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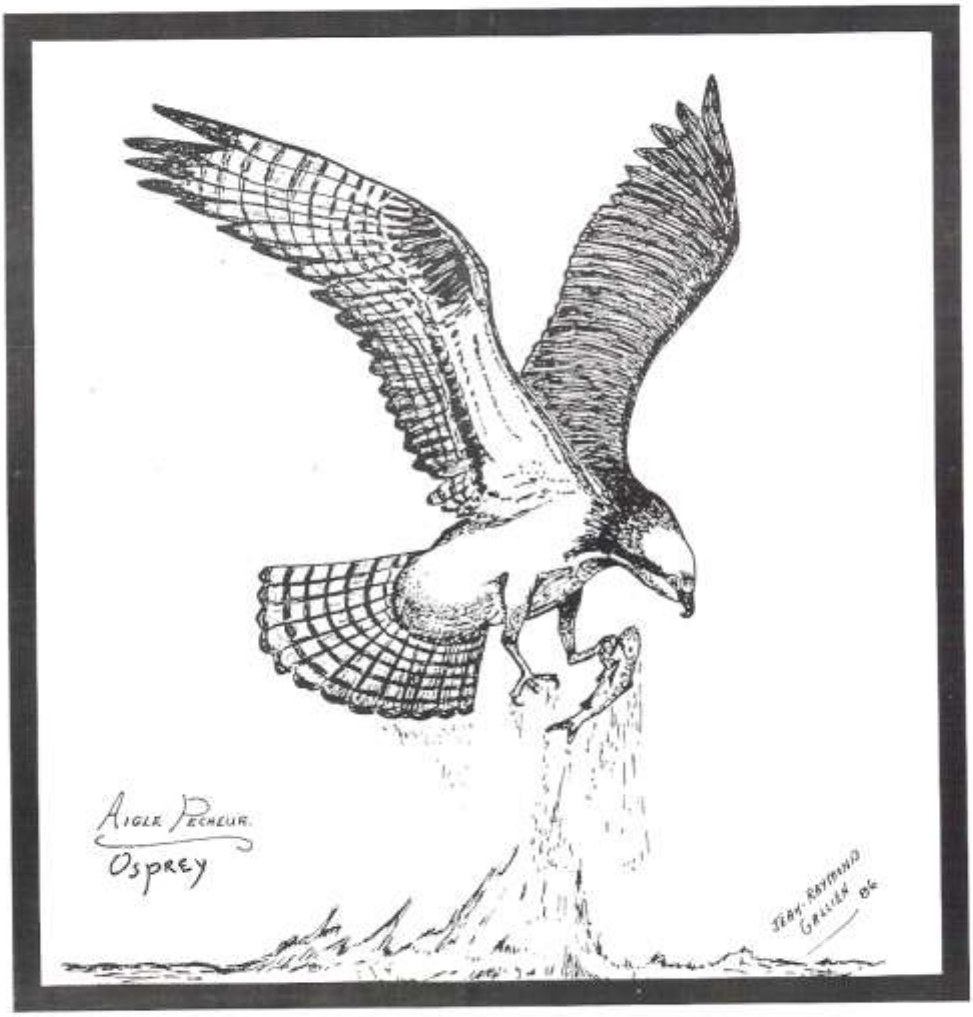

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New Brunswick Federation of Naturalists — **La Fédération des naturalistes du Nouveau-Brunswick**
277 Douglas Avenue, Saint John, N.B. E2K 1E5 Canada — 277, avenue Douglas, Saint John, N.-B. E2K 1E5 Canada

The federation is a non-profit organization formed in 1972 to facilitate communication among naturalists and nature-oriented clubs, to encourage an understanding of nature and the environment, and to focus concern for the natural heritage of New Brunswick.

La fédération est une organisation sans buts lucratifs formée en 1972 pour faciliter la communication entre les naturalistes et entre les divers clubs axés sur l'étude de la nature, pour encourager une meilleure compréhension de l'environnement naturel, et pour éveiller le souci pour le patrimoine naturel du Nouveau-Brunswick.

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Fredericton Nature Club, Box 772, Station A, Fredericton, N.B. E3B 5B4; 459-8685 or 454-2117; meets N.B. Craft School, 7:30 pm, 1st Wed., Sept-May; monthly *Newsletter*.

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Moncton Naturalists' Club, P.O. Box 4327, Dieppe, NB E1A 6E9; 857-4271 or 384-5212; meets Moncton Museum, 7 pm, 2nd Wed., Sept.-May; monthly newsletter.

Nepisiquit Naturalists' Club, P.O. Box 385, Bathurst, N.B. E2A 3Z3

Saint John Naturalists' Club, 277 Douglas Avenue, Saint John, N.B. E2K 1E5; meets N.B. Museum, 2nd Wed., Sept.-May, elsewhere in June; monthly *Bulletin*.

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Schoodic Chapter, Maine Audubon Society, c/o Sid Bahrt, Pembroke, ME 04666; meets Sunrise Apts., Calais, 7 pm, 3rd Tues., except Dec; bimonthly *Schoodic*.

Sunbury Shores Arts and Nature Centre, Inc., Box 100, St. Andrews, N.B. E0G 2X0; 529-3386; workshops, exhibits, semi-annual *Sunbury Notes*.

N.B. Naturalist ISSN 0047-9551 **Le Naturaliste du N.-B.**

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N.B. Naturalist carries articles and reports pertaining to the natural history of New Brunswick. Articles are invited in either English or French, and will be printed in the language in which they are received. The opinions expressed are those of the authors. Contributions should be sent to the respective editors (see "Editorial Committee" above). Advertising rates available on request.

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On peut lire dans *Le Naturaliste du N.-B.* des rapports touchant l'histoire naturelle du Nouveau-Brunswick. Les articles seront acceptés dans français ou anglais pour être reproduites dans la langue d'origine seulement. Les opinions exprimées sont celles de leurs auteurs. Prière d'envoyer vos articles aux directeurs (voir «Comité de rédaction» au-dessus). Tarifs publicitaires disponibles sur demande.

A Sustainable Development Strategy for New Brunswick

What may become New Brunswick's most significant conservation program of the decade began in 1988 when Premier Frank McKenna created the Premier's Round Table on Environment and Economy. The 16-person Round Table of cabinet ministers, prominent businessmen, and representatives of universities, labour, economics and environmental groups is chaired by the Hon. Al Lacey, Minster of Commerce and Technology.

They subsequently established a Round Table Task Force on Sustainable Development, under the chairmanship of Dr. Louis LaPierre of the Université de Moncton, and charged it with developing a provincial sustainable development strategy (sometimes referred to as the provincial conservation strategy). The process follows from the recommendations of *Our Common Future*, the 1987 report of the World Commission on Environment and Development.

Twelve public meetings, held in late 1989 and early 1990, to gather ideas and concerns for incorporation in a draft strategy received more than 225 briefs and oral presentations. As Mr. Lacey said, "It was abundantly clear that... New Brunswickers are deeply concerned about the present and future quality life." A summary (*Sustainable Development for New Brunswick: Public Meeting Summary*, Fall/winter 89-90) is available from the Premier's Round Table on Environment and Economy, P.O. Box 6000, Fredericton E3B 5H1.

Among the many participants were several Federation members and clubs: Ron Gauthier (Nepisiguit Naturalists' Club), Lise Caron (Université de Moncton, Edmundston), Patrice Émond (Association pour la protection de l'environnement de Kedgwick), Gilbert Lavoie (Club des Ornithologues de Madawaska), John Henderson (Nature Trust of N.B.), Mary Majka, Tom Greathouse (Conservation Council of N.B.), Arthur-William Landry (Club des naturalistes de la Péninsule acadienne), Barbara Clayden, Dr. Ian Cameron, Stephen Clayden (N.B. Museum), Gart Bishop (Kennebecasis Naturalists' Society), and Bob Cotsworth (Moncton Naturalists' Club). The Federation's brief, presented by mail, follows for your information.

The second phase in the formulation of a sustainable development strategy was the establishment of 13 sectoral groups (agriculture, commerce/service/manufacturing, energy, environmental education/information, fisheries and aquaculture, forestry, mining, natural areas, recreation and tourism, rural and urban development, transportation, water/air/land, wildlife)—which met this year to examine issues in their particular sectors and to draft a series of recommendations for achieving the common goal of sustainability. Peter Pearce served as an official representative of the Federation on the wildlife sectoral group, but at least seven other members also served on sectoral committees: Hal Hinds was chairman for natural areas and Richard DeBow for energy; Lise Caron and David Christie served on the natural areas committee, and Harold Hatheway, Mary Majka, and Rob Rainer on wildlife.

A draft strategy is scheduled to be released by the end of the year and a second round of public meetings to receive feedback is expected to begin in March 1991. The final strategy should be presented to Premier McKenna in January 1992.

New Brunswick Federation of Naturalists Presentation to the Round Table Task Force on Sustainable Development

We are very pleased that the New Brunswick government is participating in the international movement to develop blueprints for sustainable development and that the task force is so open to input from the public. Thank you for the opportunity to share our views with you.

Our federation represents a wide range of New Brunswickers united by a keen interest in nature. We are very conscious of the effects of man's activities on our natural resources—both physical and biological.

The fact that many New Brunswickers enjoy a relatively unspoiled environment seems more a matter of good fortune than of good planning, simply because our environment has been spared a lot of the stress of rapid population growth and economic development that have affected some other parts of Canada. Even so, we have serious local [as well as global] problems—pollution of many of our rivers and coastal waters, pesticide contamination of groundwater, air pollution in some of our industrial areas (particularly Saint John), soil erosion, and destruction of some of our most productive lands by residential, industrial and commercial development.

We tend to regard the current planning process as a step in the right direction that will buy time while public and political support develops to tackle the underlying causes—continually growing populations and consumption. Our quality of life depends on a healthy economy, and economic health today seems dependent on continuing growth. A constantly expanding population and economy based on a finite resource base, however, will inevitably lead to more and more resource use conflicts and environmental problems and consequently a reduced quality of life. Let us hope we will have the foresight to resolve that looming problem and be able to achieve a stable society and reasonable quality of life in a resilient healthy environment, rather than end up living in a degraded overtaxed environment.

Our members, as many New Brunswickers, are vitally concerned about the quality of the air we breathe and the water we drink, about the elimination of unnecessary waste of resources and the encouragement of recycling. Our presentation touches only briefly on those matters, however, but stresses the importance of maintaining natural systems.

We believe there should be more non-government involvement in natural resource planning and would like to congratulate the government on the steps already taken to set up advisory committees. The government should encourage private initiatives in the area of natural resource conservation and preservation.

Wildlife

We would like to stress our belief that the wild plants and animals of New Brunswick have as much right to live in a healthy environment as we do, and that our activities should be conducted so as to maintain the diversity and vigour of their populations. Beyond that principle it must be recognized that man is part of nature and that our own life and economy depends on the functioning of healthy natural systems. Some of those plants and animals have a direct value to us as food or material, many others contribute indirectly to our economy through important roles in the productivity of ecosystems from which we directly benefit—for example, the role of salt marsh plants and animals in nourishing our inshore waters—and all have the biological or genetic potential to contribute traits or products that may be of value in the future. Each one lost diminishes our world in various ways.

