads of prodigious size near the east shore, a fearless beaver rippled the waters nearby.

Next morning I followed the outlet of Beaver to the Indian and took a well-worn game trail upstream under ancient pines which guard it. The crystal clear river was singing as it sparkled over boulders on its way to join the south branch of the Moose just below the cliffs of Higley Mountain. Above a small rapids, I came upon a long, quiet still-water, its banks bedecked with wildflowers, ferns and grasses. Immense spruces formed an evergreen canyon upstream, with an occasional pine towering high above their spired tops.

I stood there in awe at the perfection of nature around me. Then came the sudden realization that all of this might soon be lost forever; the great forest reduced to a cemetery of stumps, the rich, lush forest floor alternately drowned and dry, and the music of the river stilled. Even as I stood silent on this spot, a deer emerged from the shadows of the forest to drink in a sunlit pool. Just upstream, a trout leapt for a fly.

Here was wilderness — solitude, serenity and peace!

Who, having known such moments, could abandon such country to the fate we foresaw?

Years of intense activity followed, during which virtually all outdoor organizations gradually mobilized their forces for the first time in the effort to preserve these irreplaceable lowlands. It took eleven years to assure the safety of the valley of the south branch of the Moose River. A special investigating commission named by Governor Harriman killed the proposed Higley Dam in 1947. Shortly thereafter, an even larger reservoir, the Panther Mountain Dam, was proposed for a site about five miles below the Higley on the same river. This issue was the subject

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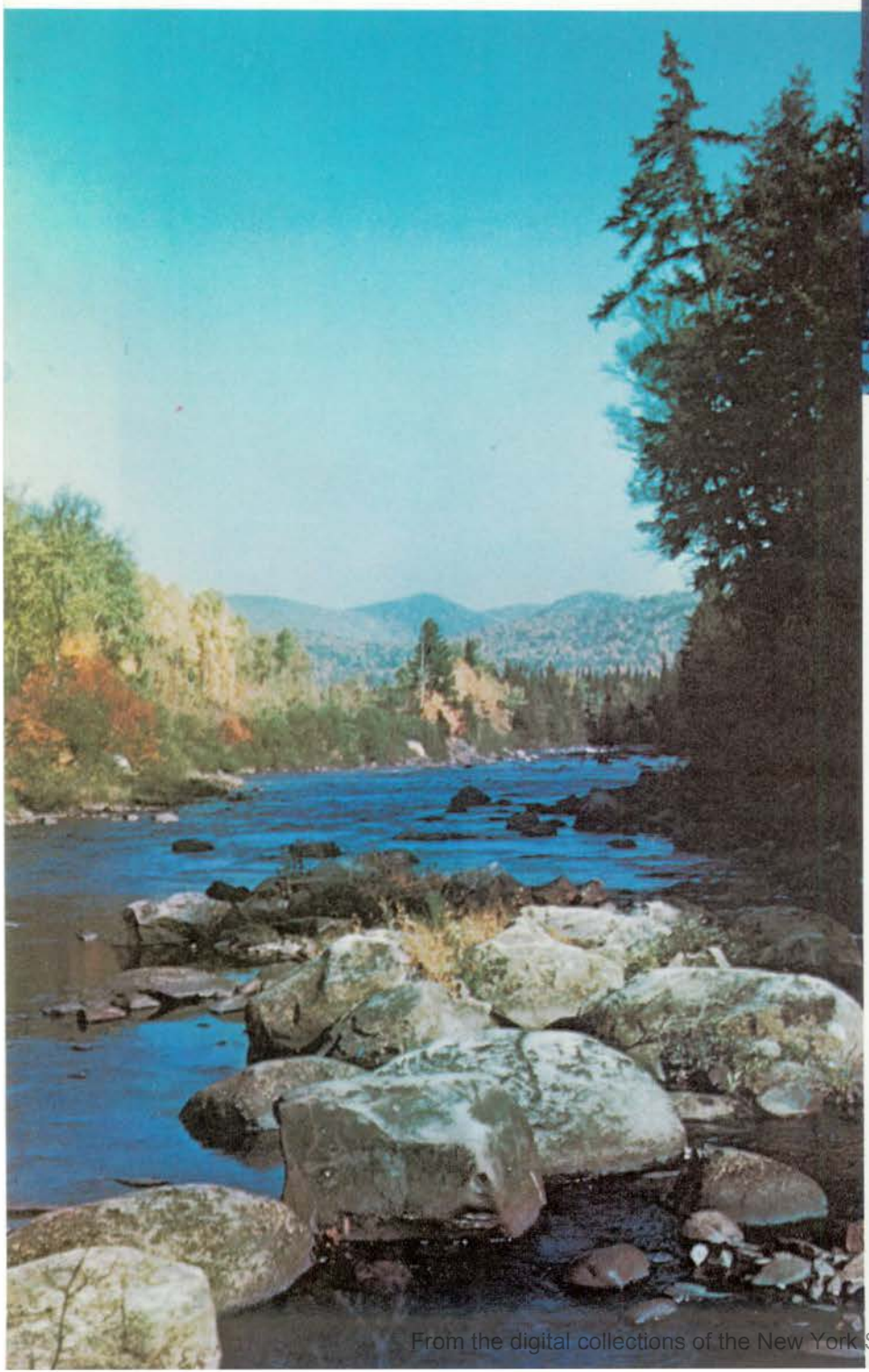
Indian River stillwater



East Branch of the Sacandaga River

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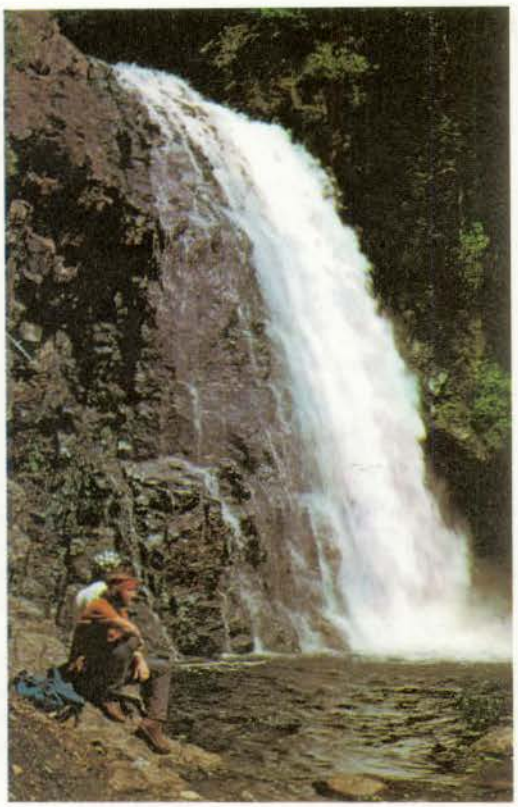

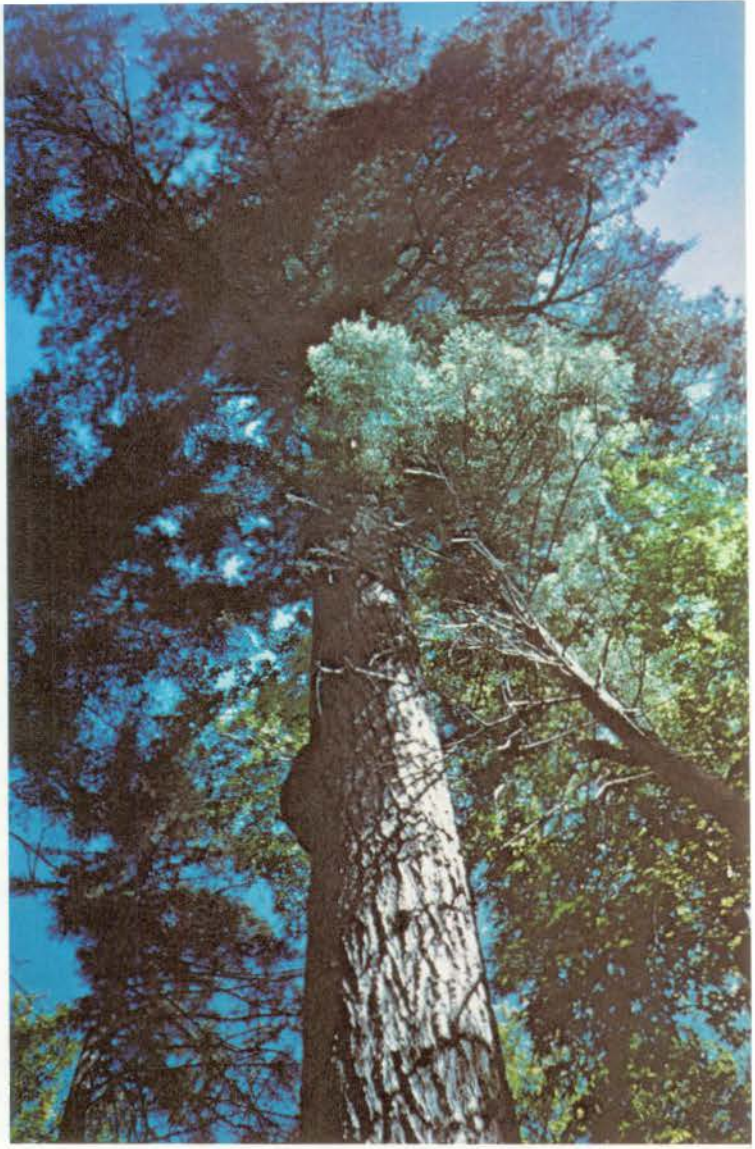

Virgin pine, Indian River

(Left) Hanging Spear Falls

I am content and strongly fulfilled

In any river of the Adirondacks I see the rivers I've known all over the United States and the great brawling ones of the north as far as the Arctic tundras. When I hear the thunder of a rapids or the soft music of some chuckling stream; when I see placid pools and the widening circles of a rising trout or hear the lonely song of a whitethroat at dusk, I am content and strongly fulfilled, for mine is the blood and the sinew of ancestral man, and within me are memories of forebears who for countless millennia watched and listened before me. Rivers were part of their lives. They were the highways. Here they hunted and fished, built shelters, and in the glow of campfires had visions and dreams.

The Adirondacks with their magnificent mountain complexes are interlaced by the network of living rivers that shaped them and carved their valleys, rivers as much a part of them as their eroded cliffs and ledges. Only if they are included in the great concept of keeping the Adirondacks forever wild, can these beautiful mountains fulfill their destiny as refuges for the spirit of man.—Sigurd F. Olson

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of litigation in State and Federal courts for several years. An act of the Legislature in 1950 banned any dam on the Moose River and constitutional amendments in 1953 and in 1956 made the issue final.

The record will show that all during this long and exhaustive effort, conservationists offered alternatives to the destruction of this valley. They favored the proposed downstream flood control reservoirs at Forestport and Hawkinsville. They strongly supported the St. Lawrence Power Development.

Subsequently, other major reservoir proposals surfaced: the Salmon River, the Hudson at Luzerne and most incredible of all, the Hudson at Kettle Mt. or at Gooley. The latter would have destroyed 16,000 acres of prime forest, lake and river country, the Town of Newcomb, the Huntington Wildlife Research Forest and more. Because the people of our State demonstrated that they cared enough, the Legislature and the Governor heard their voices clearly and the projects were shelved. In the case of the proposed Gooley Dam, the Legislature unanimously adopted legislation to prohibit it.

It was only natural, therefore, that when Governor Rockefeller's Temporary Commission to Study the Future of the Adirondacks proposed a wild, scenic and recreational rivers system to prevent such destruction it won overwhelming support. Related to this proposal was the decision of the Association for the Protection of the Adirondacks to create a documentary film on the subject. We felt the public needed answers to these basic questions: Where were these rivers? What portions of them would be preserved? Why?

By happy coincidence, a young man from Glens Falls, needing a documentary to get his master's degree in film making from Boston University appeared at our office. Fred Sullivan began his work in April 1971 and completed the film in October 1972.

Guided at times by members of the Adirondack Hudson River Association, but largely on his own, Sullivan and his crew from the university ranged the park, exploring its remote rivers and climbing cataracts to find their sources in high sphagnum swamps and mountaintop lakes. He quickly found the relationship between clouds, trees and soil, brought wildlife into his viewfinder and caught the elusive spirit of wilderness campfires on his film. Thunderstorms, black flies and snowstorms were part of the story. He related the erosion of fragile resources to people in such a way that the need for better planning and controls becomes obvious.

Starting out with no preconceptions as to Adirondack problems, his thesis crystalized the philosophy expressed by the Adirondack Study Commission. It clearly points the way for comprehensive action by all facets of our society. The film will spur action on a problem which will require years to solve completely.

The first major step in this direction was made in 1972 by Assemblyman Glenn H. Harris and State Senator Bernard C. Smith. Their bill, which was passed and signed by the Governor, set up a Wild, Scenic and Recreational Rivers System as was proposed. One hundred-eighty miles of the most critical rivers were included in it and they now have this special protection.

Most of the shorelines of these rivers are in the protected State forest preserve and thus present few problems of administration. In addition, about 20,000 miles of tributary streams are also in the forest preserve.

The Harris-Smith bill also provided that the agency, after consultation and cooperation with the Environmental Conservation Commissioner with respect to rivers elsewhere, was directed to consider and make proposals to the Legislature within three years for the addition of sections of other rivers.

Of the 6,000 miles of rivers within the Park, a total of about one thousand were to be studied for inclusion in the system. Of this mileage, 180 miles are now in the system. A heavy percentage of the rivers to be studied are in private ownership where it will be necessary either to purchase or obtain covenants from the owners. Undoubtedly, the covenant will be the most viable method of getting protection.

Here is a unique opportunity to give proper consideration to the northwestern portion of the Park where there are tremendous river resources which have been completely overlooked.

The principle of a system to protect our rivers has now been fully established — an accomplishment which only a few years ago seemed impossible. It is now up to us to see that this program moves ahead.

We need to develop a rivers ethic which will go beyond legislative or State agency mandates. This ethic should be based on a comprehensive knowledge of the total river resource. Few have this knowledge. It also involves appreciation and understanding of the vast network of tributary streams, scores of which are neither named nor designated on any map. The ethic would be the belief that each of us is custodian of the rivers to their ultimate sources and that we exercise concern for their preservation.

If we will, we could bequeath to posterity a rich heritage of clean, free-flowing rivers and streams, with countless waterfalls and cataracts, and white-water rapids to challenge one's skill. If we do, decades hence, many a youth will walk down winding mountain trails and will hear, as we have heard, the roar of a distant Adirondack river. His step will quicken and he will know strange, new emotions. And that night, before his campfire he will experience, as we have, the ursurpassed exhilaration that only a wild, untamed river can provide.

River Categories and Mileage

Streams and sections of streams given protection under the Wild, Scenic and Recreational Rivers System, adopted by the State Legislature in 1972, are listed below under their appropriate category, with approximate mileages given in each instance:

Wild Rivers — (Wild rivers are defined as those rivers, or sections of rivers, that are free of diversions or impoundments, are inaccessible except by foot or horse trail, have primitive shorelines and are free of man-made objects other than foot bridges. Rivers designated as wild shall be unpolluted and, through natural obstruction or administrative regulation, free from motorized travel). Cold River 17 miles, Hudson River 10½, Indian River 13, Opalescent River 11, East Branch of the Sacandaga River 11½, West Branch of the Sacandaga River 7, West Canada Creek 8.

Scenic Rivers — (Scenic rivers are defined similarly, although log dams are allowed and existing public roads may make the river accessible as long as they are not more frequent than one every two miles. Motorized travel will be allowed only in special instances, depending on the character of the river). Ampersand Brook 8 miles, Ausable River 9, Boreas River 11½, Bouquet River 11½, Cedar River 6, Hudson River 13, South Branch of the Moose River 6½.

Recreational Rivers — (Recreational rivers may be readily accessible, may have some man-made developments along their shore, and may have undergone some diversion or impoundment). South Branch of the Moose River 15 miles, West Branch of the Ausable River 5.

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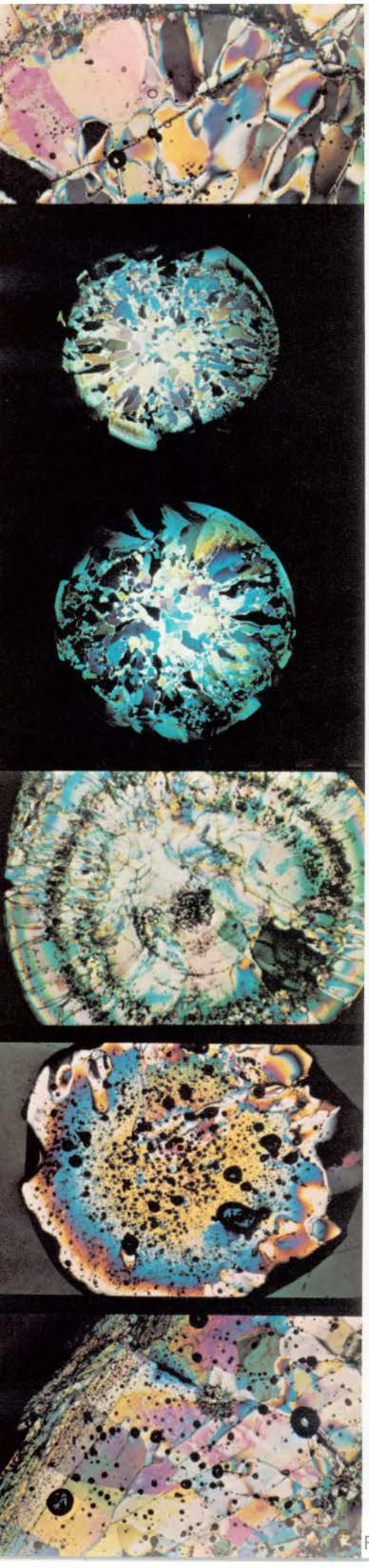

HAIL

Text by Raymond E. Falconer **Photos by Roger J. Cheng**

Cross sections of hailstones (1.5") collected in Albany, New York on July 25, 1972

SEVERE hailstorms are most prevalent in this country over the plains states, the Mississippi Valley, and the southeastern states, but each year there are apt to be several hailstorms in New York State, especially in the lower Hudson Valley. The annual property loss caused by severe hail over the country is said to average greater than that due to tornadoes. Severe hail means that the hailstones are at least a half inch to three quarters of an inch in diameter and range up to larger sizes. For many years the largest hailstone officially reported was the one that fell at Potter, Nebraska on July 6, 1928. It weighed 1.5 pounds and had a circumference of 17.0 inches. However, on September 30, 1970, a new record was set for the largest hailstone ever observed. It weighed 1.67 pounds and had a circumference of 17.5 inches. It was found at Coffeyville, Kansas. Incidentally, in the regions of the country where hailstorms are notably severe the crop hail insurance cost runs about 20 percent of the value of the crops. In hailstorm country, hail swaths average a few miles wide up to a hundred or more miles long. Hailstones develop in intense thunderstorms where there are strong convective air currents that carry warm, moist air from low levels up into cold, dry air at higher levels in the atmosphere. They are most apt to occur in the late afternoon of a very hot, humid day in the warmer months of the year. A strong jet stream wind is usually present in the 20,000 to 30,000 foot level in the atmosphere.

Hailstones may be spherical, conical, or generally irregular in shape, depending on several factors including: the shape of the initial embryo or center on which the stone gets started, the degree of upward and downward movement within the cloud, and the variation in temperature and moisture content encountered in the cloud. For a long time it was thought that hailstones formed when a large cluster of ice crystals were alternately caused to rise on strong updrafts within a cumulo-nimbus cloud into below freezing temperatures and then fall back below the freezing level only to be caught in an updraft which carries it upward to below freezing temperatures again. While some of this action does occur, the same effect can be produced by an embryo starting at a high level and falling through stratified layers of higher or lower moisture content and warmer or colder temperatures. In any event, the hailstone, once started, falls at a faster rate than the surrounding supercooled cloud droplets (supercooled meaning that the cloud drops are liquid even though the air temperature is colder than freezing). The supercooled droplets freeze upon contact with the frozen hailstone like the rime ice that forms on airplane wings and on trees and rocks on mountain tops when a supercooled cloud envelops either one.

Thus the hailstone develops a coating of rime by the accretion of supercooled cloud droplets. As the hailstone effectively falls through regions of the cloud having widely different moisture and temperature conditions, it ultimately takes on the structure of an onion in that there may be several layers of opaque, whitish, spongy ice alternating with layers of more dense, clear ice, possibly containing bubbles of air. The latter condition indicates its formation was near the freezing temperature while the former was developed at levels of colder temperature.

By cutting a hailstone and examining its cross section through a microscope, one can tell something about the history of its growth. Roger Cheng of the Atmospheric Sciences Research Center, State University of New York at Albany, who took the accompanying pictures, has examined hailstone cross sections through a polarizing microscope. He finds that, during the melting process, in the region where air bubbles are found, microdroplets are ejected by the bursting of these bubbles. He suggests that with a melting hailstone the fragmentation of these microdroplets which are electrically charged may contribute to the electrification of the atmosphere. The accompanying micro-photographs made by Mr. Cheng through a polarizing microscope are of hailstones that fell in Albany on the campus of the State University on July 25, 1972.

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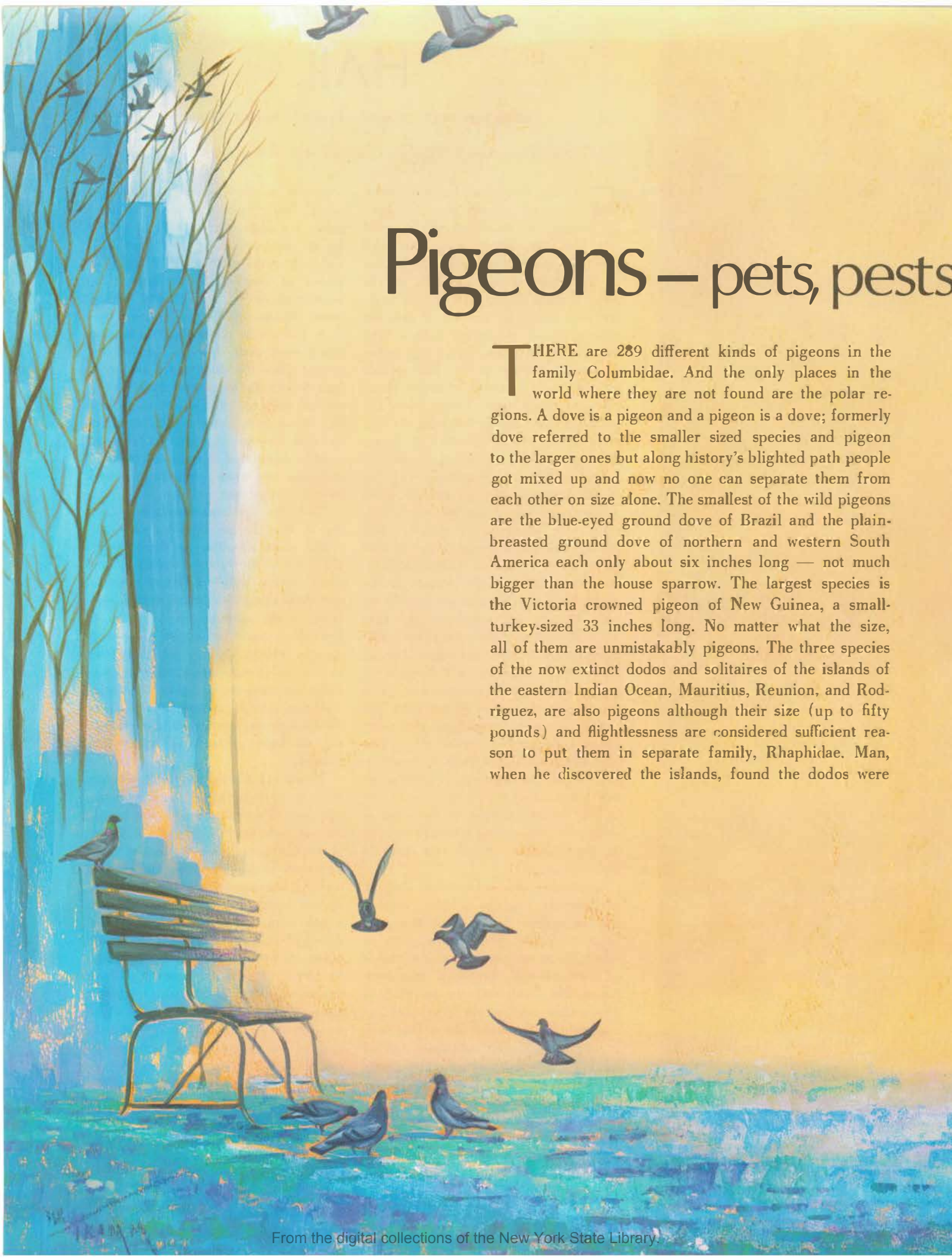

Pigeons – pets, pests

THERE are 289 different kinds of pigeons in the family Columbidae. And the only places in the world where they are not found are the polar regions. A dove is a pigeon and a pigeon is a dove; formerly dove referred to the smaller sized species and pigeon to the larger ones but along history's blighted path people got mixed up and now no one can separate them from each other on size alone. The smallest of the wild pigeons are the blue-eyed ground dove of Brazil and the plain-breasted ground dove of northern and western South America each only about six inches long — not much bigger than the house sparrow. The largest species is the Victoria crowned pigeon of New Guinea, a small-turkey-sized 33 inches long. No matter what the size, all of them are unmistakably pigeons. The three species of the now extinct dodos and solitaires of the islands of the eastern Indian Ocean, Mauritius, Reunion, and Rodriguez, are also pigeons although their size (up to fifty pounds) and flightlessness are considered sufficient reason to put them in separate family, Rhaphidae. Man, when he discovered the islands, found the dodos were

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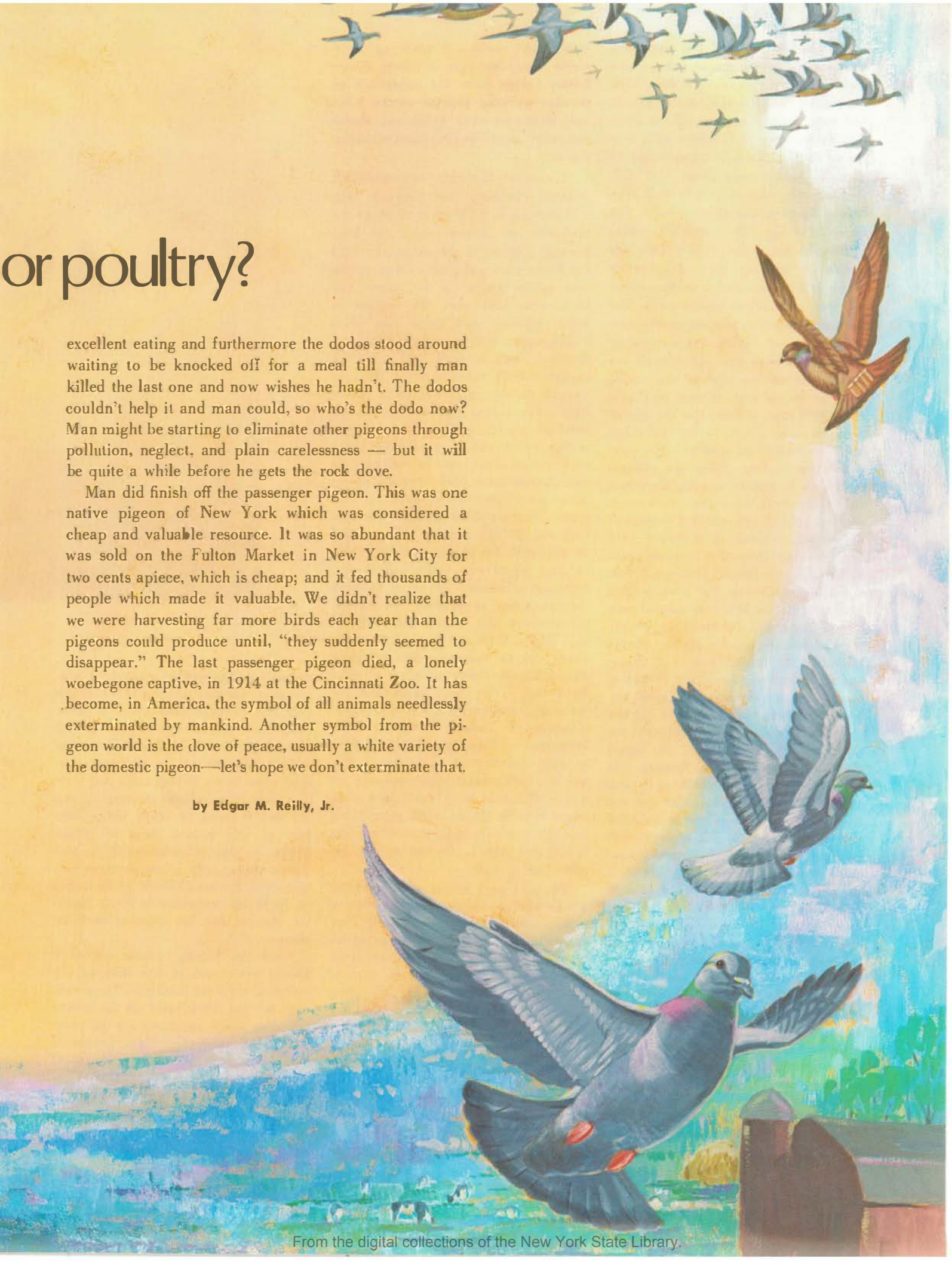
or poultry?

excellent eating and furthermore the dodos stood around waiting to be knocked off for a meal till finally man killed the last one and now wishes he hadn't. The dodos couldn't help it and man could, so who's the dodo now? Man might be starting to eliminate other pigeons through pollution, neglect, and plain carelessness — but it will be quite a while before he gets the rock dove.

Man did finish off the passenger pigeon. This was one native pigeon of New York which was considered a cheap and valuable resource. It was so abundant that it was sold on the Fulton Market in New York City for two cents apiece, which is cheap; and it fed thousands of people which made it valuable. We didn't realize that we were harvesting far more birds each year than the pigeons could produce until, "they suddenly seemed to disappear." The last passenger pigeon died, a lonely woebegone captive, in 1914 at the Cincinnati Zoo. It has become, in America, the symbol of all animals needlessly exterminated by mankind. Another symbol from the pigeon world is the dove of peace, usually a white variety of the domestic pigeon—let's hope we don't exterminate that.

by Edgar M. Reilly, Jr.



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In this article, we are discussing mainly the domestic pigeon going under such common names as: rock dove, homing pigeon, racing pigeon, carrier pigeon, and even peace dove; but all are scientifically one species. *Columba livia.* It is one of the first animals domesticated by man. In Mesopotamia about 4500 B.C. we find the earliest proofs that man started domesticating pigeons and it first appeared in Egypt about 3000 B.C., about 1,500 years before the chicken. They had strains or varieties then that are no longer in existence except as decorations on tomb and ancient palace walls. The birds were raised as pets, ornaments, and, of course, food. Squab was a *piece de resistance,* then as now, although no one would turn up his nose at roast adult birds as we do now. It only took man about 4000 years to learn that the urge of these birds to return to the home loft could be used in an efficient rapid communication system. There are oblique references to ancient Greeks, Egyptians and others using the pigeons as messengers but no real authenticated account of the actual carrying of messages until Pliny the elder referred to a message sent by the besieged general Decimus Brutus to the Roman Consuls. But it was written long after the event and mentioned only a rag being tied to the bird's leg. People say Caesar used carrier pigeons during and after the Gallic Wars, but Caesar himself doesn't mention it nor do any of his contemporaries. There is good evidence that Nero used messenger pigeons to notify friends of sports results but the exact method is uncertain. In Egypt, about the same time, the Romans sent messages tied around the necks of homing pigeons but this was irregular and not always successful. A sultan in Baghdad somewhere about 1150 A.D. is given credit for establishing the first effective system using pigeons. No doubt some loft slave was really the inventor. The slave may have been lucky to keep his or her head since inventions in those days were "patented" for nobility by a process known as behcadings. Genghis Khan, the great Mongolian conqueror, who knew a good thing when he saw it, used carrier pigeons for speedy military communications and such use continued up to at least the early days of World War II and for all I know the U.S. Army Signal Corps may still maintain a few lofts. Pigeons carry messages almost routinely over distances of up to 1000 miles; the record set by a Signal Corps bird was about 2300 miles. Fortunately they couldn't carry bombs, at least lethal ones, and white spots on enemy troops had only bleaching power. Enemy troops knew the importance of message carrying pigeons so the birds were targets for every soldier and falcons were even trained to intercept the carrier pigeon.

If a pigeon can carry messages back to home lofts from great distances, then it is possible to hold races in which the bird with the highest miles per hour average is declared the winner. In 1818 the Belgians were holding such races and soon others joined in the sport. The birds were bred with one thought in mind: winning such races. The ideal racing pigeon must have a good sense of direction, high stamina and a strong enough homing sense to bring the bird straight on even past coquettish cooers from other cotes. Almost every nation today seems to have some national pigeon racing society and in the United States each section of the country will have its own Annual Race Meet. The racing pigeons are banded for identification purposes. They are often mistaken for U.S. Fish and Wildlife Service bands placed on wild birds but pigeon bands have two or three letters only which indicate the home loft or breeder and serial numbers indicating year of hatching and individual numbers. The federal bands always have USF & WLS and Wash. D.C. on the bands with the numerals. The American Racing Pigeon Union publishes a yearly Band List so one may easily find out the address and owner of a banded pigeon if one has the booklet. Every year at the State Museum I get several calls for help in such identification so maybe if they saw that each natural history museum got a copy each year there would be a place where John W. Citizen could get information. As it is now many pigeons are lost unless they land in the loft area of another pigeon racer.

The rock dove hardly exists today as a truly wild species since the domesticated strains interbred freely with their feral compatriots. Originally they nested on cliff ledges above 5000 feet altitude in the mountains of Eurasia from the Alps to the central Himalayas only spreading southwards and to the lower lands for domestication efforts in fall and winter seasons. Man keeps his strains going by segregation policies but when pigeon love is full and unbridled the untrammeled flocks breeding in our cities and towns generally soon revert to the plumage worn by their wild ancestors. But they don't really revert to the wild and this

presents an interesting problem or phenomenon: are they really wild if they can exist only on man's waste and/or largess? Forget it if you are planning to get rid of your pigeons in a "humane" way by carting them out into the country a hundred miles or so. If they don't find their way back home almost as soon as you do, they'll starve to death unless they join up with a local farm or village hangers-on club which knows all the best pigeon food supply points. Perhaps *Columba livia* has bred on wild rocky ledges in the higher mountains in North America, but no one has reported such an effort.

Even the homing pigeon comes in several strains and, as with chickens, the eating varieties are numerous. These varieties are not often listed on the menus but some raised commonly are the white kings, blue kings, silver kings, Carneaux, Mondains, giant American crests, giant homers, runts, Hungarians, Maltese, Florentines, Strassers, and Polish lynx and there are color and size varieties among each of these. Rollers and tiplers are strains noted for aerial acrobatics.

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The common pigeon comes in a variety of colors

Sanitation and cleanliness are rigid musts for those raising pigeons, especially for the squab market. They are also raised as pure and simple pets, as things of beauty, for racing contests, and for a variety of lesser reasons. Some pigeons would have whistling devices attached to their tails to create music while tbey flew. Some are raised because of interesting but peculiar stances or feather aberrations. There are general groupings among the 200 strains and the illustrations show puffers, pouters, long-tails, giants, runts, and others all of which have color varieties. Eating pigeons are generally larger varieties but not necessarily so. Squabs are not recently hatched birds, but average 25-30 days in age and in most cases are almost ready to fly from the nest. At this age a pigeon is more tban three quarters of the adult size.

Squab eating is not as popular today as it was forty or fifty years ago but gourmets still rave about them. The loss in popularity is not the reason for the apparent large population increases in our cities. Importunate pigeons in city parks make a fat thing out of tidbits from lunch sandwiches of office and other workers — even bosses have been known to shed a calorie or two into pigeon crops. The city pigeon population would decrease considerably if existing laws against such handouts were enforced but even the most cantankerous policeman finds it hard to ticket motherly old women, fatherly old men, or sweet young things for feeding pigeons in the park. Then we must admit the birds are friendly, attractive, graceful aerialists and add life to the cities.

Pigeon eggs hatch in about eighteen days under normal conditions. The birds have learned to vary their breeding season so city birds may even build nests and lay eggs during warm spells in winter although for various and obvious reasons these nestings seldom produce any young. Adult pigeons may weigh more than two pounds but one pound plus or minus could be considered a fair average. Squabs are marketed in weight size groups as nines, tens, elevens, etc. which simply means that a dozen squabs weigh nine, ten, eleven, etc. pounds. There is a very good book delightfully entitled "Making Pigeons Pay" by W. M. Levi published by Orange Judd Publishing Co. of New York (1968 edition); if you're thinking of reimbursement for cleaning bills and other embarassments you're buying the wrong book as this one tells you how to raise poultry pigeons for gain on the market.

There is such a thing as pigeon milk; really digested and processed food secreted in the crops of *both* parents. It does look like partially curdled milk and is regurgitated for the youngsters' food the first week after hatching. It apparently contains no sugar in any form as does true milk but has high nutritional value, especially if you are a young pigeon. After the first week the "milk" is mixed with half-digested grains until the young can handle whole grain. Father pigeon can nurse and wean the squabs from the first nest while mother is laying and incubating eggs in the second nest. The female pigeon is pretty well liberated — wait until papa can lay eggs!

Because there is pigeon milk one shouldn't he misled into feeding cows' milk to young or sick pigeons. They are almost strictly vegetarian and the experts have "special" blends of grains for various stages in the lives of the pigeons as well as for the different types of pigeons they are raising. The city scroungers are not so fussy and thrive on handouts in the parks and spills from garbage and other sources. If you start feeding them in your back yard on cornmeal and other grains, you will soon discover that the news will spread to nearby pigeons quite rapidly. One family in Troy, feeling sorry for the feathered beggars one winter, started a free-lunch counter. In less than three weeks the pigeon breadline numbered about 500 and the food bill became prohibitive. Soon after the family moved things returned to normal — but the city still had its pigeon problem.