We would like to emphasize the importance of all wildlife as opposed to just those species which are of obvious economic value. We would like to see consideration given in natural resource management plans to a greater range of the living things in our ecosystems—to lilies, salamanders, warblers and bats, as well as trees, salmon, ducks and deer. There is an outstanding need for a vigorous non-game wildlife program by the Department of Natural Resources and Energy. Not only is all wildlife ecologically important but the growing non-consumptive use of wildlife by New Brunswickers shows that it is also of direct concern to the public.

Since wildlife is largely a product of the land and much of New Brunswick is forested, there needs to be much government attention to the impact of forest management practices on wildlife, game and non-game, and their habitats. This should not only address the use of pest control products but also clearcutting, planting and other silvicultural practices.

Land Use

Our communities and transportation corridors have very naturally developed along rivers and the sea coast in places which are particularly productive for plant growth, fish and wildlife. Now, however, residential, commercial and industrial growth are destroying some of the best capability lands in our province. Land use planning should give more recognition to the value of lands of high natural productivity, and programs developed that would encourage urban and industrial development to take place on less productive lands rather than on the best sites for agriculture, forestry and wildlife.

There seems to be a planning and regulatory vacuum regarding the use of our limited coastal zone. In part that is because of the mixture of federal and provincial departments responsible for it.

A growing number of people, quite naturally, are looking to our seashore areas for recreational opportunities and to establish cottages. A number of large scale developments are also being proposed. A glance at developments south of the border suggests what may happen here in New Brunswick in the near future. Now is the time to take action to establish a comprehensive land-use planning strategy for the entire coastal zone, so that development can be regulated to protect critical natural areas, to maintain a significant amount of public use areas, and to minimize pollution and degradation of coastal waters.

There is increasingly heavy pressure on the province's sandy beaches. To a large degree this is a result of the use of motorized off-road vehicles, which are allowing larger numbers of people to easily reach areas farther from traditional access points and are having heavy impacts on the beach. This is causing dune erosion and affecting a variety of sea-beach creatures, most notably an endangered species, the Piping Plover, which nests on these beaches. Despite existing regulations, there has been little progress in restricting vehicle travel on beaches. We suggest combination of enforcement with an educational program to provide more effective protection of beach and sand dune systems.

We are also concerned about the destruction and degradation of salt marshes along our coast. Many of the larger ones have been drained and dyked for agricultural use. The remaining marshes are of vital importance to wildlife and have an important role in contributing to the productivity of our marine fisheries, as well as adding welcome variety to the landscape for New Brunswickers and visitors alike. The filling in of these marshes for residential and commercial development and the treatment of sewage wastes should be forbidden or at least severely restricted.

Natural Areas

We note that the Brundtland Commission report recommended a minimum target of 12% of a jurisdiction's area reserved as wild lands. In New Brunswick, two national parks, about 60 provincial parks (of which possibly a third provide some realistic protection for natural habitats), several national or provincial wildlife areas, and a few ecological reserves represent less than 5% of the area of the province.

There should be more official recognition of the value of significant natural areas. The government's ecological reserves program should be resuscitated, the heritage rivers program accelerated, and natural areas and the concept of wilderness and biophysical regions incorporated in provincial parks planning.

We are disappointed in the lack of commitment the Provincial Government has demonstrated to its ecological reserve program. A substantial system of reserves—which serve as biological benchmarks and study areas—is vital for maintaining the variety of natural life forms in New Brunswick. The designation of candidate reserve areas on Crown Land resource use maps might be reassuring were it not for the fact that the province recently leased some of its land to a gypsum company, without any apparent consideration that it

contained one of the sites (Wilson Brook in Albert County) that was being most seriously considered for protection as a reserve. When the Blue Mountain ecological reserve was threatened by a logging contractor a couple of years ago, the threat was stopped through the initial action of a private citizen not department staff.

Recognizing that the Provincial Government does not have the financial resources to protect a full range of ecosystems, many of which are represented only on private land, we would like to see a plan developed that would encourage private landowners to protect their special natural areas from development. Some system of property tax reduction for land registered and approved as an important natural area is a possible means of doing that. A program to protect natural areas through easements from landowners (such as being undertaken by The Ontario Heritage Foundation) could protect land less expensively than acquisition. We would also like to see meaningful encouragement of the efforts of the young Nature Trust of New Brunswick to protect significant natural areas on private land.

Forestry

Forestry is the most important sector of our economy and affects a larger portion of our province than any other. The trend today is to more intensive management of forest lands for the production of a very few species, mostly rather short rotations of conifers. That concerns us for several reasons. Firstly, although plantations may harbour an abundance of certain species of forest animals and plants, current practices tend to produce a simpler forest that does not provide suitable habitats for all of our forest fauna and flora, some of which require more mature conditions and longer periods of stability for survival (e.g. several orchids, Pileated Woodpecker, Pine Marten). Forestry planning should integrate the culture of a wider variety of crop species and of times to harvest, which in turn can allow for more crop rotation and a more balanced demand on forest soils.

The current scale of forestry operations also seems to be having an ever greater impact on water flow and fish habitat in our rivers.

We encourage more reliance on Bt and other biological methods of control as alternatives to chemical insecticides and herbicides.

Fisheries

No species of fish should be harvested without quota (as eels are, for instance). There should be an allowable catch determined for each fish species being harvested and determinations of catch should include consideration of incidental catches of other species. Dragging as a method of fishing requires closer scrutiny and control because of the damage it causes to bottom habitats.

Energy

As Canadians we should be embarrassed by the amount of resources we consume. (What would the impact on the earth be if China and India consumed as much and produced as much waste per capita as we do?) Ignoring the great amount of consumer goods we are privileged to have, just living in a country that is cold much of the year we consume great amounts of energy to keep warm. None of our sources of energy is without considerable environmental cost. Energy conservation measures should be more encouraged in order to reduce the amount of energy required, and the best available control measures should be undertaken to reduce the environmental impact of our energy production and consumption systems—from automobiles and home heating to electrical generation plants and factories.

Air

Acid precipitation is a serious threat to the health and productivity of aquatic and terrestrial ecosystems. Although the source of a lot of the acid precipitation that affects us is beyond our borders, we must recognize that local emissions are part of our own problem and a problem for others. We cannot ask others to improve if we are not reducing emissions here too—on both new and existing developments.

Water

Because of their dependence on abundant supplies of water and on a variety of modes of transport, many major industries are located at river mouths where they pollute our estuaries and imperil the populations of many wildlife species, including some we harvest for human consumption. An objective of sustainable development should be to bring those estuaries back to a healthy condition.

Public Information and Education

In the very important field of public information and education there needs to be available far more material on the natural resources of New Brunswick, and their conservation and protection. The amount of material put out by the province, especially for the younger reader, is pathetically small. Audio-visual materials of all kinds are needed. Natural Resources, Environment, and Tourism should all cooperate on this. The educational curriculum needs to incorporate more consideration of ecology and environment. Increased public understanding of ecological relationships and their effects on our environment and economy are a necessary part of sustainable development.

Summary

We believe that a healthy and viable environment for New Brunswickers is a varied one, composed of a mosaic of landscapes and biological communities, including ones that may not have any obvious direct economic benefit to man. The challenge today is to find the means of using our natural resources in a way that will adequately support our citizens, that will be sustainable for centuries, and that will not rob each successive generation of more and more of the natural heritage we still have left.

L'Épervier brun et le Geai bleu

Rose-Aline Chiasson

Le 7 janvier 1990, vers 16:30 heure, je reçois un appel de Mme Haché qui a des mangeoires d'oiseaux. Elle m'annonce qu'un oiseau de proie a attrapé un Geai bleu et est à le manger dans sa cour de maison. Après avoir relaté ma conversation à Hilaire, on décide d'aller voir.

Dix minutes plus tard, nous étions à destination. Un Épervier brun était à l'arrière de la maison, affairé à déguster son Geai bleu. Nous nous sommes approchés à environ 10 mètres, il nous a regardé, mais ne s'est pas envolé. Nous sommes alors entrés à la maison pour l'observer à notre aise. Nous avons admiré ses taches blanches sur le dos et quelques fois, il ouvrait ses ailes comme pour se maintenir en équilibre car la neige était glacée.

À la faveur de la brunante, l'Épervier décide de partir et s'envole avec sa proie dans un Peuplier de la cour, quand, surprise, le Geai est pris entre les branches de l'arbre et notre Épervier est suspendu la tête en bas. Que de questions sont passées dans notre tête pendant les secondes où nous l'avons observé! Soudain, l'Épervier donne un gros coup d'ailes, le Geai se détache de l'arbre et l'Épervier est sur le dos avec le Geai près de lui et semble sans vie. N'y tenant plus, Hilaire décide d'aller voir, s'habille et sort. À sa vue, l'Épervier fait un effort, se redresse, s'en va dans l'arbre voisin, toujours avec le Geai bleu. Voilà encore notre Épervier suspendu la tête en bas. Hilaire le saisit sans difficulté et l'apporte à la maison.

Dehors, la nuit tombait, mais à la lumière, nous avons découvert pourquoi cet Épervier avait un curieux comportement. Avant de mourir, le Geai bleu avait serré sa patte autour de la patte de l'Épervier et ce dernier devait voler avec le Geai fixé à sa patte. Dans la maison, à force de se débattre, il a fini par se libérer.

Après avoir été photographié par la maîtresse de maison, on le mit dans une boîte et nous l'avons apporté chez-nous. Quelques amis naturalistes sont venus l'admirer et le photographier, mais notre oiseau n'a pas su attirer autant d'admirateur que la Petite Nyctale. Il n'avait sans doute pas un regard aussi sympathique, c'est certe dû au rôle qu'il joue dans la nature. Le lendemain, il a fini de manger le Geai bleu et a ensuite mangé du steak haché.

Lors de sa captivité, les taches blanches de son dos étaient invisibles; il fuyait les lumières fortes et était moins farouche à faible lumière. C'était un oiseau immature qui pesait 171 grammes et mesurait 32 centimètres.

Mardi avant-midi, Hilaire l'a attrapé et a ouvert la porte. L'oiseau s'est retourné, l'a regardé, semblait difficilement croire à sa liberté et s'est envolé en donnant quelques coups d'ailes suivis d'un vol plané.

The Status of the Common Loon in New Brunswick

Rudy Stocek

The seasonal occurrence, abundance, reproductive performance of and impacts on the Common Loon in New Brunswick were studied during 1987-88. Loons were nesting in virtually all the areas where they had been recorded in the past, most in the southwest, few, if any, in the northeast.

About 40 to 50% of the named lakes were used for breeding, ranging from 2% utilization of those less than 20 ha in size to 100% for lakes 800 ha and over. There was no significant difference in production of young between on-shore and off-shore nest sites. 292 nestings were recorded during 1986-88. Mean clutch size was 1.8 eggs (42 nests), 74% of the nests (53) were successful and 0.94 chicks were produced per breeding pair (35 nests). 2-egg clutches were most successful.

Entanglement in commercial fishing gear in both fresh and salt water accounted for about two-thirds of the recorded loon mortality. Impacts on loons included lake water level fluctuations and human disturbance (fishermen and boaters), both only significant locally. Loons were successfully breeding on some extremely acid-sensitive lakes.