A solution might be for each city to build a cote in each of its parks where those who wished could help feed the birds and the breeding population could be more easily controlled. Human nature being what it is, there would still be a scattering of beggars through the rest of the city and there would be some undesirable squatters on window sills and nesters in rain pipes but to a lesser degree. There would also be a troupe of aerial acrobats, bowing and scraping park performers on the ground, and attractive strutting feathered friends — man's oldest domesticated feathered friend, the pigeon.

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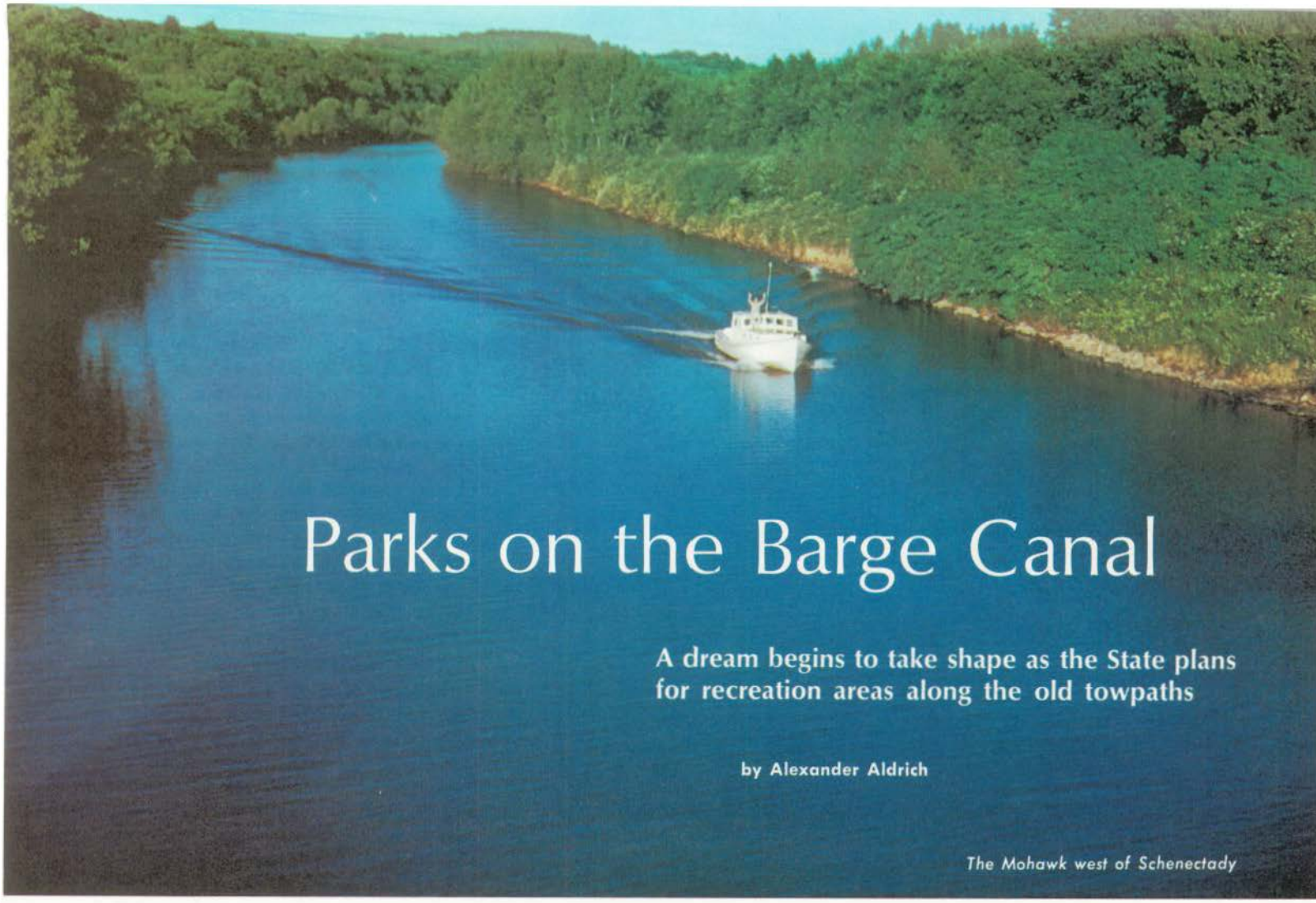

Parks on the Barge Canal

A dream begins to take shape as the State plans for recreation areas along the old towpaths

by Alexander Aldrich

The Mohawk west of Schenectady

FOR nearly three-quarters of the nineteenth century, the Erie Canal played a dominant role in the lives of the people of New York State. The scene of healthy commerce, the canal carried news and excitement as well as passengers and materials for 363 miles across the State, creating a dramatic chapter in our economic and social history. Today the Barge Canal system, incorporating part of the old Erie and other canals, has the potential to enrich the fiber of our daily lives as the Erie did a century ago. Canal parks bring that potential to fruition.

Part natural and part constructed, declining in commercial importance, the canal is rising in value as an historic and recreational resource. Complemented with small parks and trails where boaters, hikers or bicyclists, local residents or vacationers can rest, picnic, watch boats go through the locks, fish, and perhaps swim, the canal generates a very realistic dream that is within our grasp. A dream that has begun to take shape.

Since nearly half of New York State is within 20 miles of this extensive waterway, cruising the canal seemed a good way to visit a number of State parks within the three weeks available to me last summer.

Although I started the journey with a worthwhile but modest purpose, I ended it committed to an exciting new goal —development of the tremendous potential of the Barge Canal System as a recreational resource for the people of New York State. It was not a new idea. I had often heard Governor Rockefeller speak of such a possibility and had readily agreed with him in theory. But it was not until I experienced the remarkable natural setting of the canal and the endless fascination of its diversity that I became inspired to promote the concept wholeheartedly.

It did not take long to get the idea off the ground, thanks to three very important factors: the boundless enthusiasm of the Governor, the splendid cooperation of Department of Transportation Commissioner Raymond Schuler and his staff, and the extremely able support of the staff at Parks and Recreation. During the autumn of 1972, Ray Schuler and I studied the opportunities for cooperative development and came up with a plan which Governor Rockefeller endorsed. Under this plan, DOT will continue to administer the operation and maintenance of the canal itself. Parks and Recreation will be responsible for developing and maintaining recreational and service facilities on canal lands, and for encouraging county and local governments to undertake these responsibilities in their own sections. Much planning has already been done and work at several sites along the canal is well under way. But before we discuss present and future plans it might be well to review briefly the history of the canal, which after all is its most universal appeal, and

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consider how its present use is compatible with recreational development.

In 1817 New York State started construction of a 363-mile channel connecting Lake Erie at Buffalo with the Hudson River at Waterford and, by way of the Hudson, with the thriving port of New York. It was 40 feet wide, 4 feet deep, and could accommodate boats of about 30 tons capacity, towed by horses or mules. Its 83 stone locks carried boats over a rise of more than 550 feet in water level from the Hudson to Lake Erie and represented a major engineering feat.

With no precedent to serve as a guide, the engineers designed the Erie canal and its structures, and thousands of laborers hewed through solid rock, dug channels through marshes, built aqueducts to carry the canal across valleys, and hand cut the stone blocks for construction of the locks.

The Erie Canal was completed at a cost of $7,150,000 and was officially opened in October of 1825 when Governor Clinton and a party of prominent citizens made the first complete trip from Buffalo to New York City on the flower-bedecked Seneca Chief. Wildly enthusiastic crowds greeted them all along the way. Bells were rung, and a relay of booming cannons carried the news of the opening from Buffalo to Sandy Hook, a distance of more than 500 miles, in 81 minutes. The Champlain Canal was opened soon afterward and in 1828 the Oswego Canal and the Cayuga and Seneca Canals were completed.

The canal was an immediate popular success and its importance to the expansion and economic development of the entire northern part of the nation, as well as of New York State, can scarcely be overemphasized. It soon became the main artery for both passenger and freight traffic between New England and the rapidly growing states of Ohio, Illinois, Indiana and Michigan. Freight rates per ton from New York to Buffalo dropped from $100 by land to $10 by the canal route. Transportation time was cut from about twenty days to six. And fast passenger packets, drawn by relays of horses driven along the towpaths at a brisk trot, traveled the length of the canal in three and one-half days.

In the 1840's the traffic on the canal increased to the point of saturation. During that decade, channels were enlarged and additional canals were constructed as the demand for water transportation increased. The flow of goods and people on the canal contributed immeasurably to creating a bond of union between the East and the West, a bond that historians credit with being a vital factor in the winning of the Civil War by the North. When Governor Clinton emptied a cask of water from Lake Erie into New York harbor to symbolize "the marriage of the waters" he was celebrating a union that proved stronger than even that far-sighted politician could have predicted.

From the late 1860's to the end of the century, the Erie Canal experienced a gradual decline in use as competition from railroads increased and users sought ways to ship larger loads than the canal could accommodate. As a result, in 1903 the State Legislature authorized a $101,000,000 bond issue to broaden the Erie Canal and construct a system of waterways to be known as the New York State Barge Canal. Work was begun in 1905 and by 1918 the entire system, the second largest canal in the world, was ready for operation.

The Barge Canal system is 524 miles in length, has an average width of 150 feet, a minimum depth of 12 feet, and can accommodate a 300-foot barge with a capacity of 3,600

Schoharie Crossing, artist's view of canal in 19th century; painting by Edward Lamson Henry (1841-1919)

From the digital collections of the New York State Library.

tons. Canalized rivers, streams and lakes account for 370 miles of the total length, while the remaining 154 miles are artificial land-cut sections. The system consists of four canals or divisions: the Erie Canal (348 miles), which stretches from Waterford to Tonawanda on the Niagara River; the Champlain Canal (60 miles), which extends from Waterford to Whitehall at the head of Lake Champlain; the Cayuga and Seneca Canal (92 miles), which extends from May's Point on the Erie Canal to Ithaca on Cayuga Lake and Montour Falls on Seneca Lake; and the Oswego (24 miles), which connects the Erie west of Syracuse to Oswego on Lake Ontario.

The opening of the St. Lawrence Seaway diverted the main traffic from the canal. Commercial use of the canal system has dropped from a high of more than 5,000,000 tons in 1951 to about 2,000,000 tons today, the major cargo being petroleum and petroleum products. Recreational boating, however, has increased markedly in recent years. Everything from luxury yachts to small outboard runabouts and sailboats make approximately 100,000 lockages annually, and an estimated 47,000 small craft are docked along the canal's waterways.

Studies by the Office of Parks and Recreation show that canal land is also being used by thousands of people for a variety of recreational pursuits. There are nearly 2,000 commercial and public recreation facilities in operation along the system, many of them so heavily used that additional accommodations are badly needed. An estimated 258,000 people visit the 57 lock sites annually, and many of the lock tenders I talked with on my trip spoke of the great fascination the locking process holds for people of all ages. Incidentally, I found most of the lock sites exceedingly well-cared for and the tenders justifiably proud of their operations.

Certainly there is a great need for additional recreational opportunities, especially in urban areas. The canal system passes through 21 counties with a combined population of 4.27 million, two-thirds of which is in urban areas. The lack of adequate recreational facilities and overcrowding are already apparent in these areas and, according to the Statewide Comprehensive Outdoor Recreation Study, by 1990 increased population and leisure time will make even more stringent demands.

The Department of Transportation and the Office of Parks and Recreation are currently conducting detailed studies to identify other canal lands suitable for adaption to recreational use.

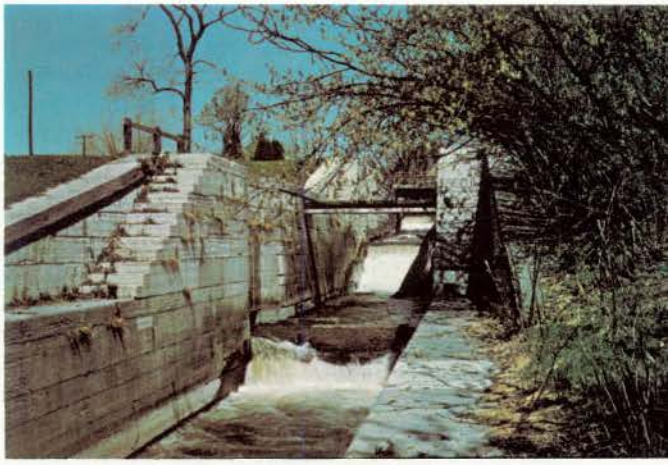
In addition to its principal role as a navigable waterway, the canal is also used for hydroelectric power, irrigation, flood control, and as a source of water supply. This multi-purpose use is factored into our planning for development of the system's recreational potential.

As a first step in the joint program of DOT and OPR six canal parks at lock sites and three canal trailways are opening for use this summer. A five-year development program to establish a unified, interconnecting park and recreation system along the canal is underway.

The accompanying map shows the initial parks opening this summer. Selected for proximity to large population centers, these small parks will provide moorings for transient boats, pumping facilities for emptying boat sewage holding tanks, picnic areas with charcoal grills, and facilities for observing lock operation. Parking will be available for non-boating park users.

The existence of a clearly discernible towpath along

Whitehall waterfront, Champlain barge canal



Waterford Lock, vertical lift of 170 feet

Mud Lock, entrance to Cayuga Lake

Museum at Whitehall features canal history

From the digital collections of the New York State Library.

New York Thruway parallels canal

Commissioner Raymond T. Schuler of DOT and Commissioner Aldrich of Parks and Recreation; background, Joseph Stellato, director of canal system, and Harold Kenyon, chief operator, Lock 9

Parks and recreation areas along the old towpath

Yankee Hill Lock, no longer in use, seen from Tribes Hill

various sections of the canal system encourages the dream of a Statewide trail. The three sections now being cleared as a walkway-bikeway are strategically located for future trail extension.

Funding, of course, is an ever-present consideration. One tremendous cost advantage is the fact that the State already owns practically all of the land along the canal that will be needed to realize our goal. And, by and large, it is in good condition for adaption to recreational use. Incidentally, the lock parks will be tailored to the land use around them and the Department of Environmental Conservation will be consulted, to assure proper ecological safeguards.

Considering the amount and variety of recreational opportunity that will be provided, the cost promises to be modest. The capital cost of creating the average lock park will probably run somewhat under $20,000. Annual maintenance and operation costs may approximate $10,000, but we're encouraging private groups to help maintain the areas. In evaluating worth, however, we must keep in mind that in addition to providing much-needed recreation facilities, the program will produce other highly desirable results. For example, the canal waters will be considerably cleaner as a result of such provisions as holding-tank pumping stations. Historic sites along the canal will be visited and appreciated by many more people. Increased tourism will bring increased business to area communities, and the canal itself will come to be appreciated as the Statewide recreation resource it is.

As enthusiasm for the idea continues to grow, financial support may well come from varying sources. Communities on the canal are being encouraged to develop their own sections and several have shown some interest in doing so. Local businesses, too, may want to contribute to such development, since they will presumably profit from increased recreational activity. A rather interesting prospect, we think, is that individuals and institutions as well as businesses will be able to endow a lock park or trail to memorialize a family name, commemorate an important event or, in the case of a business, promote company goodwill. Local historical societies may also be interested in contributing toward some aspect of the program, perhaps historical interpretation, since the canal system is practically a guide to New York State history.

Widespread cooperation and support is required if the Canal's full potential is to be realized. We trust that by 1975 enough of it will be realized to give a genuine spirit of rebirth to the canal's sesquicentennial celebration, and to the nation's bicentennial in 1976 — for the Erie Canal more than any other single factor was responsible for the development of the heartland of the United States. It made possible both economically and physically the agricultural and industrial development of the Great Lakes Region and afforded access to the Central Plain States.

If we are to keep faith with the past, to preserve our heritage and to build on it for the future, we must be keenly sensitive to opportunities for our historical and natural resources to play active roles in our lives today. Recreation is sought not as a refuge from life, but as a necessary condition for healthy self-fulfillment. Leisure time is not time to waste but time to profit by, not in dollars but in self-regeneration. The first photograph of earth sent back from the moon heightened our consciousness of our interdependence with our environment and our connections with the past. Aware of our history and the natural beauty of our State, we seek to incorporate them into our social fabric.

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Monk Parrots — a year later

Readers report widespread sightings of the South American invader since 1972 Conservationist Article

by Wayne Trimm

Since the first article on the monk parrot appeared in the June-July 1972 CONSERVATIONIST *the work with the bird has shifted to a management level. In the future please send all reports on the parrot to Larry Brown, Division of Fish and Wildlife, N.Y.S. Dept. of Environmental Conservation, 50 Wolf Road, Albany, N. Y. 12201.*

SEVERAL months ago THE CONSERVATIONIST carried an article about the monk parrot and its status in New York State at that time. This species of bird, originally from temperate areas of South America, has been imported to the United States for the caged bird trade. Through a combination of intentional and accidental releases, and its own remarkable adaptability, this parrot seems to have adjusted to our seasonal patterns and has survived. Our original article mentioned several successful nestings in the wild in New York, indicating a possible establishment of the monk parrot as a permanent part of New York State's bird life. At the time of publication we were uncertain as to how numerous or widespread these birds might actually be, and requested information on monk parrot sightings.

This request was picked up by national magazines and newspapers around the country, and the response has been enlightening. The accompanying map demonstrates that the occurrence of these birds in the wild is fairly extensive. However, it is interesting to note that most observations are near large cities where there are numerous pet stores, thus increasing the possibility of the birds' escape from private hands. In addition, there are more feeding stations in these areas for the parrots to visit and more observers to record their presence. In spite of this, most of the reports are of single birds with a small number of "pairs" recorded. Since it is virtually impossible to tell the sexes apart without having the bird in hand, there is no assurance that these "pairs" are mates. Where the numbers of birds are larger, the chance of mates is greater, and observations of possible young are often included.

Several hundred parrots have been reported from the New York City - New Jersey area and more than thirty sightings, some of several birds, were reported from upstate New York. The map indicates location of reports from other parts of the country.

It now appears that, while this species is fairly widespread as to individual birds, there is relatively little indication of successful reproduction outside the New York City area. Here there is quite a reservoir of breeding birds and these may indeed spread out. In most instances these birds have been staying close to urban or suburban areas and, so far at least, seem to be doing little damage to economically important farm crops. This situation may change if the population of the monk parrot increases and spreads, but at the moment agricultural threat is still speculative.

Meanwhile, action is being taken to try to prevent the species' establishment. The state organization of bird clubs in Connecticut has officially recommended eradication of the monk parrot, while the New York Federation of Bird Clubs has recommended control. In Virginia there is already an active program of eradication of these parrots in the wild. The New York State Department of Environmental Conservation has also taken an

From the digital collections of the New York State Library.

Portraits of two of our "wild" monk parrots in New York City

official stand. It is the feeling of our biologists that it may well be too late to prevent establishment of this species, even with an extensive campaign. But, since this bird comes so readily to feeders, it may be relatively easy to control. Our policy is strict control or eradication of the monk parrot as a wild breeding bird in New York State.

This calls for complete cooperation by the public. Many people seem to enjoy having this new bird around, and may be reluctant to report it if such action will lead to the bird's destruction.

The solution would be for people to try to live capture the bird at their feeders. A number of letters report successfully doing just that, thereby gaining a pet and simultaneously removing the bird from the wild population. Recommended techniques for this procedure will soon be available from the Bureau of Wildlife of the Department of Environmental Conservation, Albany, N.Y.

We hope to continue this study of the monk parrot, and welcome any additional reports of birds seen. If enough more significant material is received, we will report further to our readers on the status of this bird.

REPORTED SIGHTINGS OF MONK PARROTS

Sightings of monk parrots in New York State reported by letters to *The Conservationist* include colonies at Rockaway Point, 26th Avenue in Brooklyn and "hundreds" on Rikers Island, three nests on Fieldston Road, the Bronx, and 12 nests near the Hudson River at White Plains. Other sightings reported were of one bird except where noted:

Bay St. at 10th, New York City, Bronx Zoo grounds, Glendale (Queens), Valley Stream 4, Larchmont, Manhasset 7, Staten Island, Ft. Independence Rd. (New York City), Page Avenue (Staten I.), Mamaroneck, Huntington Station 2, Glen Cove Park 12 plus, Bethpage 9, Kenmore (Buffalo), Central Islip, Eden (Buffalo), Rome, Whitesboro, Andes, Jamestown 2, Syracuse, Niskayuna 2, Hamlin (Rochester), Scotia, Newark, Kingston 2, Schenectady, Newburgh, Conklin (Binghamton) 2, Jefferson (Schoharie), East Hampton, Loudonville, Craryville, Troy 2, Fishkill, East Glenville, Rochester, Cheektowaga, Eagle Mills, Hartsdale, W. Sand Lake, Webster (Rochester), Rochester, Glens Falls, Tompkins Co. 3, Dutchess Co. 2, McDonough (Cortland), Stormville (Poughkeepsie) 2, Somers (Peekskill), W. Babylon, Verplank 3, Massapequa, Centre Is. (Oyster Bay) 5, East Meadow 2, Astor Ave., Bronx 2, Forest Hills, Amityville 7, Dewittville, Bronx (Merriam Ave.), Neptune Ave., Brooklyn 6.

Sightings of monk parrots in other northeastern states included 15 at Bridgeport and Stratford, Conn., seven at Greenwich, N. J. and one or more at 25 locations throughout New England. Other sightings reported were from Florida, Michigan, North Dakota, Tennessee, Arkansas, Arizona, Kentucky, Illinois, Ohio, Alabama, Texas, Nebraska, Minnesota and Maryland.

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Courtesy N.Y. Public Library

The Professor Rang a Bell...

Joseph Henry, the Magnet Man

by Richard S. Allen

THE summer heat had made the top floor of the empty school building an oven, and the young professor worked in his shirt sleeves, his collar unbuttoned. Around and around the room he plodded, stringing a spool of thin copper wire from corner to corner. Some odd little basins, filled with salty water stood on one table, and a confusion of iron objects, one a horseshoe wrapped in wire, occupied another. The only recognizable thing in the whole apparatus was a little bell about two inches in diameter.

The tired young man mopped his forehead, and shook the sweat from his heavy black eyebrows. He'd not been married very long, and knew he really should be home with his wife instead of messing about in the vacant school. At length the wire was strung to his satisfaction, and attached to the basins and horseshoe at either end. Carefully, the experimenter dipped a zinc plate in the brine. Miraculously, the little bell tinkled. Professor Joseph Henry smiled. He had, in effect, just made the first long-distance call.

Who was Joseph Henry? Probably the greatest American scientist born between the days of Franklin and the Civil War. He was a man of many talents and interests, and of great accomplishments.

Joseph Henry was born in Albany on December 17, 1797. His father was a laborer of Scots descent. The family lived such a hand-to-mouth existence that young Joseph at seven was sent to live with his maternal grandparents in the village of Galway in Saratoga County. Bright and ambitious, he absorbed all the knowledge to be had in the district school and avidly read just about every book on the shelves of the tiny village library. At ten, the boy was a part-time clerk in the general store situated at the dusty four corners in Galway.

Henry's country boyhood was cut short by the death of his father, and he returned to Albany in 1811 to eke out a living with his widowed mother, who ran a rooming house. A succession of odd jobs followed, the lengthiest being a year's apprenticeship to a watchmaker-jeweler. This came to an end when his employer's business failed in the recession which followed the War of 1812.

It was not all work, work, work for young Joseph Henry, however. He had been particularly intrigued by the plays he'd read in Galway, and additional ones he'd found later. Stage-struck, he joined a group of young Albanians with similar interests, and began to write, produce and act in amateur theatricals.

Hardly before they could be established, thoughts of a career in the make-believe world of entertainment went dramatically out of Joseph Henry's head. In the course of his omniverous reading, he came upon a book on natural science. The challenging world unfolded on its pages made the young man set his life

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abruptly on a new course. Of the book, he wrote . . . "[It] opened to me a new world of thought and enjoyment, and caused me to resolve at the time of reading it that I would immediately devote myself to the acquisition of knowledge." Unfortunately, the title of this magic volume is unknown today, but Henry, the erstwhile actor, became Henry, the serious and diligent student of science.

The young convert to education entered evening classes in geometry and mechanics at the Albany Academy. Since the phonetic spelling that he used was called "atrocious" by his better-educated instructors, Henry used some of his hard-earned daytime wages to have himself tutored in English and grammar. Soon he caught up to and surpassed his teachers, and by dint of many sixteen-hour days was able to graduate from the Academy with honors, having meanwhile become a teacher himself.

For two years Henry tutored the children of Albany's last patroon, General Stephen Van Rensselaer, and helped out with lectures and demonstrations at both Albany Academy and the newly-established Rensselaer Polytechnic Institute in Troy. Not much older than many of the young men he taught, Henry wavered for a time between taking up the study of medicine or continuing his scientific bent in the practice of civil engineering.

The question was resolved in the spring of 1826, when the 28-year-old educator was appointed to the chair of mathematics and natural philosophy at his old school, the Albany Academy. For the next six years, the remainder of his residence in New York State, Henry was to bring honor and recognition to himself and to the Academy for his experiments and discoveries.

Between his lectures and classwork at the school, and particularly during the summer recesses, the professor took up research in the comparatively new scientific field of the relationship of magnetism to electrical currents.

Up until Professor Henry's time, the possible uses of electricity had been largely left to the theorists and to traveling lecturers who produced sparks and some current from primitive Leyden jar batteries. Some of the latter demonstrations, under the guise of entertainment, literally proved quite shocking. The daring volunteers who experienced a mild electrical tingle passing through their bodies had the vicarious thrill of dabbling with the great unknown.

Joseph Henry was fascinated with magnets during a decade in which scientific break-throughs were occurring in quick succession abroad.

The relationship between magnetism and electricity was established by the Danish physicist Hans Christian Oersted, who in 1819 discovered that an electric current could deflect the needle of a compass. Soon André Ampere of France demonstrated that electrically energized coils of wire act like magnets, and his countryman Dominique Arago found that iron could be magnetized temporarily (and steel permanently) by placing it inside a current-carrying coil.

In England, William Sturgeon built a practical iron electromagnet, and later ran it with a zinc plate and mercury battery. Another English scientist, Michael Faraday, was independently making experiments and discoveries in electromagnetism at exactly the same time that Professor Joseph Henry was doing some of the same things in his laboratory in Albany.

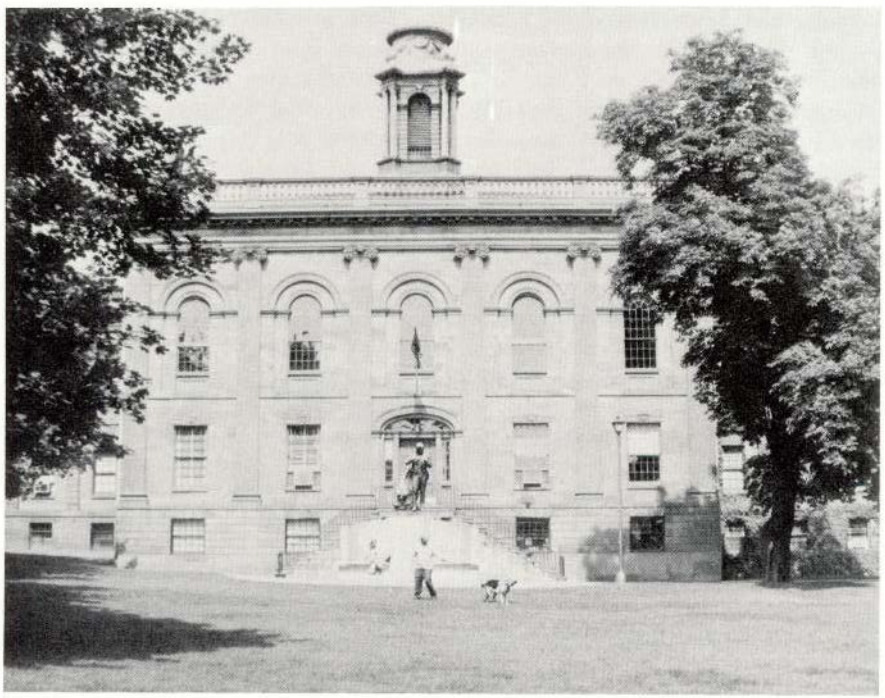
By reading scientific papers and journals published both in the United States and in Europe, Henry kept up with what others were doing. As early as 1827 he had made some improvements in Sturgeon's battery apparatus and was constructing his own electromagnets.

Using his old talent as a stage manager, Henry put on a public exhibition of an electromagnet in March, 1829. Power was supplied by an improved example of one of the world's first sources of steady electric current; the "crown of cups," filled with brine, into which silver and zinc plates were dipped and connected.

Professor Henry noted that the more wires he connected to his voltaic battery, the greater the power in his magnets. Before long he fashioned a twenty-one pound horseshoe magnet that would lift a 750-pound anvil when the battery current was turned on.

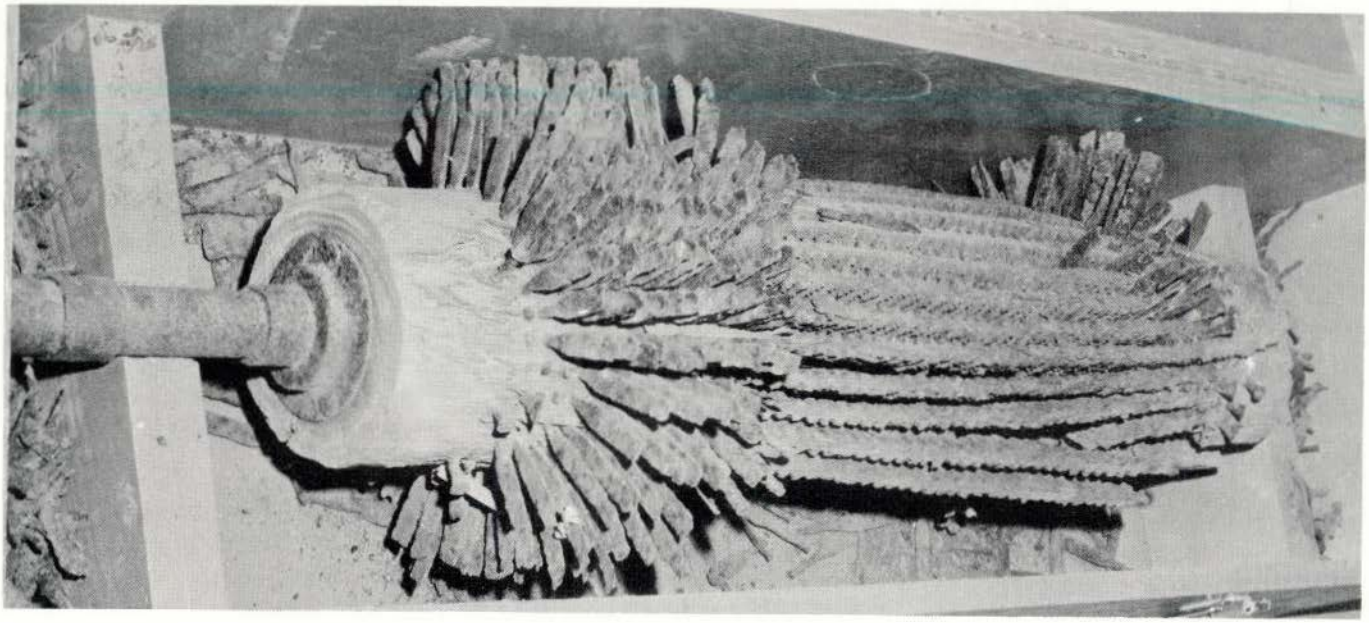
Another device of Henry's was the intensity magnet, one that would respond to a current which had passed through long lengths of wire.

To test this one he strung more than a mile of copper wire around one of the upper rooms of the Albany Academy, and attached a battery to one end. At the other was the electromagnet, so arranged that when the current was turned off and on it would activate the bar of a permanent magnet which in turn would strike a tiny bell. Though by today's standards this would be called a Rube Goldberg contraption, it was in actuality the world's first telegraph.



Old Albany Academy, now the Joseph Henry Memorial, where Henry conducted his experiments in electromagnetism

From the digital collections of the New York State Library.



Magnetic iron ore separator used in Adirondack iron works around 1830-50

Being a true scientist, Henry's first concern was to unselfishly pass on his discoveries and deductions to others. He kept up a voluminous correspondence with other professors of natural philosophy (physics) and the scientific journals regularly published his findings.

By 1830, Professor Henry was making magnets for instructional apparatus to be used at other colleges, such as Yale, Bowdoin, and Pennsylvania. He bought his iron directly from the bloomery of Penfield and Taft, at Crown Point, N. Y. Townsend's Forge at Albany then bent the pieces into the required horseshoe shapes, under the professor's direction.

This arrangement was to have far-reaching side results. Penfield and Taft were building a magnetic iron ore separator at their works, and sent the little magnets with which it was fitted all the way down to Albany to be charged. Going a step further, they wrote to Professor Henry:

"We wish you to make a machine that will answer to magnetize the points for our (ore separator) machine. We shall leave it to you to make such a one as will answer . . ."

Always working under the limitations of time, space, money and his commitment to education, Joseph Henry managed to make a new electromagnet with attached voltaic battery. This was sent to Crown Point in the summer of 1831, and put in operation at Penfield and Taft's iron works. It was the nation's first industrial application of electricity. The present Adirondack hamlet of Ironville has properly marked the site.

Two years later, a Vermont blacksmith, Thomas Davenport, purchased one of Henry's electromagnets from Penfield and Taft. Inspired by its use, Davenport in 1837 invented and received the first patent for a true electric motor.

Back in Albany, the rooms in which Professor Henry conducted his electrical experiments were taken over for classes every fall, and his apparatus had to be dismantled and stored. Such an arrangement was not conducive to steady progress.

Other subjects, a study of meteors, a report on the Aurora Borealis, a walking tour along the New York-Pennsylvania line "to observe the variation caused by terrestrial magnetism," all took the professor's time and thoughts. By November, 1832 he had accepted a chair in Natural Philosophy at the College of New Jersey (now Princeton) and left Albany to take up his duties there.

Joseph Henry, who by his own admission, "aimed only at the general good of the world," got no monetary reward for his pioneering in electricity. It remained for others to develop his primitive machines.

The electrical pathfinder never returned to New York. After fourteen years at Princeton Henry accepted the post of Secretary of the new Smithsonian Institution in Washington. It was exactly the job for a man of his character and talents, and he guided the establishment through its formative years with a firm hand. Henry's work as secretary of the Smithsonian, stimulating and supporting original research in the various sciences, left him no time to continue or capitalize on any of his own former interests and experiments. He dedicated the remainder of his life — over 30 years — to the work of the Smithsonian. On his death in 1878 the national museum was called by many: "Henry's Monument."

Joseph Henry has another fitting monument in his native city. It is the Old Albany Academy, the beautiful sandstone building which stands in Academy Park near the Capitol and State offices. Dating from 1816, the structure is now known as the Joseph Henry Memorial and is still used, appropriately, for Albany school administration. A bronze statue of Henry, engaged in jiggling a magnet, has graced the front lawn since 1928.

Two rooms at opposite ends of the Old Albany Academy have particular significance to the history of electricity. In the northeast corner basement Joseph Henry first raised a huge anvil by electromagnetism. And in the southwest corner room of the third floor he started the current flowing which first rang a bell at the end of a mile of wire.

From the digital collections of the New York State Library.

A Modest Proposal to Improve Deer Habitat

Existing legislation permits forest management on land acquired for public hunting

by C. W. Severinghaus

SUSTAINING a larger deer population in the Central Adirondacks is similar to sustaining an increase in the amount of water in a barrel which has several leaks at different levels. All efforts to fill the barrel to a level above the lowest hole will have only temporary results.

Tens of thousands of fawns are added to the Central Adirondack deer population each spring. Some of them die from exposure and weakness at an early age; some by predation; others from illegal hunting, cars, etc. Efforts can be made to reduce these losses with varying degrees of success.

The supply of deer will be controlled by the fawns which live through the first winter. This represents the available food supply during that particular winter. Fawns that cannot get adequate food during January through May (or until new food grows in summer) will die of starvation and related causes. Each winter the deer population is reduced to the level of the adequate available food.

The number of deer in the Central Adirondacks may increase when proper deer food on the winter ranges is increased by logging, fire, or blow-down.

Normally the closed crown of a dense forest allows little light and heat from the sun to get to the ground and, with poor seed germination, deer forages are not produced in quantity. A forest management plan for deer food should open the forest crown, enhancing the production of shrubs, bushes, and young trees. Under the main provisions of Article XIV, section 1 of the State Constitution this cannot be done. It states that the lands of the State constituting the Forest Preserve shall be kept as wild forest lands. They shall not be leased, sold, or exchanged, and the timber thereon *shall not be sold, removed, or destroyed.* Rulings of the Attorney General have allowed minor timber cutting to provide vistas and the cutting of 3" diameter trees or less as emergency winter deer food. The basic ruling has been that wild forest recreation was allowable on the preserve so long as no "material degree" of timber was removed.

There is a little known section of a State conservation law: Section 361, (now recoded as Sect. 11-2103), Acquisition and Use of Property, which states that:

"1. The Department shall have power to acquire by lease, purchase, gift, devise, agreement or otherwise from any sources, lands, waters, or lands and waters, or any right or interest therein, for the purpose of establishing and maintaining public hunting, trapping and fishing grounds.

"2. The Department shall have power to receive real and personal property by gift or devise from any person or from the United States Government and to accept such property in the name of the people of the State. Under this power any property of any nature or any rights therein may be received and accepted if the Department deems it suitable for purposes of fish and wildlife management.

"Lands or water accepted under this power shall be held for the use of the Division of Fish and Game and shall be improved or developed as the Department deems best for such purposes. Such lands and waters shall not become a part of the forest preserve nor be subject to the limitation of Section 1 of Article XIV of the State Constitution."

Under the provisions of Section 361, it is possible for the State of New York to acquire lands within the Forest Preserve on which the forest could be managed for the best interests of deer and other wildlife. Browse production acreage for wintering deer could be acquired and held under Section 361 of the Conservation Law.