A conservative estimate in 1988 of the provincial breeding population, which appears to be increasing, was 2,934 adults and 617 young. An estimated 300-400 loons, mostly subadults, summer along the east and south coasts. Wintering loon numbers have gradually increased along the south coast since 1969. (Abstract of a paper presented at a conference on loons.)

In Memoriam

The Saint John area lost one of its most beloved naturalists with the passing of Tom Page in January. Federation members from elsewhere may have met him at annual meetings. A stalwart member and former president of the Saint John Naturalists' Club, Tom's interests were wide-ranging. He was an enthusiastic participant in club field trips and the Christmas Bird Count and made excellent carvings of birds. He will be perhaps best remembered by many for the ladyslipper walks he led annually to observe Common and Yellow Ladyslippers in Rockwood Park. Appropriately, a trail in Rockwood Park has been named Tom Page Way.

Flying Free

Pauline Thibodeau

It was a day in May when the air is filled with the fresh green smells of spring. The warm rays of the sun filtered through the trees and shone on the two boys and their little dog as they explored the woods.

They had followed the path through the field, across the brook and up the hill to the forest. As they made their way through the trees they noticed Scamp sniffing at something he had found on the ground under a pine tree; it looked like a little ball of fluff. The curious pair went over to see what their dog had discovered and to their surprise the "ball of fluff" turned out to be a baby owl.

They heard a commotion of squawking overhead and looked up to see a large owl flying back and forth over a nest high in the pine tree. She was very upset and swooped down at them. The baby had apparently fallen out of its nest. They decided not to touch the little owl .

Later, on their way home, they stopped by the same tree; the baby owl was still lying on the ground but the mother was gone. They thought he would surely die if they left him there, so decided to put him back in the nest.

They guessed the tree was about sixty feet tall and the nest about four feet wide. They made several attempts to climb the tree and carry the owl up to its nest but couldn't get any closer than ten or fifteen feet from the nest, but they did notice another baby owl in the nest. They were then really worried about the little owl on the ground and didn't think he would survive if they left him there, so decided to take him home with them.

They made a little nest for him in a cardboard box in the porch. They learned that owls like to eat live rodents, fish, snakes, frogs and large insects. At first they force-fed him a mixture of dog food, chopped fish and meal, and soon Baby Owl was thriving and growing. When it became necessary to provide a larger living space the boys built him a cage which was attached to the top of a four-foot-high post in the backyard. They were busy every day gathering food for their owl. After school they went hunting for mice, frogs and fish,.

By midsummer, Owl's appetite was increasing and the supply of brook trout was dwindling, so they started going to the river with a pail to catch live suckers, about twenty or thirty at a time. They were allowed to keep these in a neighbour's abandoned well. Thus, they would not run out of food for Owl.

After about eight weeks the "ball of fluff with a beak" was showing off the feathers and distinctive markings of a Great Horned Owl. His keepers had to start wearing protective mitts and sleeves when they handled him. Owl enjoyed being taken out of his cage. He would sit on top of it and flex his wings or just stare with his enormous golden eyes. He was then capable of tearing his own food apart.

About this time Mother Owl was heard visiting her baby at night. The boys started to put treats out for her and she ate everything they left.

Later in July the boys thought it was time Baby Owl learned to fly. He was feathered out now and his wings were big and strong. To give him a higher start they climbed to the garage roof. Several times they held him up and started him off. He sailed a little farther each time.

At this time Baby Owl had a wingspan of about four or five feet and weighed at least five pounds. His greyish brown feathers were barred with black, except for a white throat bib. A V-line of eyebrows which gave him his fierce expression continued to each side of his head to form his ear tufts or "horns."

Mother Owl still made her nightly visits to eat her snacks and talk with her baby. Alas, one neighbour was afraid to go to her clothesline at night and another noticed a baby kitten was missing, so the boys' mother began nagging them to "get rid of that owl." They knew the time had come for him to fly away.

They continued to take Owl for his flying lessons. They carried him up to the garage roof, then the shed roof, and finally to the top of the big barn. Each time he would glide a hundred feet or more, but he hadn't learned to flap his wings.

One day in late summer they saw Mother Owl flying in circles over the brook and meadow. They carried Owl to the top of the barn and let him glide off but he crashed in the hayfield, even though Mother hovered over him squawking and fluttering. "Fly, Owl! Fly!" the boys urged him. Several times he was carried to the roof of the barn with the same result.

Finally he started to flap his wings and lifted himself up over the hay. The boys were yelling, "He's flying! He's flying!" As they watched, the two owls flew together over the meadow to the brook, then back to the barn. For about an hour, they flew, gliding and turning back and forth between the brook and the barn. Finally they soared high, circled, then headed towards the forest and disappeared over the tree tops.

As the boys climbed down from the barn roof they were unusually quiet. They had helped a little wild creature and shared a part of his life. He had trusted them and now he was free. Sure they felt sad but mostly they were proud and happy.

One day, later in the fall, they walked back to the big pine tree. They saw two owls sitting in the tree. That day they said goodbye to their Owl.

(This is a true story about an adventure of my two sons, Robert and Paul.)

From The Pages of the Journals

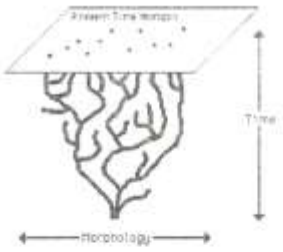
Five-Eyed *Opabinia* and the Contingency of Life

Christopher Maika

In this issue I depart ever so slightly from my regular format since the topic which concerns me comes, first and foremost, not from the pages of a journal but from those of a book. I trust that readers shall bear with me.

Wonderful Life: The Burgess Shale and the Nature of History, the newest book by Stephen Jay Gould (1989. W.W. Norton & Company, New York. 347 pp., illustrated. $27.95 cloth.) is a wonderful tale: entertaining, spell-binding, thought provoking, and even revolutionary. Gould, a biologist, geologist and historian of science at Harvard University, is a consummate exponent of science perhaps best known for his column *This View of Life* published in *Natural History* magazine. In this book he sets out to upset the applecart of evolution — and in some measure succeeds!

Harken back to your high-school biology classes: what's the central image which comes to mind when you think of evolution? Right — the evolutionary tree! And what does it look like? Hmm ... starts off narrow at the base and as time passes it branches and forks illustrating the paths of evolution and the current diversity of living creatures. This image has been the heart of evolution, and of systematics, phylogeny and classification, ever since Darwin. And this icon is more than a picture — it captures our understanding of exactly how evolution actually works — from the simple to the complex. From common ancestors, via the process of adaptive radiation, groups diversify. Simple forms grow gradually more complex sending off shoots which become either evolutionary dead ends or else success stories becoming, in turn, new loci for the radiating pathways of evolution.



This view is in keeping with our Darwinian understanding of the *process* of evolution. By the selection of random genetic variation and mutation small changes in form over long periods of time add up to significant differences. New species evolve; new groups are formed. Furthermore this view of life is supported by the fossil record. The conventional account of the origins of life runs like this.

The earth is about 4.5 billion years old. The earliest signs of life, unicellular *prokaryotic* cells such as bacteria and blue-green algae, first appeared in the distant Precambrian Era, 3.5—3.6 billion years ago. More complex single-celled *eukaryotic* cells (with nuclei, paired chromosomes, mitochondria, chloroplasts, etc.) came on the scene much later, some 1.4 billion years ago. Nothing further happened until about 570 million years ago when, at the dawn of the Cambrian period, there was a sudden explosion of multicellular life. Within the 40 million year blink of a geological eye all the modern phyla found today appeared from ancestral sources. Since then it's been evolution, diversification, survival of the fittest, extinction and adaptive radiation. The rest, as they say, is history. Or is it?

Just as astronomers are pushing back the frontiers of knowledge to within a few tenths of a second after the big bang, so paleontologists are extending their search for life into the ever more distant geological past. While at one time it was thought that no multi-cellular life existed before the Cambrian, now two separate faunas, called the Ediacarian and the Tommotian, are known. Paleontologists are still not clear what kinds of animals these faunas (named after specific localities but world-wide in distribution) represent but they indicate that more was happening in the Precambrian than we thought.

The most difficult problem in reconstructing the trajectory of life's arrow is the lack of so-called 'soft-bodied fossils.' When dinosaurs die they leave bones but many of the early creatures were things built like worms, jellyfish, sea-cucumbers — all creatures which tend not to fossilize well. In most sediments the only fossil remains from such creatures are a few refractory hard parts.

Conodonts, for example, known from microscopic tooth-like structures, were for over a century one of the greatest puzzles of paleontology. Found abundantly in Paleozoic sediments they were explained variously as jaws of segmented worms or Chaetognaths, radulae of mollusks, sexual organs of nematodes, arthropod spines, parts of primitive fishes and even plant remains! The real source of the teeth remained elusive until 1982 when impressions of the entire animals were found in some exceptionally well preserved sediments from southern Scotland. The conodonts turned out to be nothing at all like any of their proposed explanations but an utterly unique group of vanished creatures which have been placed in their own phylum, the Conodonta[1]. This discovery set the stage for *Wonderful Life*.

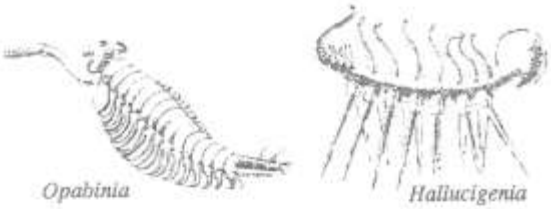
In 1909 Charles Doolittle Walcott, one of the most eminent scientists of his day, discovered a deposit of exceptionally well-preserved sediments high in the Canadian Rockies in what is today Yoho National Park. This deposit, called the Burgess Shale is, according to Gould, "the most precious and important of all fossil localities," chiefly because in it are found well-preserved fossils of a whole gamut of soft-bodied creatures from the early Cambrian era, 530 million

[1] see Aldridge, R.J. & D.E.G. Briggs (1989) A Soft Body of Evidence. Natural History 5/89, pp: 6-11.

years ago. Walcott published the results of many of his discoveries describing the creatures as early precursors to conventional creatures like trilobites, polychaetes, chaetognaths, jellyfish, and sea-cucumbers. One more iota of information on the scientific heap.

In *Wonderful Life*, however, Gould chronicles a re-examination and expansion of this research by three unlikely heros; paleontologists Harry Whittington, Derek Briggs and Simon Conway Morris. As a result of a more detailed examination of the fossils, but principally due to a more flexible mind-set, they discovered that the characteristic animals of the Burgess Shale, beasts with exotic names such as *Nectocaris, Odontogriphus, Dinomischus, Amiskwia, Hallucigenia, Wiwaxia* and *Anomalocaris* are not just odd variations on conventional creatures but new and heretofore unknown phyla — creatures with entirely different plans of organization, as different from one another as animals such as fish, polychaetes, sea urchins, crabs and jellyfish are from each another!