There are about 150,000 acres of land in and adjacent to deer wintering areas in the Adirondack Forest Preserve which could be developed to increase forage for deer. These unique areas of winter deer range comprise less than 7 percent (150,000 acres out of 2,275,000 acres) of Forest Preserve land in the Adirondacks.

A dense forest crown will produce less than 25 lbs. of deer browse per acre each year. To survive one deer needs about 4 lbs. of browse per day for 180 days of the winter. Some 150,000 acres producing less than 25 lbs. per acre would produce less than 3,800,000 lbs. total and thereby provide adequate food for less than 5,300 deer. On the other hand, the same acreage managed in a four-step rotation would produce on an average in excess of 100 lbs. of good deer browse per acre per year (the full range being from 100 to 400 pounds per acre). These acres could then sustain more than 21,000 deer and possibly as many as 47,000 wintering deer.

Management of deer populations in past years has been mainly limited to the harvest of bucks, does, and fawns which were judged to be in excess of the carrying capacity of available food supplies on winter ranges (see article in Feb.-Mar., 1972 CONSERVATIONIST).

Section 361 of the Conservation Law authorizes the provisions of Section 175 for the Department to develop and carry out programs and procedures which will promote natural propagation and maintenance of desirable species in ecological balance and lead to the observance of sound management practices.

With such authorization in existence, perhaps we can better close the lowest hole in the barrel by maintaining, developing and improving the available supply of browse and forage on winter ranges of deer on legally manageable Adirondack lands.

Public interest, support, and funds will be required. Both the hunting and the non-hunting citizen will be benefitted.

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From the digital collections of the New York State Library.

4-H—Senior Citizen of Youth Groups

by Paul Kelsey

OF all the youth organizations, the 4-H sprang most directly from the earth, and without even intending it, probably has the longest record of helping youth become good stewards of our natural resources. That in the modern parlance means they have a long tradition of environmental concern.

When the Smith-Lever Act was passed in 1912, the 4-H Division of the Cooperative Extension Service was set up to work with farm youth. Teaching youth how to properly raise the best crops and livestock available, so that members would grow up to take their place in the rural community as productive citizens and leaders, was their "thing." Since World War II, when society became much more urban-centered, the 4-H program has placed more and more emphasis on youth in general and less on its own membership. Today thousands of youths, who don't even know it exists, are profiting from the efforts of the 4-H.

Since its inception, one of the philosophies of the 4-H program has been that growth of character and leadership of the youngsters would be helped by sharing their learning experiences with others. One of the ways that this is accomplished is through demonstrations and exhibits at fairs. To many fairgoers from urban communities, the twig, leaf, and insect collections, the wood duck houses and similar exhibits are the main visual contact that city folks have with the 4-H.

For years one of the most popular 4-H projects was that of rearing and releasing pheasants. The recent budget crunch almost brought this to a halt, but the local sportsmen have taken up the torch in many counties and are now reimbursing the boys and girls for the pheasants they release.

Interest in reforestation was just beginning when the 4-H program started. They taught many a farm lad that the best crop for some land was trees, and scattered around the State there are now literally thousands of acres of odd corners and otherwise unproductive land where small 4-H reforestation projects were established.

Interest in forestry was given further boosts some thirty years ago when they had their first Adirondack tour for members who had done outstanding jobs with conservation projects. In recent years, the tour has been headquartered at the Department's Conservation Education Camp at Lake Colby from whence they have gone forth to see such things as winter deer yards with biologists, the forest plantations at Paul Smith College, visited various forest types such as a spruce bog and white pine stand, learned about forest fire control from the Department's Rangers, toured Cornell Maple Research Station, visited a fish hatchery, and the controversial plantations near Wawbeck that Dr. Fernow planted after clear-cutting about 200 acres of low grade hardwood (they now clearly show the wisdom of his actions). Mountain climbing, wood cutting contests, and the Onchiota Indian Museum add variety and entertainment to the broad program.

At the review of the 1971 Adirondack tour, during the usual discussion of possible changes, someone tossed out the idea of a canoe trip. It seemed too big for a State activity, but David Grey, the 4-H Cooperative Extension Agent in Oswego County saw county and regional posibilities. On the 22nd of July last summer, 70 youth and adults from Oswego and surrounding counties launched their canoes at Long Lake Village for a four-day Environmental Awareness Canoe Trip. To supplement the leadership that local adults could give, a naturalist was engaged from the Adirondack Museum to accompany the group and to describe and interpret the natural sights they would see along the way. Arrangements were made to meet one of the Department's Foresters at Axton Landing to discuss "Adirondacks: Today and Tomorrow." In his evaluation later, Grey pointed out that this type of experience "offers the opportunity for youth to become part of the natural environment — not just a visitor."

Around the State are camps owned and operated by the county 4-H offices, such as Camp Owahta in Cortland County. Talking with Bob Blatchley, who has been the local 4-H agent since the camp's inception, one quickly gathers that the camp philosophy isn't just fun and games, but also offers learning opportunities in the woods and plantation by seeing and doing. The swimming area becomes an exciting classroom when a fishery biologist points out the many small plants and animals in that aquatic community, ending up by successfully landing a beautiful brook or rainbow trout which is gently returned to the water after all have had a chance to admire it.

The use of the camp further points up another 4-H philosophy which has developed over the years. Though special attention may be given to members, their interest goes far beyond, to youth in general. The camp doesn't sit idle throughout the year. For several years Owahta has been the site of the county's sixth grade conservaion field days. Under an agreement with BOCES, the camp is rapidly becoming a focal point for the program being carried out by their outdoor education coordinator, Charlie Yaple. Before the school year is over every sixth grader, except those in the City of Cortland, will have spent at least one night at this outdoor education center.

The sixth grade conservation field days mentioned above, and described in detail in this magazine (AS '65) by Joseph Lindenmayer, who developed the pilot program, shows well how they are influencing youth far beyond their membership. Working with educators and other professional conservationists, the agent is the catalyst that keeps the other participants involved moving, and through his office resources and contacts he is often the main conductor behind the scene. To the youngsters who don't know him, he is just the fellow who comes around on a wagon delivering milk or picking up the

(Left) Continuing — Canada Geese (George E. Dolnack, Jr.)

From the digital collections of the New York State Library.

empty lunch bags afterwards.

The Cooperative Extension Service has had a lot of experience with the magnifier effect of leader training. With this background, it isn't surprising that the 4-H agents have often stepped into the picture with workshops and teacher training sessions developed in cooperation with the local schools. This past fall, Dick Schwenzer, working with a planning committee of teachers, developed a 30-hour in-service training course, "Ecology for the Classroom," which was attended by about 40 teachers from five central school districts in Greene County. Through his contacts he was able to bring in professionals to instruct from SUNY at New Paltz, Union College, Cornell University, the State Museum, the County Planning Department and the Department of Environmental Conservation.

When the Conservation Leadership Training Camp opened at the Arnot Forest in 1948, in the remnants of an old C.C.C. camp, they had three learning-by-doing sections; soil and water conservation, forestry, and fish and wildlife conservation. During the week a club member got a very practical course in whichever of the three he chose. Not only did the boys apply what they had learned back on the farm, but they were active leaders in passing the conservation gospel to members and neighbors in their home community. (CONSERVATIONIST DJ '55-'56)

Like the other 4-H programs during the last decade, the swing has been away from concentrating on the farm youth to the broader needs of all youth. As a result, the new Natural Resource Teen-Leadership Camp at the Arnot would hardly be recognized as the same camp by the old-timers. Upon completion of this camp, the youth are prepared to return to their communities as teen leaders in two of the 4-H natural resources programs, Let's Explore, and Environmental Awareness. In addition, they have received training which will help them build community nature trails and outdoor education centers. The fourth element in last year's program was a natural to arouse interest and awareness of the plants around us — the study of wild foods.

The Let's Explore program is designed for 9-10 year olds around some basic biological concepts illustrating the relationship between living and non-living things. They stress the energy flow from the sun through plants and animals to man. Loosely structured they can be easily adapted to either rural or urban situations. The aim is to excite the youngster's curiosity and guide him as he pursues information about the world around him.

The Environmental Awareness program for teenagers is based on the assumption that environmental awareness cannot be taught, but must be experienced. It is a discovery program in four different environments. Along the way, the participants should develop the scientific method of acquiring knowledge, and also aplying this to making decisions. The four environments for which programs have been developed are the town and city, the farm, inland water, and the forest.

As the 4-H moves from a strictly rural oriented program to one which reaches out to touch the urban and suburban youth, they are not leaving their earth orientation behind. While adhering to the motto, to make the best better, they are bringing awareness of man's ultimate survival on the proper use of God's gift of resources to all the youth of our country.

Adirondack Odyssey

(Continued from page 7)

The storm raged all night. The next morning Don Vanderveer, whose party was also succumbing to the weather, offered to haul us and our boats and gear the 90 miles back to Old Forge. It wasn't easy to resist the impulse to get down on my knees and kiss his muddy boots. The ride in the back of his pickup truck was a little breezy but most welcome.

Upon reaching the car at Old Forge, we put John's Sunflower on the trailer first, unceremoniously tossing our gear inside the muddy hull. We felt a touch of sadness as we strapped my boat over the top to seal off the elements because we were very aware that this was the closing chapter of one of our finest adventures.

Even as we drove homeward we were planning our next venture.

Corrections

The article, "Tears For the Trolley" in our February-March issue contained a box with an incorrect address. Copies of "Trolleys Down the Mohawk Valley," which is also listed on our book review page in this issue, and other books on vanishing forms of transportation are available from William Reed Gordon, 232 Beresford Rd., Rochester, N. Y. 14610.

The December-January issue of EQ News listed an environmental bibliography, "Where Have All the Flowers Gone" as a free publication. The Arrow Company, 3385 South Bannock, Englewood, Colorado 80110, has informed us that there is a charge of $2.95 for this excellent resource guide.

The company has a 1973 catalog that is free upon request.

Contributors *(Continued from page 2)*

leagues at the Atmospheric Sciences Research Center of State University of New York at Albany. Mr. Falconer conducts two daily weather shows on 11 radio stations and has been manager of ASRC's Whiteface Mountain field station since 1966. He is a frequent contributor to this magazine. Mr. Cheng is a physicist with special talents in photography. Our December-January 1971-72 cover was a photomicrograph produced by Mr. Cheng.

C. W. SEVERINGHAUS (Deer Habitat) is Supervising Wildlife Biologist with this department and a recognized authority on the white-tailed deer. This article is one of a series which began with our February-March '72 issue. His articles in magazines and scientific journals have earned him an international reputation and a number of State and national awards.

WAYNE TRIMM (Monk Parrots — a Year Later) is art director of this magazine and nationally known as an artist and writer on nature subjects.

RALPH LARKIN (Search and Rescue) is assistant coordinator of the Oswego County Pioneer Land Search and Rescue Team and lives in Mexico, N. Y.

MAL COUTANT (How to Report a Polluter) is a member of the legal staff of this department.

Book reviewers include GARDNER L. GRANT of White Plains who has fished in many parts of the world and is past president of Theodore Gordon Flyfishers, and DR. RICHARD A. JAYNES, associate geneticist of the Connecticut Agricultural Experiment Station, and editor of "Handbook of North American Nut Trees."

PAUL SCHAEFER (Wild Rivers) has been involved in all major campaigns relating to the protection of the Forest Preserve since 1931. He has been vice president of the Association for the Protection of the Adirondacks for the past 25 years. He is president of the Adirondack-Hudson River Association and vice-chairman of the Adirondack Conservancy. His major work for many years has been restoration of early American buildings and the construction of museum complexes.

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Book Reviews

Conducted by Joan Taylor

Great Fishing Tackle Catalogs of the Golden Age, ed. by Samuel Melner and Hermann Kessler, 344 pages, Crown Publishers, Inc., $6.95.

"What fisherman cannot recall his boyhood excitement at the arrival of a new tackle catalog — the ecstasy of looking into a new Eden and the despair of beholding the angel barring the way with the flaming sword of penury?" — writes Sparse Grey Hackle in introducing this volume of old tackle catalog pages, reproduced to cover five time periods: I— pre-1890; II — 1890-1899; III — 1900-1909; IV — 1910-1919; V — after 1920. The earliest entries are circa 1838 and the finale, fittingly ends the "Golden Age" with the Payne rod in the mid-1930's.

This book is a must for every fisherman's night table. You can open it to any page, read it front to back or vice versa, and derive much pleasure and not a few laughs, from its catalogue pages.

One must suspect the editors of a certain predilection for fly fishing since this area is covered most thoroughly. There is, however, plenty of material for aficionados of all types of fresh-water fishing, especially the bass angler, but there is rather less for the salt water man. This shouldn't be too surprising since the great developments in salt water angling, including the tackle and the craft bringing angler to quarry, have taken place since World War II.

The proceedings are infinitely livened up by the commentary of that most amiable, knowledgeable, and gifted angling writer, Sparse Grey Hackle. The 1915 Abercrombie & Fitch catalogue helpfully presents a table of the weight shrinkage of fish based on time after demise. Sparse writes — "This shrinkage table is a remarkable tabulation since it is universally believed that the trout is the only fish that keeps growing after it is dead." In the late 1800's, a famous old Boston tackle house offered a sheet metal worm box with belt loop attachment, adorned with the French word for "worms." Sparse muses — "Worm boxes identical to these are still on sale. Why a fisherman needed to label his worm box, and in French at that, is one of the unsolved mysteries of angling."

Leafing through the pages yields some surprises. Many devout fly rodders will

be horrified to learn that Hardy's of England once sold worms! The fisherman will enjoy comparing today with yesterday — learning what is really new, and what he thought was new. Most will be fascinated by comparing the products and the prices, as I was. One can even find solace when he notes that in 1878, Krider offered a rod of unspecified material with a hollow butt for $38 and a spliced bamboo rod with "extra joint and tips" for $60. In 1973, one can buy a far better rod for less. However, this is the exception to the rule and Sparse's comment on a rod refinishing offer by Charles F. Orvis is far more representative — "The man who just paid $40 to have a rod refinished, rewound, and revarnished must be saddened to see that he could have had the same job for $2.50 in 1905."

Samuel Melner and Hermann Kessler have brought together a most unusual collection of catalogues of the fishing tackle American angling grew up with — representing both the English and American products available to our anglers of the "Golden Age."

One will have to draw on his own experience to find a "message" in this volume which really isn't intended to convey one. But anyone who fishes and has a bit of nostalgia in his soul, will find browsing through this to be great fun — and that's what fishing and "Great Fishing Tackle Catalogs of the Golden Age" is all about. — GARDNER L. GRANT

Trees of Pennsylvania, the Atlantic States and the Lake States, by Hui-lin Li, 276 pages, University of Pennsylvania Press, Philadelphia, $17.50.

An illustrated guide to the trees has to have outstanding and unique features to compete with the existing tree books. The 600 line drawings and 100 photographs would be expected to make this an exceptional book, but it measures short on several counts. First the good points — the layout, typesetting, reproduction and format are excellent. A great deal of useful information on the trees, their flowers and fruits is contained in the text, line drawings and the photographs. Unfortunately, many of the black and white photos must have been converted from color shots. The lack of detail plus the high contrast often leaves the viewer with little more than a vague impression of the true character of the live branch or tree illustrated; e.g. quaking aspen, page 59. The fruiting branch of butternut is indistinct to the point that the plate was inverted. Photos like the gray birch in a woodland setting are distracting in that this is a pioneer species characteristic of open fields. The fact that the illustrated gray birch has whiter bark than the white birch is also misleading.

The line drawings are neat but they are not as discriminating as they should be and they are occasionally misleading, e.g. winter buds of mountain laurel are shown, but in fact they should be invisible beneath the leaf petiole.

You will find no mention of the American elm. You may recognize the Latin name, *Ulmus americana*, but would you call it white elm as does the author? We are told white (American) elm yields a valuable wood, but nothing is said about the ravages of the Dutch elm disease. The American chestnut, we find, is threatened with rapid extinction by the chestnut blight fungus. Why are we not told that, in fact, only sprouts remain and that chestnut as an important tree was completely eliminated in the eastern United States over 30 years ago?

If you have a good tree book keep it for awhile longer.—RICHARD A. JAYNES

Litter — The Ugly Enemy — An Ecology Story by Dorothy E. Shuttlesworth with Thomas Cervasio, 63 pages, Doubleday and Company, Inc., $4.95.

The authors of "Litter — The Ugly Enemy" are eminently qualified to have undertaken the task of telling 6-8th graders about the litter problem, and to point out some of the means of solving this blight to our urban communities. Adults who can skim over the Ralph and Rita narrative approach will find many helpful ideas, too. Thomas Cervasio has worked for the City of East Orange, New Jersey for twenty-five years, where he is the Sanitation Superintendent. His professional interest in quality environment has

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made him active in numerous ecology organizations, including Keep America Beautiful, Inc., for which he has been a consultant since its formation. While working for The American Museum of Natural History, Dorothy E. Shuttlesworth proved her ability to communicate with youth and became the first editor of "Junior Natural History," a position that she held for twelve years.

Cities across the country are spending untold millions of dollars just trying to clean up litter, and millions more to dispose of refuse in ways it will not endanger health or reduce property values. The key to success of these endeavors is citizen cooperation, without it, much of the effort is wasted. With words and photographs, "Litter—The Ugly Enemy" tells the story of Ralph and Rita in an imaginary city, drawing on what has actually happened in many towns and cities, and how they and their classmates became involved in the fight to halt the degradation of their attractive community.

Starting in their own classroom, one step led to another, until the whole community was working together on the litter and refuse problem. The final chapter briefly describes the outstanding programs of ten cities around the country where the fight against litter has been a success. — Paul M. Kelsey

New York City's Last Frontier, Field Trips on Staten Island, by Arthur M. Shapiro, 56 pages, The Staten Island Institute of Arts and Sciences, $2.50.

The author made excellent use of his 18 months as a member of the faculty of Richmond College on Staten Island. He has hiked over its beaches, dunes, bogs, parks and vacant lots, and has produced several short essays on the natural history of the island together with a guide to four one-day field trips.

He knows a great deal about the plants which find acid soils hospitable, about butterflies, serpentine rock, and vegetational succession, which he tells the reader in graceful prose and illustrates with his own sketches.

The little book constitutes a most effective argument for preservation of the island's vanishing open space without being preachy about it. Since it may not reach local bookstores we include the address where one may purchase a copy: 75 Stuyvesant Place, Staten Island, N. Y. 10301.—R.F.H.

Please do not order books from THE CONSERVATIONIST. *The books we review and list can be obtained or ordered through local bookstores.*

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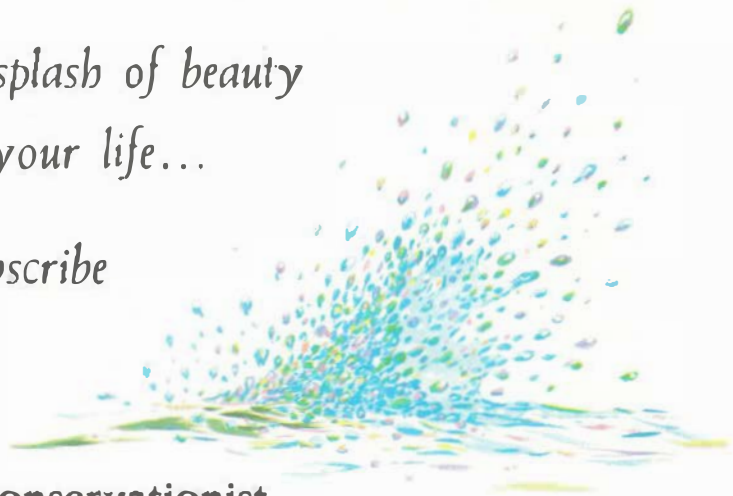

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The Last Stand, The Nader Study Group Report on the U.S. Forest Service, by Daniel R. Barney, Introduction by Ralph Nader, Center for Study of Responsive Law, P.O. Box 19367, Washington, D.C., $12.50.

Natural Ecosystems, by W. B. Clapham, Jr., 248 pages, The MacMillan Co., $3.95.

The Atlantic Flyway, by Robert Elman, 203 pages, Winchester Press, $15.00.

The Incompleat Folksinger, by Pete Seeger, 596 pages, Simon & Schuster, $12.50.

Open Space in the Inner City, Ecology and the Urban Environment, Photographs by Arthur Tress, An exhibit portfolio by the N.Y.S. Council on the Arts for the New York Museums Collaborative, The Fenimore Book Store, the N.Y.S. Historical Assoc., Cooperstown, $5.00, $7.50 outside N.Y.S.

The Earth Mass, words by Joe Pintauro, drawn and lettered by Alicia Bay Laurel, Harper & Row, $4.95.

Interpreting Environmental Issues, 290 pages, Clay Schoenfeld, ed., Dembar Educational Research Services, Inc., Box 1605, Madison, Wis. 53701. $9.90.

Ecology: Cycle and Recycle, by Grace Holden Kolbas, 168 pages, Sterling Publishing Co., Inc., N. Y. $7.95.

Principles of Environmental Science, by Kenneth E. F. Watt, 319 pages, McGraw-Hill Book Co., $10.95.

Action for Wilderness, ed. by Elizabeth R. Gillette, 222 pages, Sierra Club Books, $2.25.

James Bay, by Boyce Richardson, 190 pages, Sierra Club Books, $2.75.

Disaster By Oil, by Jeffrey Potter, 301 pages, The MacMillan Co., $7.95.

Trolleys Down the Mohawk Valley, by William Reed Gordon and Robert D. Mowers, 224 pages, Wm. Reed Gordon, 232 Beresford Rd., Rochester, N. Y. 14610, $4.95.

Chico's Organic Gardening and Natural Living, by Frank (Chico) Bucaro and David Wallechinsky, 154 pages, J. B. Lippincott Co., $5.95, $2.45 paperback.

Central Park, A History and A Guide, by Henry Hope Reed and Sophia Duckworth, 165 pages, Clarkson N. Potter, Inc., $5.00.

Alaska, the Last Frontier, by Bryan Cooper, 248 pages, William Morrow and Co., Inc., $7.95.

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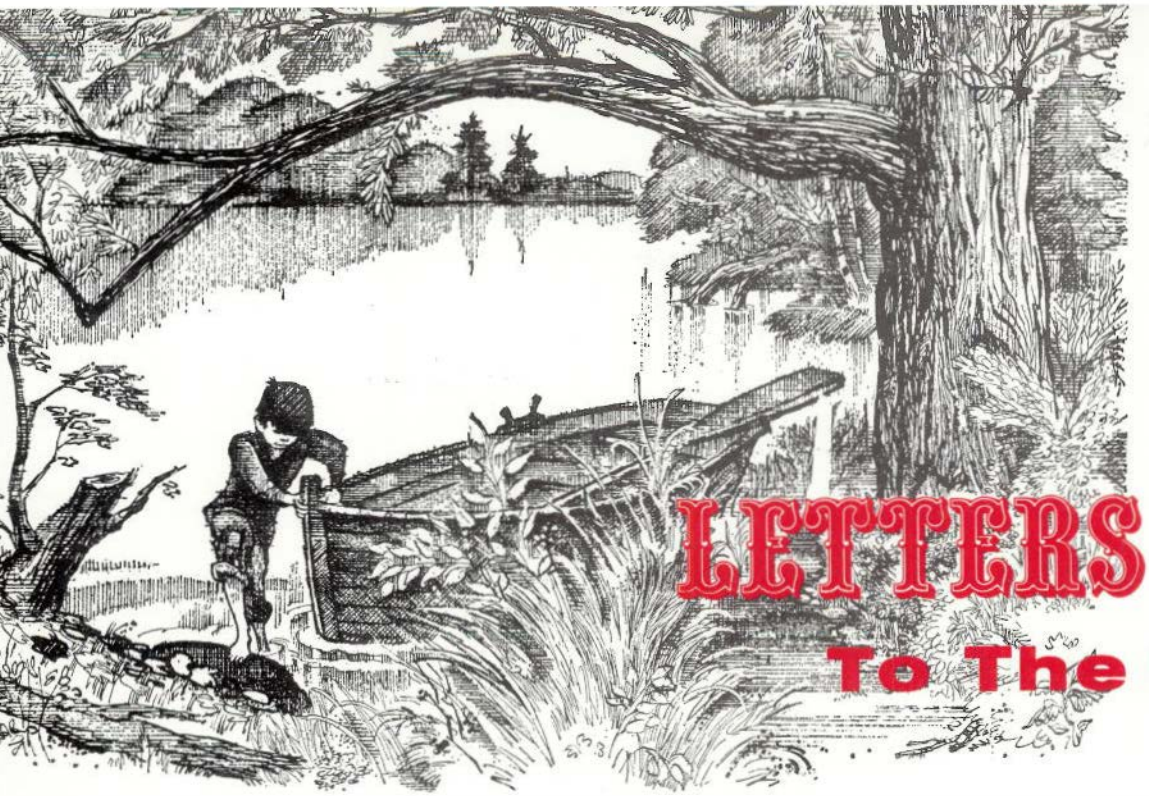

Longley in The Christian Science Monitor © 1962 TCSPS

LETTERS To The Editor

Likes uncut magazine

Dear Sir: Enclosed please find a check for $5.00 to cover the cost of THE CONSERVATIONIST for 5 years to St. Rita's School Library. Letting the good sisters borrow my magazines is at best risky. It seems that they love the pictures and articles, which I prefer left in the magazine. That's why I did not use your handy coupon.

E. A. Wittman, Webster

Hudson River quilt

Dear Sir: I have answered the letter you forwarded requesting more information about the Hudson River quilt. There are many good books about quilt making, and Mrs. Irene Preston Miller, who was a driving force behind our quilt, runs a needlecraft shop called the Niddy Noddy, Albany Post Road, Croton, New York. Rather than making a quilt just like ours, I suggested that the writer make a quilt of her own design, showing scenes from her life on the farm and her family's history. A friend in Charleston, South Carolina wrote that she was inspired enough by our quilt story to begin one showing the historical houses of Charleston. Mrs. Miller tells me she is considering a symposium on quilts in conjunction with this summer's celebration of Croton's 75th anniversary.

Barbara Patterson, Croton-on-Hudson

Trolley tours in 1914

Dear Sir: I read with a great deal of interest your article "Tears for the Trolley" (February-March). It was fine.

I am 77 and quite active. Around 1914 I and a friend made many trips on the trolleys from my home then in Brooklyn. We made one-day trips into New Jersey, Westchester, Connecticut and Long Island. To make the various trips we had a guidebook published by The Brooklyn Daily Eagle. This book of 144 pages cost 10 cents and listed various trips, the cost of each connecting line's fares, and the time to make the trip on each line. I still have my copy which is in very good condition and I would not part with it for it brings back many happy memories. Some of the trips listed went as far as Washington, D. C. and Chicago, Illinois.

I would not swap my old-time trolleys for any of these modern day polluting buses with their stinky smell. Sure the trolley had to stay on a track and sometimes trucks or cars broke down on the track. But we were not in such an all-fired hurry then as today.

Keep up the good work and thanks again for just a little look into the past.

E. A. Dieckert, Bethpage

Tree-planting project overlooked

Dear Sir: A winter visitor from the Empire State has left me the August-September issue of THE CONSERVATIONIST, which I find as interesting as ever and with superb photography.

Yet, as a forester and former staff member of the "Conservation Department" I can't help wondering how you could devote a whole issue of the magazine to Long Island without giving some play to a tree-planting project—unique of its kind—which has had so marked an impact on the environment of Long Island parks and parkways. I refer to the extensive planting of the Japanese black pine (*Pinus thunbergii*) on these areas, under a program initiated by the Long Island Park Commission about 1930, in cooperation with the Division of Lands and Forests. This program was undertaken with the object of establishing a species of pine on the park lands that would tolerate the salt spray and fog which had proved so injurious, especially on the south side of the island, to other conifers that grew or had been planted there; and the success of these plantings has been attracting the attention of foresters and landscape planners for the past three decades.

Edward W. Littlefield, Port Charlotte, Fla.

Subscribers Please Note!

In order to provide our subscribers with the best service obtainable on their subscriptions *The Conservationist* is making several improvements in its circulation system. Among these is a change of address for all mail pertaining to subscriptions. All renewals, new subscriptions, changes of address or inquiries about a subscription should now be sent to:

The Conservationist, Subscription Dept.
Box 2328 Grand Central Station
New York, N. Y. 10017

Letters to the editor or any other correspondence which is not concerned with subscriptions should be mailed to the Department of Environmental Conservation offices at 50 Wolf Road, Albany, N. Y. 12201.

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Moses-Brower dialogue

Dear Sir: Three cheers for David Brower and Friends of Earth, and thanks to THE CONSERVATIONIST for printing the debate between Moses and Brower. Our environment faces too much of a crisis to settle for surface issues that only cosmeticize the real problems. I find that your magazine and "Not Man Apart," the Friends of Earth monthly, hit the nail squarely.

While Mr. Moses no doubt can build one hell of a bridge, I would rather trust my world to the philosophies of men like Brower.

Michael Maduras, Jr., Monroe

Dear Sir: The dialogue by Robert Moses and David Brower on the Conservation Issue points up the tone of the struggle between the free enterpriser and the environmentalist on the ecological problems of today.

Each debater extends his arguments somewhat beyond the center of the issue. Somewhere between their respective positions there is a substantial amount of middle ground.

If the free enterprise system is carefully handled, it can provide for the reasonable needs of man, and not wreck the balance that is necessary for the preservation of nature.

On the other hand, if the base of our economy abuses the environment we are in for trouble. It is reasonable to believe that without man the earth would somehow manage.

However, man without the earth would be in a serious predicament.

Alvin R. Jordan, Lewisboro

Dear Sir: I must admit that I savored Robert Moses' message to the Merchants of Panic, who have become increasingly manifest in the conservation movement. Brower's rejoinder, though couched somewhat in the familiar, over-simplified analogies used by the Defenders of the Faith, e.g. "When you have reached the edge of an abyss--," should not of course be ignored. The dialogue goes on. This is good. Perhaps the alarmists will not cry wolf too often before the problem has been properly defined, attacked, and solutions presented and as a consequence the "Machine" appropriately modified.

A. T. Altobellis, Starkville, Miss.

Dear Sir: Mr. Moses' article in the February-March issue made plenty of sense to me as I am experiencing the same frustration on the articles I have been reading by so-called experts and scientists on ecology and environment. No sensible person could evaluate the presented facts and come away with a reasonable opinion on what or what not should be done. Very few experts are willing to make a statement as to their findings for fear of alienating some group. This is not a time to be partying for favor. We cannot proceed to a solution if not enough facts are presented so as to instill in those responsible, the will to participate in a united effort. But with so many contrary reports daily, this goal may never be achieved. A good part of our failure on this problem is, in my opinion, the ignorance of quite a few and the greed of many.

Anthony J. Carmeci, North Bergen, N. J.

Dear Sir: My vote goes to Robert Moses as winner of your dialogue debate with David Brower. Mr. Moses wrote with clarity and substance, Mr. Brower came across as just another one of the doomsday environmentalists loose in our land today. His "chicken little" approach to the environmental challenge is too negative to take seriously.

Jim Trainor, Spring Valley

Dear Sir: I'm not keen on professional joiners. This country is full of amiable retirees who have a bit of spare time and money but don't quite know how to employ their new leisure. So they look around for a cause, rage or crusade, something to talk about. The true fanatic of course is something else. He fancies he intercepts messages from above, when all he really gets is wrong numbers.

Robert Moses, New York City

Dear Sir: Good old Robert Moses, he hit the nail right on the head describing these latter-day conservationists. They are running around in circles crying wolf. In the end they will be eaten up just like in the story.

Bart Stuart, Kingston

Dear Sir: Hurrah for Robert Moses and his defense of anarchy! I haven't seen a comparable statement since the great days of Ish Kabibble. It's high time someone besides Casey Stengel came out forthrightly and belligerently for alopecia in the public sector. It's ignorance of our macaronic heritage that prompts long-haired beatnik intellectuals like Barry Commoner to cry wolf just because all our bronchi have chestnut blight. And in pursuit of what? After all, ignorance is bliss, the Richmond Parkway is a masterpiece, and environmentalism is just a pot of message. Remember the great Ptomanian philosopher, Meniscus Drotz, who said: "Were truth ever so false, neither thou nor I would refuse not the atonement for our misdeeds?" Of all our public officials only Robert Moses has lived this difficult principle to the hilt.

Arthur Shapiro, Davis, Calif.

Dear Sir: Mr. Robert Moses, in his article entitled "The Conservation Issue" writes with the wisdom of maturity, experience and reality. He speaks for many of us who lack the naiveté and verbosity of the current disciples of our environment. Contrary to what environmentalists contend, all pollution is not all man-made, nor is its prevention within the power of man. Changes in our environment for good or bad go on all over the world irrespective of man's efforts to improve his way of life.

The Credo of Friends of the Earth, "We shall welcome the inspiration of old masters and new" was not applied to old master Moses. This points up one of the basic weaknesses of our environmentalists — they all want to be heard but they don't want to listen.

J. F. Witter, DVM, Orono, Maine

Dear Sir: If Robert Moses didn't agree in advance to your matching his article in the Feb.-March issue of THE CONSERVATIONIST with another by David Brower as a debate, he's entitled to claim a foul. Your artist makes Brower so saintly as well as far-seeing he must have had trouble leaving off the halo.

W. A. Casselman, Elizabethtown

Bird feeders

Dear Sir: I read your magazine every two months and find the articles both interesting and informative. In the December-January issue you presented a rather interesting article, "More Wildlife Where You Live," which gave me an idea.

In talking with a friend once about birds and bird feeders the subject came up as to which type of feeder was best. My friend said, "The type of bird feeder I find most amusing is one you can make very easily from a plastic bleach bottle or some similar, gallon container. First, you cut 1½ inch holes about one or two inches from the bottom; then you fill it with wild bird seed and hang it from the limb of a tree. When the birds come to eat out of this container, the flapping of their wings to maintain balance, makes the jug spin like a merry-go-round."

John Herbert Cruver, Walden

Winter solace

Dear Sir: Living in New York City, I have had limited opportunities to visit and avail myself of the many beautiful regions of our wonderful State. Past winters for me were long and dull and they required all the patience and strength I could muster to wait them out until spring, when once again I could take out my flyrod and head for the cool, clean streams of the Catskills and Adirondacks.

Since receiving THE CONSERVATIONIST, however, on those occasions when I found myself here in the city, through your pictures and stories you brought the Catskills and Adirondacks to me and have made this the most tolerable winter in a long while.

Congratulations. As long as there is THE CONSERVATIONIST, it will be found in my home.

John S. Saladyga, Brooklyn

From the digital collections of the New York State Library.

A plea for animals

Dear Sir: I am 47 years old and I've collected firearms and hunted since I was 12. With my family (wife, two girls and a son) I have had the pleasure of spending our vacations for the last 11 years in the Adirondacks — Forest Lake near Chestertown to be exact.

During those summers I've declared war on the red squirrels because they chase the birds in the bird feeder and harass the chipmunks we feed from our hands. During the fall I have hunted deer and have killed several coons that were in our trash cans.

This past summer I bought my 9-year-old son a BB gun. The first wild animal he killed was a mouse in our bedroom. One night a raccoon was in the trash cans again and I reached for my shotgun when my 15-year-old girl started to cry, and said why don't you use the camera instead. I did. The next day she gave me a poem she had written. I have given it a lot of thought. Maybe you would like a copy of it as she wrote it.

George Klinefelter, Jr., Washington, D.C.

First a raccoon,
in his lumbering way
like my cat
followed with a flashlight
sought by a man with a gun.
Then two squirrels
running through
trees free
spotted by a
young boy
shot by
a man with a gun.
Finally a mouse,
quiet and quick
in his ways
found by
a man
shot by
a young man with a gun.
A young boy with a gun
becomes a man
in his father's eyes.
A man with a gun
is a man
because of his gun.
Both have power
in their hands —
a gun.
Demigods in
their minds —
because of a gun.

Speculator ski center

Dear Sir: Robert O'Brien who wrote the article on "Skiing New York" (December-January) was somewhat remiss in failing to mention perhaps the oldest continuous ski operation in New York State.

In the mid 1920's Speculator was called "the winter sports mecca of the east." The T-bar in Speculator was far ahead of the Vermont developments that have since sprung up. I have photographs and information dating back to the mid-1920's recognizing Speculator as a winter sports center.

Our Oak Mt. Ski Center is one of the oldest in the State. It has three T-bar lifts and many trails and slopes. Snow conditions are always good, cost is minimal, no waiting in line and there is a large parking area. As a native who has been active in skiing for the last 40 years, I naturally resent having one of the oldest and better developments left out of any article written on skiing in this State or in the U.S.

Oak Mt. is now operated and owned by Mr. and Mrs. Tom Novosel and continues to be an inexpensive, well-groomed family center. Perhaps the old timers like Mr. O'Brien's father remember when the 1932 Olympic team trained here because it was the only area that had the snow and the facilities to host them.

You are to be congratulated on your magazine and the type of articles you use. The purpose of this letter is to set the record straight.

William H. Osborne, Speculator

Warning needed

Dear Sir: It was considerate of your subscriber from Elmira to give you a second chance and not cancel his subscription.

Here is one subscriber, quarter-century vintage, who believes that your publication was great when it was resumed following the war and that it is even better now.

In these times of the shrinking dollar and vanishing values, where can one find examples which exceed a dollar's worth for a dollar?

Your light in the belfry keeps us aware of what kind of a world our grandchildren are destined to face unless others like you ride far beyond Lexington to spread the warnings.

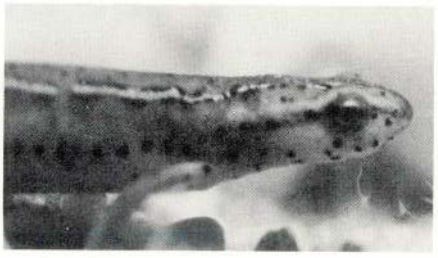
Paul S. Gravel, Dollard des Ormeaux
Quebec, Canada

Reports pet eft

Dear Sir: I have something for the records—the oldest living red eft. I estimate the age at eight years plus. My wife and I have had it as a pet for six years now, and it was an adult when we obtained it. It has grown an additional inch in length and almost double in diameter. Over the years its bright spots have fused into solid lines.