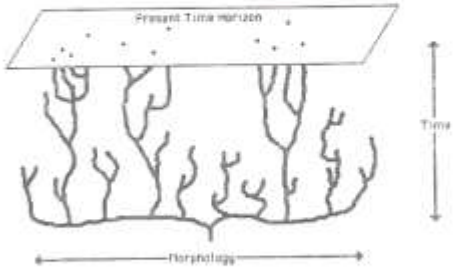
Consider *Opabinia*: it has a bizarre frontal nozzle complete with a prodigious terminal claw, five large, stalked eyes, no legs, and paddle shaped gills on all but one of the fifteen body segments. Or the aptly named *Hallucigenia* standing on seven pairs of pointed spines with seven large dorsal tentacles (each possibly having its own mouth!) and six curious posterior tentacles at the base of the 'tail. Even paleontologists, reports Gould, greeted the descriptions of these animals with laughter, so 'weird' is their appearance.



Opabinia *Hallucigenia*

There is no end of fascinating repercussions from this discovery and Gould tries to chase several of them down. How could Walcott have been so mistaken about the nature of his discovery? What does it tell us about the role of ideology and preconceptions in shaping what scientists actually 'see' in examining specimens? How did these three contemporary scientists shake themselves free of their preconceptions? Gould offers many fascinating glimpses into the politics, sociology and ideology of science in attempting to answer these questions. Perhaps the most fascinating aspect of his book, however, is the implications about the nature of evolution and of life itself.

Harken back to that branching tree of evolution, becoming ever broader with time in a pattern which Gould calls the "cone of increasing diversity." Now add the creatures of the Burgess Shale. The result looks more like a mat of clubmosses lying flat on the stratum of the 'Cambrian explosion.' No tree — no cone of increasing diversity. This model, called 'diversification and decimation' by Gould assumes a very different pathway of the emergence of multicellular life. It injects the concept of extinction into the very heart of evolution. Many entirely original plans of biological organization have utterly disappeared. Although today there may be a greater number of species than ever before and a fantastic degree of diversification, elaboration and specialization *within* groups (the insects are a prominent example), this diversity manifests itself as variation on a consistent pattern of bodily organization. Insects for all their diversity all have three body segments, similar mouthparts, six legs attached to the thorax, etc.



It is a fascinating and perhaps unanswerable question as to why such an amazing variation in basic *kinds* of creatures could have arisen this one time in the history of life when all the subsequent millennia of evolution, including several mass extinctions, have produced not so much as a single new phylum. Could the almost unpopulated Cambrian oceans have 'released' life for one, and only one time, from Darwinian competitive exclusion and survival of the fittest? Could creatures have evolved in peculiar and unique directions unfettered by the intense competition which would dominate life's later pages? Or perhaps the genetic material, which organizes the very nature of life, was in some way more 'plastic', allowing creatures a greater latitude for variation? Was this responsible for the extraordinary Burgess animals? We may never know the answers.

Another fascinating question concerns the Ediacarian and Tommotian faunas. Dolf Seilacher, a German paleontologist has proposed an original scheme of classifying these animals based on their anatomical design[2]. He argues that since it does not even remotely resemble that of any living creature, Ediacarian animals represent an entirely separate, and failed, experiment in multi-cellular life.

Could it all have turned out differently? The hidden implication of the Burgess Shales is that life as it exists today is a product of a select number of survivors from a much larger number of potential candidates. Their selection might not have been accidental but, as Gould persuasively argues, it might well have been quite random. Rewind the tape of life back to the Cambrian, as Gould suggests, and let it play once again and there

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2 Seilacher, A. (1984) Late Precambrian Metazoa: Preservational or real extinctions? In H.D. Holland & A.F Trendall (eds.), *Patterns of change in earth evolution*, pp. 159-68. Berlin: Springer-Verlag.

is no guarantee that the same set of beasts will survive. In fact, given the nature of the random forces responsible for decimation, there is reason to believe that a different group would make it through the sieve of extinction. There is nothing necessary about the way it turned out this time. Life is contingent. *We* are contingent.

At the very end of *Wonderful Life*, in a chapter called Possible Worlds, Gould introduces *Pikaia* from the Burgess Shales, the world's first known chordate — perhaps the ancestor of us all. It's a humble five centimeter flattened, worm-like animal not particularly distinguished amongst all the other curious creatures which populated this ancient sea. Was there anything preordained which specified that its ancestors would survive and prosper whereas the oddball *Wiwaxia*, with huge spines on its back, or *Anomalocaris*, with its circular mouth and bizarre feeding appendages, would disappear without issue? I doubt it. There but for the grace of the angels go we. On the one hand one might feel poised on the brink of an existential abyss: here on this earth only by a random quirk of history and no more necessary in the great scheme of things than a trilobite. On the other hand it makes our life all the more precious knowing that it arose through a unique and unrepeatable set of circumstances. It truly is a *wonderful* life.

Pikaia

My Bumblebees

Harry L. McAlary

Please don't kill my bumblebees
I need all I can find,
With them I have apples
Without I'm in a bind.
I also like my cherries
And plums are tops with me,
A juicy pear is the very best
So listen to my plea.
I can't have apples, Lord forbid,
And no cherries in my trees,
Nor plums and pears will be around
If you kill my bumblebees.
Move slowly through the flowers
They do not wish to sting,
Their desire is making honey
To do them till next spring.
Please watch your use of sprayer
When protecting crops and trees
It's better for you to spray yourself
Than to kill my bumblebees.

Coastal Partners

Last spring the Federation joined with Albert County Heritage Trust in a program to protect coastal resources and to educate the public about the impact of human activities on our shores. Called Coastal Partners, the program was financially supported by the Environmental Partners Fund of Environment Canada, which matched in-kind donations, volunteer time, and additional money from: World Wildlife Fund (Canada), the New Brunswick Department of Labour, Employment and Immigration Canada, and the New Brunswick Department of Natural Resources and Energy. The New Brunswick Museum, the Club des naturalistes de la Péninsule acadienne, the Centre for Marine Conservation, the Huntsman Marine Science Centre, and many individuals also lent a helping hand.

The activities were many-faceted and stretched for hundreds of miles. There were two groups of workers: nine students and a manager.

The North Shore Group started work in May, which enabled them to reach children at the end of the school year and inform them about the vulnerable nests and chicks of the endangered Piping Plover. Signs put up on the beaches attempted to alter the behaviour of beach users. By the end of the summer the North Shore group was greeted with enthusiasm by the inhabitants, and many questions were asked during their public appearances. They also received excellent media exposure.

Since there was interest expressed in setting up a more permanent facility on the Acadian Peninsula, the group responded by preparing a preliminary plan for a nature interpretive centre. We hope to be able to report about it in the future.

The Fundy Shore group concentrated on the protection of migrating shorebirds, extensive cleanup of beaches, and public information programs. As a result, the community took more interest in the shorebird migration, as well as problems connected with pollution of the Bay of Fundy. Considerable effort was focussed by both groups on local fairs and festivals.

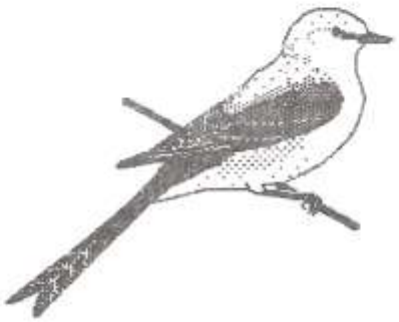
Hopefully, this first year of Coastal Partners will not be the last. There is reasonable assurance that the program can be extended for two more years. We hope it will generate more interest in the problems facing our coast.—Mary Majka

A Scissor-tailed Flycatcher

David Clark

As I settled behind the wheel of my car, I thought back about the previous days. On Sunday morning I had loaded up my camping gear and canoe at home near St. Andrews to spend three days on the Miramichi River. Sunday evening and Monday passed in quiet solitude, the stillness of the early fall days broken only by the occasional nagging of a red squirrel, which drives my dog crazy. She has had a life-long hobby of pursuing squirrels (without success). In an odd way she mirrors my own life-long interest in birds and birdwatching. I'm not certain when I started "chasing" birds but as I grew up, my stages of life seemed to be marked by increased mobility to pursue interests, and mainly birds.

On Monday night I was drifting off to sleep when I came awake with a start. I heard an owl, but was unsure of its identity in the dreaminess of half sleep. I immediately hoped it was a Long-eared Owl. Although not that uncommon in New Brunswick I just hadn't found one. If this was it, then it was to be the "magic" three hundredth bird species in New Brunswick for me. But if it was, there was no one to share the moment—apart from my dog Aja who would rather sleep than be bothered at that point in the day—and there was the risk of being chided for having no proof... "I see... you were all alone... are you sure it wasn't a crow?" or some equally disdainful remark from my birding "friends." I was then certainly awake. A Barred Owl called in the distance. I relaxed. Well, I didn't have to explain a Barred Owl to anyone.



Dawn broke clear and cool on Tuesday the 19th of September 1989, but soon ominous dark clouds were rolling past. As the day wore on I decided to pack up and hightail it for my parents' place near Saint John instead of having to do it the next day in what appeared surely to be rain.

So, now at the car I tune in CBC Moncton on the radio. It's Stuart Tingley doing his call-in programme about birds. Great! Oh no... "There have been three species unusual to New Brunswick seen over the weekend." Why this weekend? "A Western Kingbird... a Sandhill Crane..." Whew! Wonderful birds but I've seen them here. Stuart now talks about something else Does he know I'm waiting to hear the THIRD species? At last... "But the best one is a Scissor-tailed Flycatcher at Saint-Amateur in northeastern New Brunswick." Now that IS a nice bird!!! I turn the wheel for Chatham instead of Saint John, looking all the while for a telephone to call Stuart and ask for directions. I see no telephone. Should I stop, run wildly to a complete stranger's house and ask, no, demand to use the phone? "It's an emergency. Yes, I have to find out about a bird." Shyness or common sense regains control. I stop at the first telephone booth I finally find. But it is now well past five o'clock and the phone-in programme ended then.

Stuart had mentioned that Cecil Johnston had also seen the bird, so I call him in Saint John. Cecil is astonished that I should call him from Chatham as he has been trying to track me down for a day to let me know about the flycatcher. I assure him I am not telepathic but have received "waves" from the radio. I get precise directions from Cecil as to where the bird was seen last, thank him, and am off. The weather has cleared somewhat but the sun now seems to be diving for the horizon and it will be touch and go if I make it to Saint-Amateur before dusk.

Along the way it clouds over again and my spirits dim. They dim even more as I approach and pass the spot described by Cecil. I stop and scan the area. No birds! I mean no birds in sight, of any kind. I had expected other people too. Surely others would come out for a bird like this? continue along the road and over a knoll. A crowd of fifteen or so people are gathered beside the road. They have binoculars and telescopes and are looking at something!

I nonchalantly stroll from the car. My perception of this stroll may vary with the fact of an excited scramble.

I hear my name and am thrilled and embarrassed at this. Without recognizing faces I move into the crowd and ask quietly, "Is the bird here?" Someone points silently to a telescope. I shakily look through it. There it is! Incredible. Beautiful. A Scissor-tailed Flycatcher—it should be in Arizona or somewhere south but here it is in all its splendour. I think I say "WOW!" or something equally impressive, but I am more or less speechless. The bird flies gracefully off after a very short couple of minutes, I stand, unspeaking. I finally realize I am among many familiar faces, those of fellow birdwatchers mostly from la Péninsule acadienne. At last someone asks "And what does that make you?" I reply "This is it—number 300." Suddenly there is great joy, and I am congratulated by friends and strangers alike. No... we are all friends. And that is what birdwatching in all of its forms is all about.

The Rise and Fall of *Passer domesticus*

Rudy Stocek

The ubiquitous House Sparrow may be declining in New Brunswick. Perhaps you've noticed \fewer birds around in the last decade or so. I have, and since they were rather bothersome and disruptive to my past Tree Swallow studies, I wasn't moved to tears. This Eurasian weaver finch, best described as a "pugnacious ruffian" can drive native birds away as well as evict them from their nest boxes and nest cavities. It was probably a major factor in the decline of Cliff Swallow numbers.

The House Sparrow was first introduced to North America in Brooklyn, New York, in 1850 where it was seen as an attractive bird and one that would help control insect pests. Several introductions followed in other parts of the United States and Canada (Quebec and Nova Scotia). It was wildly successful and spread rapidly, taking only 50 years to occupy habitats over the entire U.S. Populations grew especially large i cities where horse transportation was common and feed grain was widely used. It overwintered close to settlements, feeding on grain stores and human garbage.

The first birds seen in New Brunswick arrived at Saint John in grain cars from the west in early 1884. However, there was an earlier introduction of the House Sparrow in Kings County, Nova Scotia, in the mid 1850s. By 1889 the birds were seen in Cape Breton. The first record from Prince Edward Island was in Charlottetown in 1886. Newfoundland sparrows were thought to have come from either nova Scotia or Europe.

However successful the House Sparrow was, its urban numbers started dropping in the early 1900s as reported in Nova Scotia and the eastern U.S., with the advent of the automobile (fewer horses, less grain) and the closing of small farms. Since 1970 the House Sparrow has shown a steady decrease in winter numbers in southern Ontario and there have been significant recent declines in five northeastern states and four southern states. The Breeding Bird Survey has also shown a significant decrease in breeding House Sparrows in the eastern region of the continent since 1966. Here in New Brunswick there has been a significant decrease of about 6% annually in the breeding bird over the last 20 years.

How about wintering House Sparrows in the province? Do they also show this population decline? To answer this, I used that vast storehouse of winter sightings, the Christmas Bird Count. I selected three urban counts in the southern part of the province, Fredericton, Saint John and Moncton with records extending from 1966 to 1988. The number of birds seen per party hour was the criterion used to assess population trends.

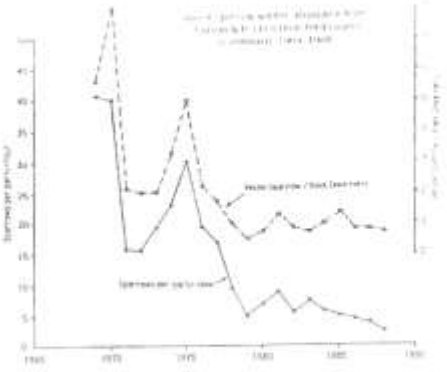
There is no doubt that winter House Sparrow numbers have decreased in New Brunswick since at least 1969 (Figure 1). All three centres show the decline but at different rates. After a depression in the early 1970s, all counts show an upswing in the mid-1970s followed by an abrupt drop to recent low levels.

Another means of portraying bird abundance is through the use of a reference species. This allows for the comparison of sparrow numbers with those of another bird species that is relatively stable over the period, independent of the effects of weather and other variables. The species chosen and found in all three centres was another urban companion, the Rock Dove. Its relatively low uniform numbers since 1969 show no trend. Again, using this comparison, the downward trend in sparrow numbers is evident (Figure 1).

Why this decrease in House Sparrow numbers in urban/suburban areas in the last two decades? Certainly the reduction in horse transportation is long past its influence. Technological advances in agriculture have probably effected cost-efficient farming with less waste and cleaner operations resulting in fewer feeding opportunities for the sparrows. A reduction in the number of feed mills could probably have some effect, yet more home bird feeders could to some extent compensate. Continued urban and suburban development is likely affecting the availability of winter cover probably influencing both sparrow distribution and survival.

Weather certainly reduced some numbers, as reported for the sever eastern winters of 1976-77 and 1977-78. House Finch increases have been correlated with House Sparrow reductions in five northeastern states; this may or may not be a cause and effect relationship. et these decreases have also occurred in states and provinces where the House Finch is not present. The House Finch is now starting to invade New Brunswick. It will be interesting to see how it interacts with the House Sparrow here.

We may simply be seeing the demise of a bird species with past adaptive vigour that is now losing any genetic advantage and is adjusting to a new lower equilibrium in the urban/suburban environment. This persistent weaver finch, with its versatile feeding habits, will likely be around for a long time yet but this "pugnacious ruffian" will probably not be nearly as abundant as we have known it to be. Amen!



Guides de fleurs sauvages du groupe Fleurbec

Rose-Aline Chiasson

Formé par une dizaine d'amis, pour la plupart des botanistes professionels, le groupe Fleurbec s'est formé en avril 1973. Leur but était d'enrichir le Québec de petits livres s'adressant aux gens ordinaires et traitant des plantes d'ici. Après deux ans de travail, le fruit de leur labeur est apparu sous le titre de *Plantes sauvages printanières*. Six autres suivront. Ces livres sont tous écrits dans un langage simple pouvant être compris sans connaissances préalables en botanique.

Plantes sauvages printanières nous présente 75 espèces de plantes les plus fréquentes et les plus belles. Chacune est illustrée par une magnifique photo sur papier glacé. En plus de son nom scientifique, on donne les noms communs. Pour nous permettre de se répérer plus facilement, chaque description est illustrée par un symbole. En plus de la description de la plante et de sa fleur, on y trouve le temps de sa floraison, son habitat, sa distribution au Québec, les espèces avec lesquelles il est possible de la confondre, ainsi que son utilisation culinaire et médicinale. Il est beaucoup apprécié puisqu'il en est rendu à un tirage de près de 90 milles. Il se vend 17.95$.

Plantes sauvages des villes et des champs, volume 1. En 1978, un deuxième livre voyait le jour, cette fois traitant de 88 plantes communes. Elles sont groupées par couleur et en plus des mêmes symboles que l'on trouve dans *Plantes sauvages printanières*, on traite de leur importance agricole, des moyens de répression, de l'origine et de la distribution de l'espèce. Alors tout en désherbant les plates-bandes ou le jardin, on peut identifier ces plantes que l'on considère mauvaises. Son prix est de 17.95$.

Plantes sauvages comestibles paru en 1981 traite de 90 plantes en commençant par celles qui peuvent nous rendre malade, car il faut bien les connaître avant de s'aventurer dans l'utilisation des plantes comestibles. En plus de traiter des mêmes sujets décrits dans les autres volumes, il traite du folklore de la plante. Cette rubrique rapporte ce que la tradition nous a léguée : des coutumes, des superstitions et des anecdotes du temps où les plantes s'intégraient naturellement à la médecine, aux fêtes et à la vie de tous les jours. On peut se le procurer pour 12.95$.

Plantes sauvages au menu a vu le jour la même année que le précédant, soit en 1981. Cette fois, c'est un guide culinaire. On y trouve au moins 125 recettes. En plus de traiter de la valeur nutritive et de la survie en forêt, le volume suggère la meilleure façon de récolter les plantes sans nuire à leur propagation. Pour être sûr de cueillir la plante que l'on veut, on doit se référer aux volumes antérieurs pour les identifier. Afin de ne pas contribuer à la disparition de certaines espèces, on présente seulement les plus communes, celles dont la cueillette n'empêche pas la reproduction de l'espèce. On y trouve un chapitre sur la valeur nutritive, la récolte et le nettoyage, les modes de conservation et les modes d'utilisation. Il se détaille à 6.95$ seulement.

Plantes sauvages des villes, des champs et en bordure des chemins, volume 2, parut en 1983. Cette fois, c'est 62 espèces de plantes qui sont examinées. Là aussi, les auteurs ont choisi les plantes les plus abondantes, les plus répandues et celles qui attirent le plus l'attention. Cette fois, avec l'origine de l'espèce, on a aussi indiqué la distribution de la plante sur une carte géographique. Avec ses belles illustrations couleurs, c'est un volume très intéressant qui se chiffre à 17.95$.

Plantes sauvages du bord de la mer a vu le jour en 1985. Il est destiné aux gens habitant le bord de la mer et aux vacanciers aimant donner un nom aux choses qu'ils voient. Dans ce livre, on nous présente les 55 espèces les plus abondantes, les plus répandues ou qui attirent le plus notre attention parmi celles qui croissent sur le littoral des parties habitées et touristiques du Québec et des provinces Maritimes. Ce volume suit le même modèle de présentation que les autres, excepté qu'on représente la toxicité par une tête de mort. Cette fois, on trouve une photo de la plante dans son habitat et une autre en gros plan. Chaque plante couvre trois à quatre pages entières. C'est un très bon guide qu'on peut se procurer pour le prix de 17.95$.

Dernier né de cette série et non le moindre est *Plantes sauvages des lacs, rivières et tourbières* parut en 1987. Au début, on y trouve la description de 14 habitats, en passant de l'arctique au désertique. Dans les cartes de distribution, qui couvrent le Canada et les États-Unis, on a ajouté l'utilisation horticole aux autres descriptions. Là aussi, on retrouve souvent la plante dans son milieu naturel et en gros plan afin de faciliter son identification. Ce volume se détaille à 24.95$.

Le groupe Fleurbec, sous la conduite de Gisèle Lamoureux, s'est donné comme objectif principal de contribuer à «reverdir» nos connaissances et faire aimer la flore de l'Amérique. Je crois sincèrement qu'avec cette série de livres magnifiques, ces buts pourront être atteints. On devrait pouvoir se les procurer chez tous bons libraires. Ils sont aussi disponibles en petites quantités au Club de naturalistes de la Péninsule acadienne.

Rose-Aline Chiasson nous fait part ci-dessus de l'excellente série de guides botaniques publiés par le groupe Fleurbec. Il doit y avoir de nombreux livres français portant sur l'histoire naturelle qui sont susceptibles d'intéresser les naturalistes du Nouveau-Brunswick : des guides d'identification d'oiseaux ou de champignons, des oeuvres de référence sur l'astronomie ou sur les baleines et ainsi de suite. Le Comité de rédaction serait reconnaissant aux lecteurs et aux lectrices du Naturaliste du N.-B. de bien vouloir nous suggérer des titres ou des séries de livres qui pourraient faire l'objet de comptes rendus. Mieux encore, pourquoi ne pas présenter vous-même un de vos livres préférés ou faire la critique d'un livre qui vient d'être publié? N'hésitez pas à nous envoyer vos contributions. Vos confrères et vos consoeurs dans les clubs de naturalistes vous en seront bien obligés.

Stephen R. Clayden,
Rédacteur des comptes rendus de livres

A Mixed Pair of Clay-coloured and Chipping Sparrows?