Efts are, even to a limited extent, trainable. It will respond to a signal at feeding time and come to a light tapping at the lower edges of the tank, whereupon it nudges the glass and stares back at us.

John R. Templar, Philippi, W. Va.



Curriculum misunderstood

Dear Sir: The article "Through the Eyes of Children" by Gail Wallace was brought to my attention by the two art teachers in our school.

In the article it said, "None had previous art instruction. The Town's public school offered only two years of art training."

Every child in grades 1 through 6 takes art weekly; we have a 7th and 8th grade program, plus three units on the high school level. Those students with talent, two of which were in the summer program, take art each year under an individualized study program.

The summer program described was a very worthwhile program but downgrading the school program doesn't seem the way to prove the program a success.

Philip Leonard, Superintendent
Hoosick Falls Central School

• *It was not our intention to downgrade Hoosick Falls Central School in any way and we regret the error.— Editor*

Youthful praise

Dear Sir: In defense of your new format for THE CONSERVATIONIST, I think that it has become the finest environmental magazine in the country, a fine testimonial to a state that has been a leader in attacking environmental problems.

And to those youth groups and students who are environmentally concerned and probably frustrated in their attempts to make people aware of their concern, I urge them to contact me at Box 44, Harriman, N. Y. 10926, for possible participation in a student environmental coalition.

Bill Christie, Chairman
Coalition of American Students
for the Environment

Picture credits

Dear Sir: The December-January issue photo credits in the Burroughs article were in error. The correct credits are: Page 15, Photo by Richard Nelson; Page 18, Upper right photo by Eric Beamish; Page 19, Both photos by Eric Beamish.

Thomas A. Henley, Vestal

Picture Credits

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Credits for April-May

Paintings by John Pike in April-May issue were courtesy of Heritage Bank of Kingston. Paintings by Robert Orsini courtesy of Lewis Galleries, Woodstock, N.Y.

From the digital collections of the New York State Library.

Your Questions Answered

Conducted by Paul Kelsey

Project Suggestions

I am in 4-H and take a biology lab in high school. I am looking for a project which might be good for both situations. Any suggestions would be appreciated.

Marvel Ware, Parish

I helped a scout once with an extremely interesting project where he studied the insect populations of two nearby ponds, one an established pond, and the other a new one built the previous summer. The predatory population had not yet become established in the new pond. If you can locate a series of ponds of different ages, it would be interesting to see how quickly a normal population developed. Another interesting study might be comparing the insect life in a spring run stream with that of a small stream in which anchor ice formed. Still another comparison would be between swift water and still water, noting the physical changes and adaptations that have permitted closely related insects to inhabit different environments. If birds interest you more than bugs, study the interrelationships between birds of the same species nesting in your yard. How close do they nest to each other? Do they have territories around the nest they defend, and how long? Do they feed in these territories? There are no end of questions you can answer if you keep your eyes open and a pencil and piece of paper handy.

Uneaten Shrews

The varions sketches on the Sketch Book page are fine, but where did the author ever find an animal that would eat a shrew? I have been a working woodsman all my life, and am now 84. I have seen where cats, dogs, foxes and weasels will kill a shrew, but I never saw or heard of one eating a shrew.

Louis F. Smith, St. Ignace, Michigan

You are right that many animals will kill shrew without eating them. Cats commonly leave them on the doorstep. While working on the grouse survey on the Connecticut Hill Game Management Area, one of our tasks was to collect fox droppings, so we checked likely spots such as ant hills and rock piles for them. I recall our search was often rewarded with a dead shrew — probably killed, but not eaten, by a fox. Analysis of over 3,000 fox droppings collected on the Hill, however, showed that 3.2 percent contained shrew. The study also indicated that the main food of weasels was mice, while running a poor second, but still ahead of the cottontail rabbit was the shrew.

Planting Nuts

I acquired some walnuts and butternuts last fall. Will you tell me how to plant these nuts so that they will grow into trees?

Michael Battaglia, Kenmore

I hope that you have stored the nuts in a cool moist place, for they will not germinate if they dry out. One of the best ways to store walnuts over winter is in alternate layers with sand in a well-drained pit about two feet deep. In the spring they can be removed and the hollow ones discarded by floating them in water. In most instances I would recommend planting immediately after the nuts are collected in the fall. One major problem in planting nuts, whether in spring or fall, is giving protection from squirrels and other rodents. This can be done by securing a cone of hardware cloth over the planting site, which is removed when the seedling gets to be about six inches tall. A simpler system is to take a #2 can for each seed, burn it to remove the tin so that it will rust quickly, remove one end, and cut a cross in the other end, pulling the points outward to permit the future stem to come through the hole. Place two inches of soil in the bottom, then the nut, and fill the can with soil, compacting it enough to eliminate any air pockets. Flip the can over, placing it open side down in a pre-dug hole about an inch deeper than the height of the can and cover with an inch of soil. Site selection and seedling care are important. Walnuts require good, well drained soil. The seedlings will not compete well with other vegetation, so they should either be mulched or an area at least three feet across should be kept weed free. For more information I would recommend reading, "Planting Black Walnut for Timber," USDA Forest Service Leaflet #487.

Blue Jays

We've had several blue jays at our feeders. I wonder if you can tell me the difference between the males and the females, they all look alike to me.

Barbara Todd, Afton

They look alike to me, too. In fact they look alike to each other, and what's more, most of the year they could care less.

Fortunately, Mother Nature has programmed her look-alikes so that as the breeding season approaches, a male will make a specific display to another of its kind. If it is a female who has reached a certain stage in her sexual development, she will respond in a very specific way. One display then leads to another, and the first thing they know, they are hooked with family responsibilities for the summer. If the bird displayed to is a male, or a female that is not yet ready to react to this display, they will respond in an entirely different manner, or may not respond at all. In any case, the matter is dropped right there with no feelings hurt.

Co-ed Clubs

Of all the various sports clubs—rod and gun, fish and game, etc. — throughout New York State, could you please tell me what percentage, if any, allow women membership? If not, why not? Since when is hunting and fishing for men only?

Adele Molinski, Hudson

During the twenty-five years that I have had reasonably close contact with sportsmen's organizations in central New York, I don't recall ever being aware of one that wouldn't take a woman's dollar for membership just as fast as they would a man's.

Hunting and fishing are definitely not men only sports. A survey run by the Bureau of Sports Fisheries and Wildlife showed that in the 1970 population 12 years old or older, one woman in every nine fished, compared to one man in every three. They haven't taken to hunting with the same gusto, for it was one woman in every 94, while one man in five hunted. Unfortunately, most people interested in hunting and fishing do not join conservation clubs, in fact the 1970 survey showed only 5.1 percent were members.

Blue crabs

About ten years ago I was catching crabs to use as bait. To my amazement I found a robin's-egg blue crab of pretty good size — about 2½ to 3 inches. A bait salesman told me it was an Alabama mud crab. Last summer, while fishing the West Canada Creek I found a dead one of about the same size. How and when did they get here?

Nicholas Curri, Jr., Utica

Blue individuals of all three genera of crayfish found in New York have been recorded. The color can be quite variable, dull or bright, dark or light, or even purplish. It usually fades to brown at the base of the limbs and at the tips of its extremities. Living in Pennsylvania and West Virginia is a species of crayfish, *Cambarus monongalensis*, which is normally a brilliant blue, including the base of its limbs and the tips of its extremities. Our blue phase is believed to be of genetic origin, passed from one gen-

From the digital collections of the New York State Library.

eration to the next as a recessive character which is not normally visible. When both parents carry recessive genes, some of their young may inherit the recessive gene from both parents, and not show the normal characteristics. For more details consult THE CONSERVATIONIST, F-M 1967, "A Rare Crab," by Howard A. Loeb.

Mistaken shooting

In Pennsylvania the law permits a person who mistakenly shoots protected wildlife to turn it in to the nearest game protector and pay 25 percent of the fixed fine. What is the penalty in New York for killing game by mistake?

Dominick F. Bongiorno, Jr., Ilion

The Pennsylvania law you refer to also says, "If after investigation, the Director is not satisfied that the said killing . . . was done by mistake, but was caused by negligence or carelessness, he shall order the defendent to be prosecuted in the regular manner." Our philosophy in New York is that killing an antlerless deer in a buck-only area is either a deliberate act or caused by carelessness or negligence. Furthermore, law enforcement officers feel it would open a Pandora's box, for many illegal deer are taken out of the woods during the deer season even at the risk of $100 fine and losing the privilege of hunting. It would be much more tempting to violate, if all a person had to say to get off the hook when caught by a Conservation Officer was, "I was on my way to find you to turn in this deer I shot by mistake."

Deer and Dogs

I am 15 years old and want to help the deer in my area. Man's best friend has turned to man's worst enemy. Wild dogs run deer all over the place. You can't walk into the woods without a gun to stop them from coming after you. I wish you could give me some information on what I can do to help the deer.

Daniel Munson, Winthrop

The law protects pet dogs chasing deer from being shot by anyone except law enforcement officers outside the Adirondack and Catskill Parks; within, anyone can destroy dogs chasing deer. Not all dogs without collars are wild. I have known hunters with very valuable dogs who would remove the dog's collar before releasing them to hunt for fear it would get hung up on a fence or branch. You can be of assistance to your local Conservation Officer by keeping him informed of the activities of the local deer-chasers. Any patterns of activity that you can furnish him will increase his chances of overtaking the dogs.

Multiflora Rose

Multiflora rose has long been advocated for wildlife. I grant you that it makes a fine fence, but on our 350 acre farm in southern Livingston County, I don't find the berries utilized much for food or the bushes used to a great extent for nests. What is your personal experience with this rose?

Floyd King, Outdoor Editor
Rochester Democrat and Chronicle

I am surprised at your observations on multiflora rose, for the hedge that is along the side of our property gets very heavy use by song birds, pheasants, rabbits and woodchucks. Many times I have seen where deer have browsed heavily on the fruit. My personal observations of multiflora rose have been that it gets a great deal of use as food and as protective cover from both predators and weather. My only reservations on rose are that the seeds carried by birds and dropped at random around the countryside can cause the plant to spread into places where it can be a very great nuisance. An uncontrolled tangle of rose of this type, however, can be a real rabbit haven and/or heaven.

Snakes

I wonder if you could tell me which snakes are dangerous? We had many brown snakes last summer, even in the garden.

Annie Bonnet, Pine Hill

Though the Catskills are in the range of both the timber rattler and the copperhead, these poisonous snakes are generally restricted to the more remote rock areas. There are several kinds of snakes, such as the ringnecked, DeKay's snake, garter snake, and the milk snakes which could pass for brown snakes by one who didn't want to take time to examine them closely. These are much more common and are beneficial around the garden.

The poisonous snakes in New York have a distinctly triangular head, resulting in a conspicuously restricted neck. The neck of the non-poisonous snakes seems to blend into the head with only slight change in size. If you get to look them squarely into the eye, the poisonous snakes have a vertical slit for a pupil while the non-poisonous snakes have a round pupil.

Anchor ice

I would like to know the conditions that contribute to the formation of anchor ice; also its effect, if any, on fish life and other life in the stream.

Paul Hayes, Richland

Anchor ice forms in relatively shallow non-spring streams where the flow of water is rapid enough to keep the surface water from freezing in the normal manner. Since the slowest moving water is along the bottom and sides of the stream, this is where freezing occurs when the water temperature has fallen below 32 degrees. The ice forms in streamlined layers over the stones and gravel on the bottom. Since ice normally floats, as the cakes of anchor ice get larger they may break away, carrying the stones and gravel embedded in them, and be swept downstream with the current. The pounding and grinding done by the ice and embedded stones may destroy large quantities of aquatic organisms. For this reason the small spring-fed streams generally have more aquatic food than the larger streams. In streams where anchor ice occurs the fish themselves generally retreat to the deeper holes where they are not seriously affected. Smaller fish may move into spring-runs.

Fox Hunt Cancelled

It seems that at a place called Sunnycroft Ponderosa in Wallkill, they are hunting foxes with hounds. After the hound catches the fox, the nearest hunter gets its tail and a free weekend. I thought this kind of barbarism had been outlawed years ago. What can we do to stop this wanton cruelty?

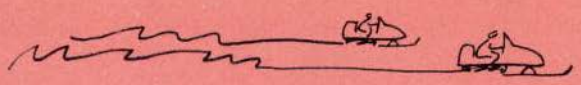
Bernard Weitz, Jamaica

Hounds are used to hunt fox in two ways. If the object is to get the fox, the hounds are put on a fresh trail and the hunters try to anticipate where the fox will lead the hounds. They station themselves at likely crossings, hoping that the fox will pass within shooting distance. This is just like hunting rabbits with a hound, only it covers several square miles instead of just a few acres. When hunters ride to the hounds, whether they get the fox is of no importance, in fact, they probably aren't even carrying any weapons. They are out for a good cross-country ride letting the fox lead the way. If it is a healthy fox, the betting odds are grossly in favor of the fox. The third possibility, and this is what they were planning at Sunnycroft Ponderosa, is a modification of greyhounds chasing a mechanical rabbit. A "drag" with enough fox lure on it to make it attractive to the fox hounds is pulled over a course by a man on horseback. After a few

drinks, while giving the "fox" a head start, the hounds are released and everyone is off on a grand crosscountry horseback ride. The dog that gets to the "drag" at the end of the course is judged the winner. Since the dog doesn't care about a free weekend at the Sunnycroft Ponderosa, they planned to give that to the nearest hunter instead. You will be glad to know that there were so many complaints about the cruelty to foxes, that the scheduled fox hunt was cancelled.

From the digital collections of the New York State Library.

In the Wake of the Snowmobile Debate



The debate on the snowmobile in our December-January issue unleashed a flood of mail from our readers, all of it anti-snowmobile. Defenders of the snowmobile (and their number must be legion judging from the sales figures) apparently were willing to rest their case with Mrs. Barbara Hammond's well-written defense. For the one-sided character of the excerpts printed below blame not us. — The Editor.

* * *

Evidently Mrs. Hammond has never had the opportunity to view the damage done to new fruit and berry orchards, or see the winter wheat that has been frozen because snowmobilers have driven over it. The heft of the machine and driver packs the snow and stops the life-giving insulation. Must be that she has never banked root vegetables in a garden and had some snowmobilers drive over them! I'll grant that it is the driver who is at fault most of the time, but the machines are heavy enough to pack the snow and destroy the insulation.

Sally Pierce, Honcoye

If controls on snowmobiles remain as lax as they are now, then it is not worth the price. They will continue to be abused for many years to come. Until man starts to realize the consequences of his actions, life will lose its meaning for me.

David Taylor, Pittsford

Privately-owned snowmobiles should have their registration numbers stamped or cleated into their tracks so that they leave an identifying trail wherever they go. And they should be restricted to carefully selected trails, because they spectacularly preempt the areas in which they operate. In spite of what Mrs. Hammond suggests, they just do not lend themselves to multiple-use recreation.

Kenneth L. Baldwin, Pleasant Valley

I must disagree with Mr. Burden's opening rebuttal remarks that it is only the "lawless" snowmobilers who cause the problem. It would seem that there is an inherent incompatibility between motorized recreation and the non-motorized forms. The motorized vehicle is the intruder. This is an inherent problem and is true no matter how nice the operator is; lawless operators only exacerbate the problem.

Donald M. Gray, Troy

No one will deny the use of snowmobiles for emergency service, but their use for the operator's fun, which infringes upon every non-operator's rights, seems to demand legislation against them. If France and Norway have wisely banned the machines entirely, New York State can, too. As Mr. Burden states simply: "There is no other way." THE CONSERVATIONIST readers should be vigorously communicating this message to our State legislators.

Ray E. Homan, DeWitt

As to "people of all ages" being able to enjoy winter instead of "sitting indoors doing little of a physical nature," I have seen very few senior citizens on snowmobiles (many cannot afford them) and the law frowns on small children operating the machines. Those I have seen range from high school students revving their parent's machines in front of the house at 2:00 a.m. to heads of households (who keep more conservative hours). Nor do I see what is so physically beneficial about riding a snowmobile; in fact most riders look like they could benefit from some exercise.

Daniel Cook, Alpine

At age 75 I find forest travel easier and more pleasant in winter than in summer. Thus I am forced to discard Mrs. Hammond's suggestion that the snowmobile opens "our winter wonderland" to all kinds of people who could not otherwise use it. Of course they can use it. All they need is a little gumption to get out and take a little exercise, so badly needed today.

Blake L. Lawrence, Charlotte, Vt.

I have seen deer being hunted from a snowmobile with loaded guns out of the case and many other laws being broken. I believe in laws on the snowmobile but if no one is out there on the trails enforcing the laws, the laws are of no use at all.

Harold Manchester, Richmondville

Permits should never be given for *recreational* use of these winter horrors. Just because some thoughtless persons want to use them as toys is no reason for allowing it.

K. Chandler, Staatsburg

We live on what used to be a quiet country road, leading to the Hudson River. A local developer constructed several modular 'homes" on a small plot of land. With the modular home dwellers came the snowmobiles. Soon I found myself being run off the icy, snowy road, while trying to avoid them.

Mrs. S. Capowski, Milton

Let me offer two comments which the two articles on snowmobiling brought to mind. One is a statement to the effect that there are some things on which there are not two sides. The other was a spoofing title in a past issue of Punch, which satirized the Readers Digest. The title was "The Positive Side of Bubonic Plague."

Robert Tyson, New York City

Snowmobile laws are unenforceable. The registration numbers are too small to be seen if the machine is moving. People are afraid to offend their snowmobiling neighbors by reporting the noise nuisance. Snowmobilers either don't get the message that they are offensive or they don't care.

Shirley Rice, Trumansburg

As to snowmobiles "bringing the family together outdoors in winter," this is pure nonsense. Snowshoes, skis, or a pair of hiking boots can do the same, and do it better.

Jeff Bodler, Galeton, Pa.

Strict regulation and "snowmobile-ways" and limiting the machines to regular traffic routes is desirable. I hate to think of my delightful Catskill Mountains being overrun. All of Mr. Burden's arguments are most sound!

M. P. Mauldin, Waco, Texas

I do not know if it will make any difference in a society that is becoming obsessed with machines of all types and uses — and misuses — but I, for one, want to go on record as being completely opposed to snowmobiles except as emergency vehicles in New York State.

Jack Risdell, New York City

It is depressing but probably true that snowmobiling prospers primarily because it is a mooey-maker. Snowmobiles are just one more thing we don't need and would be better off — physically, ecologically and mentally — without.

A. Wallace Bryce, Scarsdale

Only if snowmobiles are strictly limited to existing, vehicular thoroughfares can the damage Mr. Burden calls attention to be avoided, but there is no possible way of preventing them from leaving roads or established parking spaces to roam at will through unchartered areas.

Robert C. Weinberg, New York City

This appears on a sign at the entrance to a hilltop farm outside Poultney, Vermont:

A wintery message from your host
(Who is not yet inclined to post)
Advance on horseback, or on foot,
Or skis, or snowshoes, but
NOT SNOWMOBILES—they drive the deer,
Affright the hare and partridge here,
Disturb the peace, and awake
All who want to hibernate.

So welcome, hunters, lovers, too.
And all who've come to see the view,
And friends and neighbors, and even my boss,
But snowmobilers, get lost.