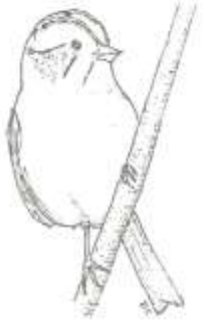
John Wright*

On June 23, 1990, a Clay-coloured Sparrow *Spizella pallida* was discovered in an old field at Grand-Digue by Jim Taylor, an atlasser from Dartmouth. It was subsequently seen by many observers. I made the following observations July 4, 6 and 15.

On arriving, I immediately heard its buzzy song and saw the bird several times. When in the mood to sing, it sang for several minutes, about once every 5 or 10 seconds. My friend Bob Cotsworth estimated that it sang 40% of the time on the morning of July 7.

I also noticed a Chipping Sparrow *Spizella passerina* carrying food into a bushy young spruce, where the Clay-coloured sometimes perched. Soon after, the Clay-coloured came out of the bush carrying a straw. You can imagine my speculation. Where else would a lonesome Clay-coloured find a mate, if not the only common local *Spizella*?

During two hours of observation, the Chipping went in and out of the spruce about 15 times, and the Clay-coloured about 6. The Clay came out twice more with straw, and the Chipping came out three times with fecal sacs. In the spirit of Doyle's dog that "did nothing in the nighttime," encouraging evidence is that I heard no Chipping Sparrow song and saw no second Chipping, and the Chipping showed no hostility towards the Clay-coloured being in her(?) tree. As for the straw, my theory is that he had brought them but she didn't want them—perhaps a case of instincts out of phase between species.



At times, I heard series of high, light *chips*, near where the Clay had been singing, and never overlapping his song. Each series got a bit slower and stronger on its last two or three notes. I think it much resembled a Chipping's alarm call. I could not see the caller, but usually the Chipping had gone off in another direction. One time the Clay-coloured's tail seemed to quiver at the moment I heard *chips* from his direction.

I decided to test the birds' reaction if I went near the spruce. With the Chipping in sight, I walked by the tree 1 m away, pausing a second. The bird veered off to 10 m away, chipped once or twice, and retreated farther. The Clay-coloured was then heard farther away than usual. Possibly both wanted to lead me away.

A few minutes afterward, I finally saw the Clay enter the tree with food (a grub 1 or 2 cm long), but he brought it back out again. Then the Chipping Sparrow flew out. In a few seconds the Clay flew off in the same direction.

After consulting a more experienced birder by phone, I decided to look into the spruce, which was about 2 m high and 30 m away from the nearest trees. A nest about 0.5 m from the ground, on a limb close under another with thick foliage, contained four chicks; one, at least, had eyes open and feather-sheaths about 5 mm long. I left after half a minute. During this time I didn't see or hear the adults, but seven minutes later an adult returned to the tree, and I heard series of eight or more Clay-coloured buzzes from somewhere quite distant.

According to John K. Terres (*The Audubon Encyclopedia of North American Birds*, p. 341), four is a typical brood size for either species, and they have been known to hybridize in Michigan.

On July 6, I watched for over 3 hours with short breaks. An adult frequently visited the tree, usually plunging straight in or disappearing behind it, and almost always emerging at the same point, a little below the nest. Most of the time I could not identify it; when I could it was usually the Chipping.

The Clay-coloured sang near the tree and perched on it several times, but I never again saw him carry food, seldom go inside, and never emerge at the point referred to above. Once he went in, worked toward the nest, flew out a short distance, and uttered several long series of buzzes—30 in one case! Twice he flew to the tree while the Chipping was inside and stayed on after she came out, but uttered no sound.

On July 15, I heard the Clay-coloured sing fairly often, once for two minutes from the nest-tree, but he never went into it. I did not see the Chipping Sparrow at all, but heard a song (or that of a Junco?) once, far enough away to be probably another territory. I could not identify any birds in the neighbourhood as young Chipping Sparrows or hybrids. Being sure the young had had time to fledge since the week before, I looked into the nest. It was empty and clean, except for two small droppings. I saw no signs of disaster (such as feathers beneath the nest). While I looked, the Clay-coloured continued to sing from nearby.

* Recently, naturalists in southeastern N.B. were saddened by the untimely death of their friend John Wright in an automobile accident Oct. 9. The previous day, John had much enjoyed showing others a Yellow-headed Blackbird he had found. A participant in Christmas Bird Counts and the bird atlas project, he had carried out the Breeding Bird Survey at Dundas, P.E.I. for several years. John worked at the Gulf Region office, Department of Fisheries and Oceans, and was currently secretary of the Moncton Naturalists' Club. During the summer he became intrigued with the Clay-coloured Sparrow at Grand-Digue. This report is condensed from his notes. Although there is an interesting association of the two birds, the Clay-coloured's behaviour does not seem attentive enough to strongly suggest that the two birds formed a mated pair.

The Nature Trust of New Brunswick

Hal Hinds

In recent years we have seen more and more of New Brunswick's natural areas destroyed. Many of the sites have been so changed as to be no longer supportive of their former variety of plants and animals. To identify the natural areas of our province which are particularly special and still relatively undisturbed by man, a group of seniors in 1985 obtained funding under a federal New Horizons grant. The group systematically gathered information respecting those natural places in New Brunswick believed to be of the greatest significance, scientifically or aesthetically. The results were recently published in *Critical Natural Areas in New Brunswick*.

A variety of solutions has been developed to help preserve some of New Brunswick's natural areas for posterity. Our national, provincial, and municipal parks help to serve that end. However, there are still many relatively small natural areas which harbour special animals and plants, or have unique ecological features, which have no protection in our province. Provincial legislation enacted in 1975 to create protected ecological reserves has been very slow to formally designate any of the 97 proposed sites, most of which are on Crown Lands. Partly because of the slow progress toward establishment of ecological reserves (only three have been officially designated), and partly because of a need to protect natural areas on freehold land, the Nature Trust of New Brunswick, Inc. has been organized. Both Prince Edward Island and British Columbia have established nature trusts, while other provinces and states have developed similar natural heritage organizations.

The Nature Trust of New Brunswick has been formed to identify, classify, protect, and preserve for posterity natural areas and landscapes deemed to be outstanding. A "natural area" is regarded as a unit of land or water existing in its natural condition which retains to some degree its primeval character, or has biological, geological, or archaeological features of pronounced scientific, educational, or aesthetic value. The Trust is also concerned with fostering in the people of New Brunswick an awareness and appreciation of their natural heritage, and with supporting responsible stewardship of natural areas by landowners.

To advance its goals, the Trust is empowered to purchase, lease, accept by gift or trust any natural area for the purpose of protection and preservation. It is a non-profit, membership organization governed by a Board of Trustees and incorporated under the Companies Act of the Province of New Brunswick.

A promising start has been made in the work of the Trust. A special orchid habitat at Shea Lake has been preserved through a leasing agreement with Fraser Inc. and a small island off Deer Island received as a donation from an individual, who also provided a conservation easement on a larger neighbouring island. The Trust has also assisted the Nature Conservancy of Canada in its purchase of a Furbish lousewort site.

Individuals or groups are encouraged to support the work of the Trust through donations or by becoming members. The $25.00 membership fee is tax deductible. Write to The Nature Trust of New Brunswick, c/o Biology Department, University of New Brunswick, Fredericton, N. B. E3B 5A3.

Furbish's Lousewort Site Protected

On April 22—Earth Day—the Nature Conservancy of Canada officially announced its purchase for $8000 of a 7-acre property to protect an endangered plant, the Furbish's Lousewort. Two thirds of the Canadian population of the lousewort grows at the site north of Perth-Andover in Victoria County.

The plant, which is found only along the upper Saint John River in New Brunswick and Maine has dwindled because of hydroelectric developments and changing human use of its shoreline habitat. Its two other Canadian locations are unprotected.

After efforts to acquire this location as a provincial Ecological Reserve failed, Hal Hinds, UNB botanist, past president of our federation and executive director of the Nature Trust of New Brunswick, championed its cause and last fall successfully negotiated the purchase on behalf of the Nature Conservancy. Across Canada, the conservancy now protects 343 properties totalling 80,000 acres.

Xerox Canada provided startup funds for the lousewort project and the Canadian Wildflower Society, the Nature Trust of New Brunswick and the Conservancy raised the remaining funds. The New Brunswick Federation of Naturalists contributed $300 towards the purchase.

Furbish's Lousewort gets its unusual name from two sources: the spring growth of lousewort plants in Scottish pastures coincides with outbreaks of lice on sheep; our species was named after pioneering botanist Kate Furbish who discovered the plant at the turn of the century.

The Nature Trust has suggested that the property be named in honour of the late Dr. George M. Stirrett, who worked diligently in the 1960s and '70s to make the plant's plight better known and who, incidentally, preferred a more appealing name, the Saint John River Wood-betony. — DSC

Nature News

Winter-Spring

David Christie

In parts of southern New Brunswick large numbers of **Deer** came out into the open in search of bare ground during late winter. For example, on Feb. 22 Peter Pearce saw 197 along Route 112, the Canaan River Road, and an additional 50 between Coles Island and Jemseg. There had been continuous snow cover in the woods since Nov. 18.

There were some **Cougar** (or Eastern Panther, if you wish) reports in southwestern New Brunswick during the spring. I don't have any further details of one "slinking across the road" near Bethel, Charlotte County, Mar. 25 (Philip Miller, via Lloyd Foster) nor one (the same?) near Digdeguash Apr 29 (Dianne Cail). Another, photographed as it crossed behind a home at Rusagonis, Sunbury County, in May is controversial. Experts who have studied the videotapes have not been able to agree; some believe it was a small Cougar, others a large domestic cat.

A very early bat, a **Little Brown** (or its close relative relative, Keen's Long-eared Bat) was out of hibernation and flying around at Fundy National Park during mild weather Mar. 12 (David Clark).

Birds

This section deals first with interesting winter birds not reflected in the Christmas Bird Count reports of the last issue, followed by a few notes on spring migration, and concludes with the highlights of the spring.

The CBC count period record of **Snow Geese** in the Saint John area (16 flying over Bayswater Dec. 31—Mitzi Withers) was followed by a late flock of 13 seen by Agnes and Bill Fowlie at Black River Bridge, south side of Miramichi Bay, Jan. 7 (*fide* Harry Walker). 23 **Brant** at Little Lepreau, Charlotte Co., Feb. 24 (Mark Phinney & Dwayne Sabine) probably represent northward migration, as do flocks of Canada Geese at Grand Manan Mar. 2 (Juliet Hickman). Peter Pearce saw a male **King Eider** Jan. 28 at St. Andrews, where one or two are reported virtually every winter. At The Wolves, their winter stronghold in the Bay of Fundy, there were 26 **Harlequin Ducks** Jan. 31, 30 on Mar. 27 and 24 on Apr. 6 (Pat Kehoe). One was at Anthony's Cove Mar. 15 (Wilson), where Saint John's first CBC record had been found in December. In spring Harlequin Duck was reported at Le Goulet Apr 7 (Marcel David & Rosita Lanteigne) and between Inkerman and Tracadie Apr.22 (Club des nat. de la Péninsule acadienne). Proving their hardiness if open freshwater is available, **Hooded Merganser** were seen in February, at Hardings Point on the 10th (pair—Withers) and at Edmundston on the 18th (female—Madeleine & Rita Lavoie, Georgette Thibodeau)

Late winter reports of an **Osprey** were surprising, since the first migrants are usually expected about the second week in April. On February 27 or 28 an Osprey flew along the shore at Fredericton and right over the head of the captain of the "Pioneer Princess" river boat, a man who's spent a lot of time on the river and knows ospreys and eagles well (*fide* Peter Pearce). A couple of days later, N.B. Power employees reported one inspecting an Osprey nest on power lines in the northern part of the city and on March 5 Shirley Sloat reported an Osprey below Mactaquac. These three reports together are quite convincing. There was a lot of open water in the Mactaquac—Fredericton area at the time.

Up to 7 **Bald Eagles** (2 adults, 5 immatures on Feb. 2—Rob Walker) on the shore at Alma and Fundy National Park were a record number there. An adult **Golden Eagle** wintering for at least the fourth successive year in the Shepody Mountain—Daniels Marsh area of Albert County was seen by several observers from before Christmas into March. Another was at Musquash about Mar. 17 (Murray Davis, *fide* Rudy Stocek). A **Goshawk** was caught in a trap at Pigeon Hill, on Lamèque Island, Mar 4 (*fide* Hilaire Chiasson). Two **American Kestrels** were hunting around Saints Rest marsh, Saint John, Jan. 5 (Aldei Robichaud). Although never more than one was seen at a time, descriptions suggest that there were perhaps three **Gyrfalcons** along the Petitcodiac at Moncton and Riverview from December 20 into March (Bob Cotsworth & Rob Walker). The birds were observed catching pigeons around the city dump and the Gunningsville bridge. Another gyr was at East Wolf Island Jan. 31 (Kehoe).

A **Ruddy Turnstone** with a group of Purple Sandpipers at St. Andrews Feb.22 (Dwayne Sabine & Scott Makepeace) was only the second or third winter record in N.B.

In addition to CBC records, a **Short-eared Owl** was at Pigeon Hill, Lamèque Island, Dec. 13 (*fide* H. Chiasson) and one at Gardner Creek, St. John Co., Jan. 15 (Bruce Bagnell).

A **Red-headed Woodpecker**, a daily visitor all winter at Alice Webb's feeder near Gagetown, was still there as late as May 4 (Enid Inch, David Myles, Pearce). In addition to the 3 **Northern Flickers** on the CBCs, one was also seen at Rivière-à-la-Truite, near Tracadie, till Dec. 14 (Jean-Yves Paulin).

A **Tufted Titmouse** reported twice, independently, in downtown Fredericton December 15 and 18 (Andy Didyk) could not be relocated. A true **Winter Wren** was seen in Odell Park, Fredericton, Feb. 10 (Milda Markauskas & Barry Monson).

Tom Greathouse saw a **Varied Thrush**, a rare visitor from the West, in his yard at Newcastle twice on Jan. 25. It picked up something from seed scattered on the driveway but must have moved on in search of a more suitable source of food. The CBCs showed that it was a very good winter for **Bohemian Waxwings**. A good-sized flock of 121 were feeding in a crabapple tree across the street from Mike Majka's office in Moncton Jan. 12.

A **Pine Warbler** had been visiting a Saint John feeder for 6 weeks when Cecil Johnston first heard about and saw it in early February; it was still present Mar. 3. A **Rose-breasted Grosbeak** that appeared at Peter Pearce's feeder in Fredericton Nov. 22 was not seen after December 2; it's the second reliable winter record for this province.

A **Field Sparrow** visited Rob Walker's at Harvey, Albert County, from November till Apr. 8; another came to a Newcastle feeder for 2 weeks in December, then disappeared (Maxine Tozer). The **Lark Sparrow**, which was our latest-ever record when it first appeared in November, at Dan Busby's feeder in Sackville survived until about January 6. A **Fox Sparrow** at Pointe-Alexandre on Lamèque Island till Dec. 13 is the first December record Hilaire Chiasson knows of on the Acadian Peninsula. A **White-crowned Sparrow** with an injured wing visited Simon Bouchard's feeder at Saint-Hilaire from Nov. 22 till Dec. 8.

Seldom do we have an average year—as this was—for **Common Redpolls**; most often it's feast or near famine. Seen in small flocks throughout the winter, a few ventured to feeders in late February in the Moncton area at least. The February newsletter of the Fredericton Nature Club mentions "large flocks about but seldom reported at feeders." Farther north, an impressive flock of 200 were coming to Jeannine Bossé's Edmundston feeder late in February. Single **Hoary Redpolls** visited feeders at Edmundston at the end of February (Bossé)and Saint-Basile Mar. 4 (Rolande Martin), and from 1 to 3 accompanied 50 Commons at a Mactaquac feeder Apr. 11 (Doug Eidt).

A number of birds were reported wintering in Madawaska County that were not seen on the Edmundston CBC. Most of these species are scarce but regular farther south in the province, but winter bird populations are not well-known in "la république": a **Sharp-shinned Hawk** at St-Hilaire Feb. 8 (Bouchard), one capturing an Evening Grosbeak at Edmundston Feb.10 (Bossé); several **Tree Sparrows** at Saint-Hilaire feeders December through February (Hermance Ouellet & Bouchard); a **Song Sparrow** all winter at Edmundston (M. Lavoie); a **Red-winged Blackbird** at Edmundston from the beginning of January (Bossé); single **Common Grackles** through December at St-Hilaire (Ouellet) and Ste-Anne-de-Madawaska (Florida Lavoie).

Mild weather beginning March 9 soon encouraged a pronounced influx of early spring migrants—especially March 17-19. In the Saint John area **Killdeer** was seen Mar. 11, **Grackles** and **Robin** Mar. 14, **Fox Sparrows** Mar. 18 (v.o.). **Canada Geese**, Red-winged Blackbirds and Grackles reached Albert County Mar. 12-13 and Robins Mar. 15-18 (v.o). At Fredericton the first wave of blackbirds and robins arrived March 18 (FNC Newsletter). At Oakland, near Florenceville, Red-wings and Grackles were first seen Mar. 17 and Robins Mar.19 (Ansel & David Campbell). In Madawaska, Red-wings, Grackles, **Cowbirds, Mourning Dove** and numerous **Starlings** appeared at at Saint-Hilaire Mar. 17-18 (Bouchard & Ouellet). In the northeast Red-wings and cowbirds reached Bathurst Mar. 18 and Canada Geese and Grackles Mar. 19 (v.o.) while on the Acadian Peninsula, arrivals were reported of Cowbird Mar. 16, Killdeer Mar. 17, Red-wing Mar. 18, Grackle Mar. 19, and Robin Mar. 20 (v.o.). **Gannets** were near shore at Four Roads as early as Mar. 23 (H. Chiasson).

It's ironic that in a spring during which a record-early **Cliff Swallow** appeared at Harvey Mar. 18 (R. Walker *et al.*) and a very early **Tree Swallow** at Daniels Marsh the following day (Mike Majka), that large numbers of swallows would die from cold weather in late May. The few unfortunate early swallows having flown too far north surely soon perished for lack of flying insects.

Most swallows arrived at more normal dates from late April through mid-May but then suffered from 10-12 days of cold, wet weather that might have been normal in mid-April. **Tree Swallows** that had already claimed their nesting sites disappeared to wetlands and ponds where there was the chance of feeding on mayflies and other aquatic insects emerging on schedule from the water. They were joined there by Barn, Cliff and Bank Swallows. When warm weather finally returned, numbers of Tree, **Barn** and **Cliff Swallows** were noticeably reduced. **Bank Swallows**, few of which had returned before the onset of cold weather, seemed normally abundant.

At **Purple Martin** colonies, however, many birds sat waiting for the weather to change, which it didn't do soon enough for their survival. Some colonies were wiped out, others had 90% mortality. In the Saint John valley martins fared somewhat better than those in the Moncton area which was colder. Some desperate nestbox owners took weakened birds indoors and tried to feed them but in most cases it was too late. Fortunately, a contingent of year-old birds, which do not return until June, arrived to help maintain the martins' presence in most areas.

Many warblers arrived before the onset of poor weather but, able to hunt up insect food from the trees and on the ground, were much less affected; there was undoubtedly some mortality but it was not obvious. Most flycatchers didn't arrive until after the cold so with the exception of **Phoebes** and the earliest **Kingbirds** were probably little affected. Unusual reports from southeastern N.B. of flocks of **Bobolinks** sheltering under patio-decks and appearing at bird feeders, as well as of groups of 12 to 20 **Rose-breasted Grosbeaks** at feeders during the bad weather indicate that other species were affected at least in a minor way.

The highlight of spring migration, as far as vagrants go, was a male **Garganey**—an Old World species of teal illustrated in post-1980 editions of the main North American bird guides—discovered by Robert Doiron at Val-Comeau May 15 and seen again from May 20 to at least 23 (v.o.). The only previous provincial record was a male at Red Head in May 1979. One wonders whether a male Garganey identified by park interpreters at Cavendish Bay, P.E.I., May 29 (*fide* Jean

Ouellet) might have been the same bird that was at Val-Comeau.

A **Leach's Storm-Petrel**, likely blown off course by strong winds off the Gulf of St. Lawrence, was fluttering about Halls Creek Marsh at Moncton May 23 (Stuart Tingley). Evidently the same bird was found dead in the city two days later.

A **Great Egret** appeared at Moncton May 13 (Halton Dalzell) and apparently stayed around for a couple of weeks. There was also one at Grand Manan on the Victoria Day weekend (May 19-21—Johnston *et al.*) Single **Snowy Egrets** were reported Apr 14 -15 at Deer Island (David Coombs, David Thompson); Apr 26 at Red Head Marsh (Paul Clark); May 14-19 at Saints Rest Marsh (Johnston *et al.*); Victoria Day weekend at Castalia (Jim Wilson *et al.*); May 25-26 at Waterside (Rick Elliott *et al.*).

There was a large flight of **Glossy Ibises** north of the regular breeding range, and several reached New Brunswick. Three at Dieppe Apr. 13-14 (v.o.), may have separated, as only one was there Apr. 16 (Joel Landry) and singles were reported farther down the river at Lower Coverdale Apr. 18 (Joyce Lesage) and Dover marsh Apr. 19 (Nev Garrity). Ten were found at Daniels Marsh Apr. 22 (Rob Walker *et al.*) and 2 were still there Apr 29 (Don & Alma White). Finally, there were individuals at Mouth of Keswick Apr. 27 (Gerald Fanjoy & Pearce) and Waterside May 2 (Orland Brown).

Two **White-fronted Geese**, extremely rare in this province were reported at Caron Point, Bathurst Apr. 14 (Ron Gauthier). **Snow Geese** were again in good numbers, though not as numerous as in spring 1989. Several flocks were seen on the Acadian Peninsula (*fide* Rose-Aline Chiasson), the earliest Mar. 24 at Saint-Simon (David), 60 at Fredericton Apr. 6 (Murray Neilsen) and three at the Shepody Marsh Apr 29 (Moncton Nat. Club).