— A Reader

From the digital collections of the New York State Library.

EQ News

Supplement to THE CONSERVATIONIST

JUNE-JULY 1973

Pollution in Your Ear

by Fred G. Haag

Our rising standard of living depends upon mechanical devices. However, all too often increasing mechanization has been accompanied by more noise. As we enter an era in which "better" means improved quality instead of bigger and faster, control of environmental noise will become increasingly important.

Noise is one of the most ubiquitous forms of pollution, often erroneously regarded as another side effect of civilization that we get used to. In fact, our ears and well-being pay a price when noise is present. For proper sleep, obtrusive noises must be held to a low level. Moderate noise levels can interfere with speech, compromise privacy and affect our mood. At high levels noise can cause permanent hearing damage.

Traditionally noise has been defined as unwanted sound. For noise control this is too subjective to be useful as an operational definition. Beautiful music is often in the ear of the listener and one person's sound can become another person's noise.

The factors that determine when sound becomes noise are volume, frequency, time variation, context and message. The volume, usually measured in decibels, determines the loudness of the sound. As the number of decibels increases, there is some point at which sound turns into noise. The loudness and annoyance of a sound also depends upon the frequency content. We tend to judge higher frequencies to be noisier. Pure tones are also noisier than multi-frequency sounds of similar sound power.

The A-weighted decibel scale of a sound level meter takes into account both the volume and the frequency of the sound. Measurements taken in dB(A) units approximate how the human ear would rate the noisiness of a sound. The threshold of hearing for a pair of good ears is around zero decibels. On the other end of the scale, 100 dB(A) is a very loud sound, though many machines produce noise levels in excess of 100 dB(A).

The time variation relates to how often the sound occurs and whether it occurs at night or only during the day. The context of a sound is difficult to quantify. For example, an unmuffled automobile may be appropriate at a stock car race, but out of context on a road near a hospital it becomes a noise source.

The message contained in a sound is another subjective consideration. Unlike most other pollutants, noise involves a primary input to our senses, it often tells us something. In England, during World War II, RAF aircraft were not considered noisy when they flew over English homes because of the message of safety that they carried. On the other hand, airplanes flying over homes near present day airports may remind the residents of the possibility of a crash and because of this alone they may be considered very noisy.

What are the causes of noise pollution? There are several causes. One is the increasing use of power machinery. Another is the trend to suburban living which in turn causes increasing car and truck usage. Also, as noted long ago by James Watt, to some noise is erroneously suggestive of power. Many of our current problems with hot rod automobiles, raucous lawn mowers and whining vacuum cleaners are caused by equating noise with power.

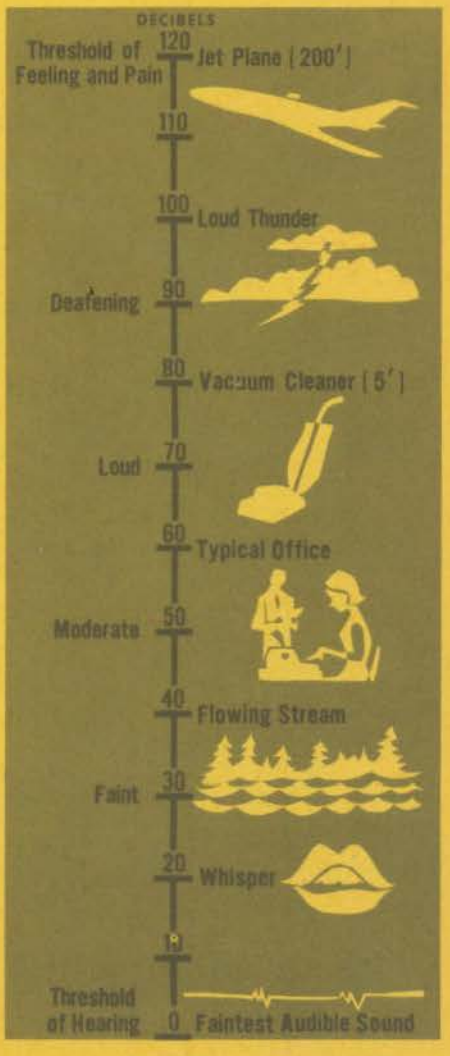
Another reason for increasing noise pollution has been the lack of incentive for manufacturers to design and produce quieter products. In the past, consumers have not demanded quieter products. Fortunately this is beginning to change, some manufacturers now are promoting their products on the basis of low noise. The Federal Noise Control Act of 1972 will eventually have a considerable impact since the Federal EPA will set noise emission standards for products and require labeling of the noise emission characteristics of new products.

In New York State, Chapter 709 of the Laws of 1971 added noise to the list of air contaminants. With this authority, the Department has established a Bureau of Noise Control which is fostering programs to control environmental noise pollution.

Aircraft are a major contributor to environmental noise, particularly around jet airports. Unfortunately the Federal government has preempted much of the State's power to regulate aircraft noise. However, the Department is seeking ways to provide relief within the powers not preempted.

In 1965 New York became the first state to specify a maximum allowable

(Continued on page 11)



From the digital collections of the New York State Library.

How to Report a Polluter

by Malcolm A. Coutant

Most of the less technical violations of the environment protection laws occur in places where the Department of Environmental Conservation's routine surveillance may not discover them. In such instances law enforcement is almost entirely dependent on observation and complaints by individual citizens.

It is obvious, therefore, that total protection of the environment depends on public concern and action. For successful prosecution, however, more is required than just concern and complaints.

The proof of many pollution cases disappears very quickly. Smoke disperses into the air, water dilutes in a stream and the observations of the person discovering the violation are most important and may, in fact, be the only direct proof available. Due to the limited number of Environmental Conservation Officers and State Pollution Inspectors and the infinite numbers of potential polluters, every citizen must, if our environment is to be protected, aid the Department in its efforts by providing additional eyes, ears and noses.

Having once become aware of a violation, a person should remember what he saw, heard or smelled and be able to put into words his observations. This is no easy task, even for experts. Colored photographs may be of some value but even when one is fortunate enough to have a camera with him, the chances are that the photographs will not sufficiently describe the pollution problem.

In fact, some types of pollution — for instance — noise or carbon monoxide cannot be photographed.

The best evidence is testimony by a witness who directly observed a violation and who can intelligently recall and relate what he observed.

This recollection often must be made as a witness at an administrative proceeding. To be a witness one must be competent — that is, physically and mentally able to have made the observations.

Also, a witness must be credible. The quality of credibility can be severely reduced if the witness is prejudiced or has a financial interest in the results of the hearing. Perhaps one of the greatest problems with a "citizen witness" is his emotional involvement in a case, especially where the witness has discovered the violation.

As most witnesses soon realize, successful prosecution of polluters may depend almost entirely upon the willingness and ability of an average citizen to testify under oath at an administrative hearing. The failure of the public to accept this responsibility has often resulted in failure to protect the environment.

Several steps can be taken by a member of the public who discovers a violation which will help him be a better witness, should the necessity arise.

First, as soon as possible after the violation is discovered, the potential witness should write down what he observed, where the observations were made and when the observations were made. In short just the facts. If observations are made on several occasions, information should be recorded each time observations are made. This information should be forwarded to the Department of Environmental Conservation when the complaint is made. During regular working hours, the full-time health department in your area or the regional office of the Department of Environmental Conservation in your area should be contacted with any complaints. In emergency situations, the local Environmental Conservation Officer, whose number is listed in the telephone directory, should be contacted. These telephone numbers should be added to those in your personal telephone book where they are available for immediate use, as time is often most important in investigating a complaint.

If individual citizens take the job of protecting the environment seriously and follow the above procedure in making a complaint, the attack on polluters will be much more efficient and successful.

Pollution in Your Ear

(Continued from page 1)

sound level for motor vehicles when in operation. The limit is 88 dB(A) at 50 feet when the vehicle speed is less than 35 miles per hour. As experience was gained with this law, several improvements to it appeared desirable. The Department has been measuring the noise from motor vehicles on New York State roads in order to support recommended changes. To date over two thousand individual measurements have been taken.

Another general category of noise is that from stationary sources. A stationary source is a fixed geographical area, upon which one or more individual noise sources operate. For example, a factory site or a construction site. The Department has held hearings throughout the State on proposed regulations to control this type of source. Based on the findings, it is expected that regulations will go into effect in the not too distant future.

Can we control noise? The answer is yes, but the job will require more than a single focus solution.

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Oswego Volunteers Create Search and Rescue Team

by Ralph Larkin

A living memorial to a small boy

The tragic disappearance of eight-year-old Doug Legg in the deep Adirondacks near Newcomb in July 1971 set in motion a living memorial — the Search and Rescue teams which have come into being since that time. Next time a youngster drops out of sight as Doug Legg did, upstate New York will be ready.

In the October-November issue of *The Conservationist*, Art Flick told part of this story — the story of Blue Fox, Red Eagle, and Grey Hawk. These are the three volunteer teams of Forest Rangers organized by the Department of Environmental Conservation in late 1971, to meet the need for trained professionals in the search and rescue business.

Still to be told is the other half of the story — that of the private volunteer teams which have sprung into being since the search for Douglas Legg ended. They stand ready on short notice to beef up the thin ranks of the DEC rangers in a type of operation which calls for knowledge of the woods, training in S & R techniques, stamina, and numbers.

The volunteer movement really got its start in August 1971 when half a dozen woodsmen of the Fulton area got together to talk over the possibility of organizing a search and rescue team. Several of the men had been up to Newcomb to help in the Legg search and had been upset and unhappy at the vast confusion of untrained volunteers.

A news story in the local papers, inviting anybody interested in forming a search and rescue team to get in touch with Bob Bartholomew, resulted in Oswego County Pioneer Land Search & Rescue Team coming into being.

Virtually all of the group were woodsmen. A few were looking for the "glamour" which they associated with a search and rescue mission. The first search began to separate the men from the boys. They found that this was a hard, dogged business of ploughing straight through brush and swamp, in rain and snow, with too often the frustration of failure.

A hard core stayed with it. New men came in. Total team strength has held around 30-40 actives during the first 18 months.

Bart and his Board started the team out with a rigorous training program. Three aspects were paramount: field search techniques; first aid; map-and-compass. Thirty men studied 13 weeks to earn the Red Cross rating of Advanced First Aider. A dozen more went on to qualify as Medical Emergency Technicians.

Periodical search exercises were held in neighboring woods and swamplands, zeroing in on "lost" and "injured" persons, under direction of Field Officer Huey Parrow, whose wife Barbara took her place in the search lines with the rugged woodsmen. Original plans called for development of a series of specialty search squads, ranging all the way from swamp rescue to a para-rescue unit. The principal specialty unit which has emerged to date is the rappelling team, trained in the rescue of victims of falls over cliffs.

Liaison was established early with the Rome Reconnaissance Association, another volunteer group composed of technicians under contract with the Rome Air Development Center for perfection of remote sensor, infra-red aerial photography techniques which involves aerial mapping and infra-red spotting of warm bodies on the ground, for S & R.

In the first year and a half of its existence, the Pioneers have been alerted 30 times, and have actually been called out on 15 searches, working either with State police or the DEC forest rangers — notably in latter months with the Blue Fox team. Their searches have ranged from hunts for lost farmers to the shoreline search for a young couple adrift in a rubber raft on Lake Ontario.

Recently the Pioneers have organized a separate branch of the team in the Pulaski area under Assistant Coordinator Chuck Blount, and a Junior team is in process of formation.

The Pioneers have worked closely with other S & R teams which have subsequently come into being — notably with the A.D.K.'s Onondaga Chapter team, and the Tompkins County team. Now this cooperation is jelling in first moves toward formation of a federation of such teams to provide mutual support, training, and exchange of experience. Formation of other teams on a county-by-county basis is hoped for in the future.

Doug Legg has never been found; but he has not been forgotten.

Nations Agree to Check Ocean Pollution

Representatives of 91 countries, including all of the world's major maritime nations, have agreed on a global convention to end the dumping of poisonous waste matter at sea.

Under the convention, the dumping of high-level radioactive waste, biological and chemical warfare agents, crude oil, some pesticides, and durable plastics is prohibited. Other, less harmful substances and materials, such as arsenic, lead, copper, scrap metal and fluorides can be discharged only with special permits.

Specifically, the countries pledge themselves "to take all practical steps to prevent the pollution of the sea by the dumping of waste and other matter that is liable to create hazards to human health, to harm living resources and marine life, to damage amenities or to interfere with other legitimate uses of the sea."

The enforcement of the anti-dumping measures and sanctions is left to the individual countries. There is no attempt in the convention to coordinate penalties.

The convention calls for the creation of a secretariat, to coordinate and disseminate the latest technical and scientific data on oceanic pollution and dumping. One of its duties will be to advise countries on how to get rid of waste matter that cannot be dumped at sea. The convention did not advise on methods of safe disposal of poisonous matter on land.

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EQ News Briefs

The first discovery of evidence that dinosaurs once lived in New York State was announced recently by Donald W. Fisher, paleontologist of the State Geological Survey. Footprints of at least two small meat-eating dinosaurs were unearthed near Nyack in Rockland County late in 1972, Dr. Fisher said. Although dinosaur fossils and footprints have been found in surrounding states, New York has been, until now, without proof that the reptiles ever lived here.

* * *

Approval of an additional nine agricultural districts was announced March 15 by Commissioner Henry L. Diamond of Environmental Conservation. The 50,000 acres in these districts brings to 300,000 the farmland now under special protection of legislation signed in 1971 by Governor Rockefeller. Commissioner Diamond, who administers the system, said the law protects agricultural land from the increasing pressure for non-agricultural development and enhances it as a viable segment of the State's economy and an environmental resource of great importance. The new agricultural districts are in Erie, Essex, Steuben, Oneida and Washington counties.

* * *

A leading expert in land use policy told a Statewide conference in Syracuse that "a quiet revolution" in land use control is now taking place in the United States. David L. Calles, coauthor of a report on land use policies prepared for the President's Council on Environmental Quality, said states are taking back the land use controls formerly delegated to municipal governmental units through zoning enabling acts in ever increasing numbers. There is a change in the concept of land from a commodity to be traded for economic gain to a resource which must be preserved for public health and public welfare. He cited the states of Hawaii, Florida, and Vermont, the San Francisco Bay Conservation and Development Commission, the Metropolitan Council of the Twin Cities in Minnesota as examples of state and regional land use controls now in use. The Adirondack Park Agency in New York State was established for a similar purpose, he said.

* * *

The United States Supreme Court has agreed to rule on whether the Interstate Commerce Commission must consider potential environmental impact when establishing railroad freight rates. The suit was first filed against the ICC last summer by a group of George Washington University students calling themselves Students Challenging Regulatory Agency Procedures or SCRAP. A federal district court ruled that the ICC violated the National Environmental Policy Act in raising freight rates on industrial scrap. Railroads have long imposed higher rates on waste paper, scrap iron, oil refinery wastes and similar recyclable materials compared with rates on virgin raw materials. The ICC appealed the ruling which is now before the higher court.

* * *

In a magazine article in October, William D. Ruckelshaus, director of the Environmental Protection Agency, wrote: "The principal obstacles to resource recovery are economic and institutional, not technological. We are going to have to stop subsidizing virgin materials use and take steps to assure that secondary materials can compete on an equal footing."

* * *

The New York State Department of Environmental Conservation will cooperate with the General Electric Co. in a two-year research project to evaluate new methods of testing for industrial air pollution. The project will be conducted at G.E.'s main power plant in Schenectady. It is designed to evaluate the performance of certain types of air monitoring devices which have been commercially developed over the past seven years.

* * *

At least 665,000 square miles of the Atlantic Ocean from Cape Cod to the Caribbean are heavily polluted by floating oil, tar and plastic debris. Surveys conducted last summer by three ships from the National Oceanic and Atmospheric Administration reported that the extent of the contamination was far wider than previously suspected.

* * *

Paul Smith's College, located on lower St. Regis Lake in the Adirondack State Park, is offering a new two-year ecology and environmental technology program. Students in the new program will develop skills needed for pollution control and resource conservation. Environmental field training is available in the summer to provide experience with water systems, wastewater systems, air pollution controls, and other selected environmental control operations.

* * *

Early reports from Oregon indicate that a new law requiring deposits on all carbonated soft drink and beer containers may be helping to solve litter and solid waste problems.

The law, which went into effect October 1, is the first of its kind in the nation and requires a five cent deposit on non-refillable beverage containers and a two cent deposit on containers that can be reused by more than one manufacturer. The law also bans easy open tab cans.

* * *

Another valuable tract of land in the Adirondack forest preserve has been donated to the State, Governor Rockefeller has announced. The 146-acre property is in two parcels in the Town of North Elba, Essex County, and was given to the State by the Simon and Annie Davis Foundation of New York City in memory of its late president Abraham M. Davis. The property lies on both sides of Route 86 about midway between Lake Placid and Ray Brook. It is bounded on three sides by forest preserve lands and is valued at $124,000.

* * *

The federal Environmental Protection Agency has issued a regulation requiring that at least one grade of lead-free gasoline is available to motorists by mid-1974, but has delayed for 60 days the promulgation of another regulation reducing the lead content of all gasolines to about half the current level by 1978.

* * *

Nathaniel Reed, Assistant Secretary of the Interior for Fish and Wildlife and Parks, has called for a moratorium on the taking of any eastern timber wolves in the states where the animals still exist. The animals are on the list of endangered species of the United States.

"There are only 500-1,000 eastern timber wolves left in the United States," said Reed. "The best course of action would be a moratorium on the taking of all wolves, with the possible exception of those preying on livestock, until a nationwide recovery plan for the wolf is completed." The recovery plan is being prepared by the Fish and Wildlife Service's Office of Endangered Species.

* * *

The Supreme Court has agreed to review lower court rulings on the "significant deterioration" clause of the federal Clean Air Act of 1970. In a suit brought by the Sierra Club against the Environmental Protection Agency, the courts ruled that EPA must require the states to develop air quality implementation plans which will protect air quality levels.

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Sketchbook notes of changing moods

One spring morning a pair of American eagles sailed overhead, often diving by each other, playing a game of aerial tag. Sometimes one would roll over and grasp at the feet of the other. Eventually they settled into a tree where there would soon be a nest.

In the deep shadows of the thick brush a flick of color flashed like a tiny flame. A male redstart was approaching his potential mate showing off his red-orange and black wings and tail.

While sketching my local cardinals one spring day, I saw the female suddenly pause, in what later turned

out to be the nest tree and flutter her wings like a young bird. Almost at once the male approached and fed her. Shortly afterwards she began building the nest.

On the marsh a male ruddy duck put on quite a show! As he approached the females he raised his tail over his back and puffed out his red breast feathers on which he drummed with his blue beak. (His puffed look was due to an air sac in the neck.) At other times he rose with his head back and his tail under water while paddling at furious speed. And all this was accompanied with much commotion and varied calls.

During courtship, male mallards seem very nervous and agitated. As they swim near the females they pseudo-preen their wings causing the colored secondaries to flash in the light. (It makes me think of a nervous young man trying to straighten a tie that needs no adjustments!)

Red wings and grackles use the same display in starting courtship as they do for challenging rivals. Females, showing interest and not belligerence, are not attacked. Trespassing males are driven off.

W. TRIMM

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