Gadwalls, which are starting to become almost routine, were reported Apr 29 at Tabusintac (Gérard Benoit); Apr 22 at Lower Jemseg (pair—FNC) and May 14 at Saints Rest (pair—Johnston). A **Eurasian Wigeon** was spotted May 5 at Val-Comeau (Doiron). A pair of **Redheads** Apr 15 at the Sackville Waterfowl Park (Don Gibson & Joel Landry) could not be found the next day, when 7 **Lesser Scaup** were the most interesting observation there (Johnston & David Smith); a number of this scaup were also seen in the Jemseg area in April and early May. Hilaire Chiasson notes that **Hooded Mergansers** are hardly ever seen in spring in the northeast where he found a pair at Inkerman Mar 23 and Charlie McAleenan saw one at Bathurst Apr 17. A rare **Ruddy Duck** was at Caraquet May 12 (David).

Turkey Vultures are still rare but becoming increasingly frequent. The first, at Fredericton Mar 25 (*fide* Pearce) was followed by a surprising five at Rang St-Georges Mar. 30 (Audard Godin); they flew over in the direction of Bathurst. Others were 2 at Gagetown Island Apr. 14 (Kehoe & Jeff Patch); perhaps one of the same near Jemseg Apr 26 (Margot Hayes); and one at Saint John Apr 18 (Wilson). The **Peregrine Falcon** pair, back at their Saint John Harbour Bridge nesting location, were already seen mating Mar. 11 (Wilson), while the nesting pair at Fundy Nat'l Park was not noticed back until the Apr. 13-16 Easter weekend (fide R. Walker). Other Peregrines were reported at Burton Apr 5 (Brown), Inkerman May 20 (Benoit) and Grand Manan the Victoria Day weekend (Wilson *et al.*)

Yet another of Robert Doiron's first-records for the Acadian Peninsula was a **Common Moorhen** May 13 at Val-Comeau. An **American Coot** was at Red Head Marsh Mar. 31 (Myles).

Lesser Golden Plovers were reported Apr 7 at Inkerman (Benoit) and near Gagetown Apr 16 (Gibson). Observers should always check spring goldens carefully because of the possibility of stray Greater Golden Plovers from Europe. Refer to the National Geographic's field guide for identification tips. A long-legged, black and white shorebird seen at the Letang estuary, near St. George, Apr. 7 by Richard Saunders and his wife, who did not have binoculars with them, was later identified as a **Black-necked Stilt**, which would be an extremely rare find here; there have been a couple of spring records but much later in the season. **Upland Sandpipers** were more numerous this year at their Boishébert nesting location near St-Isidore, where the first were seen May 10 (Donald Cormier). A **Stilt Sandpiper** at Jemseg Apr 13 (Johnston) was unusual but not unprecedented in spring. **Wilson's Phalarope** was reported at Caraquet (David) and in the Saint John area (Jim Edsall), both on May 14; presumably others of this increasing species were also seen.

There were 3 **Common Black-headed Gulls** with Bonaparte's at the Tracadie sewage lagoon May 24 (Myles & Edsall). Jim Edsall found an adult Lesser **Black-backed Gull** at Lincoln Apr 20, likely the same individual he saw there as a 3rd year bird a year earlier.

Six **Atlantic Puffins** in Northumberland Strait near Cape Tormentine Apr. 19 (Chris Majka) may be the first reported in that area.

The winter's very meager showing of **Snowy Owls** was concluded by one on Apr. 2 (Émile Ferron); it was the first 1990 observation on the Acadian Peninsula. Less effort was spent looking for **Boreal Owls** this year than last, but John & Gwen McKenzie did hear one calling May 25 & June 2 in boggy woods near Pointe-Sapin.

A **Western Kingbird** at Germantown Marsh, near Riverside-Albert, May 20 was unusual for spring (Angus MacLean).

Eastern Bluebirds continue their increase. Up to three at a time were seen at New Horton, near Riverside-Albert, between Mar. 24 and Apr. 13 (Connie & George Lutes). To the northeast the species was found at Caraquet May 8 (Victorin Godin).

A male **Golden-winged Warbler** discovered singing at Saints Rest, Saint John, May 5 by Georgette Thibodeau & Gemma Ouellette is one of only a few that have been reported in the province. Hal Hinds found 2 **Pine Warblers** singing on Currie's Mountain, near Douglas, Apr 22, forerunners of the nest to be found there in early June.

There were several reports of **Cardinals** that survived the winter in southern parts of the province, including a nest with young at North Head, Grand Manan, on the Victoria Day weekend (Tingley *et al.*) **Indigo Buntings** were quite numerous in the south, and there was one at a feeder at Petite-Rivière-de-l'Île, Lamèque Island, for two weeks beginning May 28 (Benoit *et al.*)

Finally, a young male **Yellow-headed Blackbird** made a short appearance at Riverview May 29-30 (John Tanner & Mike Majka).

Abbreviations

CBC	Christmas Bird Count
et al.	and others
FNC	Fredericton Nature Club
v.o.	various observers

Federation News

Annual Meeting Weekend

About 75 members from throughout the province attended the annual meeting weekend of the Federation held in Fredericton June 8-10.

Activities focussed on the theme "the lower Saint John River and its valley." The event began with five guest lectures outlining the geology, glaciation, flora, fauna, human settlement and environmental issues of the area.

Fourteen field outings to environmentally sensitive areas and diverse wildlife habitats were held over two days enabling local and visiting naturalists to experience nature by foot, canoe and houseboat. A number of field trips were geared to naturalists with a general interest in nature, while others were specifically for viewing birds, insects, trees, wildflowers and scenic locations. Highlights of the the field outings were a Sandhill Crane (normally found in western Canada), the first nest of the Pine Warbler ever discovered in New Brunswick, and a 400-year-old Eastern Hemlock, designated as a Great Tree of New Brunswick.

After a salmon and fiddlehead buffet at the Hugh John Flemming Forestry Centre, the Fredericton Nature Club—hosts of the meeting—gave an audiovisual presentation, "Naturalists of the Fredericton Area—Then and Now."

At the business meeting, members voiced their concerns over the impending development or destruction of a number of the 65 proposed provincial ecological reserves. The Board of Directors passed a resolution to urge the government to immediately initiate a review of the status of the proposed reserves and to move to protect those sites. The president, Peter Pearce, secretary, Elizabeth McIntosh, and treasurer, Cecil Johnston, were re-elected to their positions, and Jim Goltz was elected as vice-president, replacing Paul Bogaard who found his other commitments too pressing to continue. Thank you, Paul, for your three years of service.

Our thanks to the Fredericton Nature Club and its dedicated members who planned and carried out a most enjoyable series of talks and excursions. Those of us who attended got to meet them and thank them personally, but we missed the presence of Dusan Soudek, initial chairman of the event, who had just moved to Dartmouth.

Sharp-shinned Hawk Study

This year the Federation entered into a contract with the Canadian Parks Service to investigate the occurrence of pesticide residues in Sharp-shinned Hawk populations at Fundy National Park.

Dr. Ken Meyer, an American raptor specialist, and Kevin Wilson, a forest wildlife student at U.N.B., located five nests and removed one egg from each , as well as taking blood samples from adults and young. (Chemical analyses of the samples will be carried out during the fall.)

The study is aimed at determining whether contaminant levels have changed since the early 1970s—when relatively high residues were noted in local Sharp-shins—and how much is being picked up from consumption of local prey species. The problem of chemical contamination has relevance not only for the common Sharp-shinned Hawk but also other raptors, including the newly re-established Peregrine Falcon.

Annual Dues Increased

At a meeting October 20, the Board of Directors raised the regular annual membership and subscription fee for 1991 to $15, from the $10 charged during 1974-90. Student and sustaining fees remain at $5 and $20.

Liste d'observateurs (trices) d'oiseaux du Nouveau-Brunswick[3]

Faisant suite à la demande parue dans *Le Naturaliste* de mars 90, j'ai rédigé la liste des 20 meilleurs observateurs (trices) d'oiseaux—ou des plus chanceux! Peut-être que plusieurs personnes n'ont pas osé envoyer leur nombre d'observation, allez-y sans gêne.

Un fait à remarquer, c'est qu'il n'y a que 4 femmes pour 16 hommes. J'espère avoir des changements pour la prochaine fois.

Au revoir. — Rose-Aline Chiasson

David Christie	330	Christopher Majka	270
Peter Pearce	324	Henrik Deichmann	266
Cecil Johnston	324	Eric Tull	261
Mike Majka	323	Hilaire Chiasson	250
Mary Majka	322	Donald Cormier	242
Jim Wilson	321	Rose-Aline Chiasson	241
Stuart Tingley	312	Gérard Benoit	234
Brian Dalzell	302	Denise Benoit	228
David Clark	302	Ronald Pellerin	212
Angus MacLean	280	Georgette Thibodeau	202

3 (le 31 mars 1990)

Federation of Nova Scotia Naturalists

Best wishes go out to the Federation of Nova Scotia Naturalists which held its first general meeting last spring. The new federation is composed of eight member organizations from various parts of the province. The first issue of their magazine is to published in October. If you would like to join, send $12 for individual membership ($10 for seniors or students, $15 for families) to the federation, c/o Nova Scotia Museum, 1747 Summer Street, Halifax, N.S. B3H 3A6.

Nova Scotia Bird Information Line

To supplement their existing Rare Bird Alert—a telephone chain similar to those operating in New Brunswick—a group of Nova Scotia birders have established a taped message service providing information on the discovery and status of rare birds, migration fall-outs, concentrations of common species), upcoming field trips and meetings, etc. At the end of the recorded message, callers can report their own observations to the answering machine.

If you're travelling to Nova Scotia, be sure to give it a call: 902-852-CHAT.

Les Amis de la nature

Le club des naturalistes formé en mars 1989 dans le sud-est de la province a choisi cet année un nom officiel, le club «Les amis de la nature». Ce club considère à s'affilier à la Fédération, en vue de faire front commun avec les membres de cet organisme sur des questions relatives à l'environnement. «Les amis de la nature» ont recruté environ 115 membres. Félicitations au club!

Cover Illustration / Illustration de la couverture

Osprey by Jean-Raymond Gallien / Balbuzard par Jean-Raymond Gallien

Author of Article Unknown

In Volume 16, Number 3 we published an article entitled "Toxic Fungus Offers New Budworm Control Possibilities" under the by-line of Brian Dalzell, who had sent it to us. Subsequently, Brian protested that he was not the author. A note on the copy he sent noted: "Written for Atlantic Forestry Journal" but the editor of that journal does not remember the article at all.

Outdoor Adventure Guide '90

An attractive new brochure published by the New Brunswick Department of Tourism, Recreation and Heritage is entitled *Outdoor Adventure Guide '90*. This booklet presents summaries on enjoying whale-watching, bird-watching, wild flowers, beachcombing, rockhounding, hiking, cycling, canoeing and kayaking, sailing, windsurfing, scuba diving, beaches, workshops, and provincial and national parks in New Brunswick. The information is brief but informative and lists sources of additional information, as well as addresses of businesses which offer whale watching, tours, boat rentals, etc. The booklet is well-illustrated, including a cover picture that features Paul and Mary Bogaard with bicycles and binoculars. Those naturalists are showing up everywhere!

If you haven't seen *Outdoor Adventure Guide '90* yet, call Tourism New Brunswick for a copy: 1-800-442-4442, or 1-800-561-0123 (from outside N.B.)

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