

CONSERVATION, TECHNOLOGY, & THE IDEA OF PROGRESS

Thomas R. Berger

IN 1637, DESCARTES PREDICTED that man's reason and knowledge would enable us "to render ourselves the lords and possessors of nature." The advance of science and technology has brought us very close to achieving this. In fact, we tend to think of the history of the last 400 years as the history of the triumph throughout the world of Western science and technology; we regard our world as an industrial world — one conceived by science and built by technology. We used to think that the changes wrought by science and technology would be altogether benign, that science and technology could provide the means to abolish human misery. For many, this is still the secular faith of our time. In recent years, however, another view has begun to take hold: that the advance of science and technology — especially large-scale technology — may entail social, economic, and environmental consequences whose cost may be enormous and which may condition, or even severely limit, the choices open to us in the future.

The pace of change, and the costs that it entails, are only now beginning to be understood in the industrialized nations. In North America the metropolis's requirement for energy and resources — energy and resources now being sought at the frontier and beyond — are bringing industrial activity to communities which may not be able to cope with the impact. Often these communities are Native communities, our own Third World. In Canada, the recent clashes of culture and of values between the dominant society and the Native peoples are forcing a reconsideration by Canadians of the assumptions by which we live and of the means by which we hope to prosper.

Industrialism is not only a creator of wealth, but also a shatterer of established social systems and a powerful instrument of control in the new social systems that it gives rise to. Its attraction lies not only in the affluence it promises, but also in the freedom it offers from the constraints imposed by nature and tradition. Its emphasis on material values and the challenge it presents to an ethically-oriented idea of society have led many to oppose its proliferation. These include conservationists, educators, and clergy, who may nowadays be found engaged in the

struggle to preserve heritage buildings, environmental values, and the rights of Native peoples — all possibly threatened by the advance of industrial man.

Two ways of looking at the world are in conflict; indeed, they have always been. Throughout the New World, since the time of Cortez and Pizarro, men have sought wealth at the frontier, wealth to enrich the metropolis. Ever since the days of New Spain, men have wished for another Montezuma's treasure, another Atahualpa to be ransomed. The drive to extract the wealth of the New World continues today. But now it is intensified by the instrumentalities of modern industrialism. In a speech that he gave in August 1980, John Armstrong, chairman of Imperial Oil, said: "The Canadian oil industry should be moving into our most promising Atlantic and Arctic properties like an army of occupation." The language Mr. Armstrong chose epitomizes a value judgment about the future and the predominant place of large-scale, capital-intensive technology in that future. In fact, his preferences are widely shared. Our notions of progress have acquired a technological and industrial definition.

But there has always been another strain running through our attitude toward the land and its resources. It is exemplified by the members of the first European settlement in North America (north of Florida) — the Frenchmen who established Port Royal on the Bay of Fundy in 1605. One of them, Marc Lescarbot, a lawyer from Paris, wrote in his diary:

farming must be our goal. That is the first mine for which we must search. And it is better worth than the treasures of Atahualpa for whoso has corn, wine, cattle, linen, cloth, leather, iron and lastly, codfish, need have naught to do with treasure.

It is not surprising that these settlers — who came to be known as the Acadians — had the most harmonious relations of any European settlers with the Native peoples of North America. The view of man's occupation of the land that they exemplified is one which has an increasing number of adherents today in Canada.

The history of North America is the history of the frontier, of pushing back the wilderness, cultivating the soil, populating the land and building an industrial way of life. The conquest of the frontier in North America is a remarkable episode in human history; it altered the face of the continent. The achievement was prodigious: transportation systems were evolved, cities founded, commerce expanded, and an industrial way of life established. The superabundance of land, forest and minerals gave rise to a conviction that the continent's resources were inexhaustible.

Thus, in North America a particular idea of progress has become fixed in our consciousness; but there is also a strong identification with the values of the wilderness and of the land itself, a deeply-felt concern for the environment. In Canada, this concern goes back a long way. It was John A. Macdonald who, in 1885, the very year that the construction of the C.P.R. was completed, brought

a bill before the House of Commons to establish Rocky Mountain (now Banff) National Park, Canada's first national park. In recent years, we have seen the growth of ecological awareness, a growing concern for wilderness and wildlife, and environmental legislation that parallels — although it does not match — the increasing power of our technology, the consumption of natural resources, and the impact of rapid change.

The Canadian identity is intimately connected with the idea of wilderness. Our literature, not to mention our art, is permeated by a fascination with the frontier, a dread of what lies beyond it and, in recent years, a desire to grasp the opportunities it presents. Now, not only against the backdrop of the Canadian wilderness, but also in its midst, there is a struggle to affirm an ethic of conservation, and to establish a redoubt of sanity in a world that sometimes seems wholly committed to fulfilling Descartes' prophecy.

LET ME BE CLEAR ABOUT THE IMPORTANCE that I accord to environmental values. I do not urge that we seek to turn back the clock, to return in some way to nature, or even to deplore, in a high-minded and sentimental manner, the real achievements of the industrial system. Rather, I suggest that environmental values constitute an invaluable aspect of modern-day life: its preservation is a contribution to, not a repudiation of, the civilization upon which we depend.

Of course, it may be said, this is all very well in the case of urban amenities, recreation areas, camp grounds, and our national parks. But of what use is a far-off landscape or seascape which urban dwellers may never see? Why should it matter to the urbanite whether or not the Porcupine caribou herd still makes its annual journey to the Arctic coast, whether or not the white whales abounding in Canadian waters along the Arctic Coast and Hudson Bay maintain their present numbers, and whether or not the snow geese still feed on the islands of the Arctic archipelago? I think it matters because wilderness and wildlife are essential to mankind's sense of order in the universe. They affirm a deeply felt need to comprehend the wholeness of nature and of life. They offer serenity and peace of mind. As Wallace Stegner wrote:

Without any remaining wilderness we are committed — to a headlong drive into our technological termite-life, the Brave New World of a completely man-controlled environment — We need that wild country — [as] part of the geography of hope.

Wilderness implies a remote landscape and the presence of wildlife. There are species that, because of their intolerance of man or their need for large areas of

land, can survive only in the wilderness. Such are caribou, wolf and grizzly bear, which require wilderness to protect the integrity of their populations and to preserve their habitat. Other species conjure up visions of wilderness; there cannot be a Canadian anywhere who does not think of wilderness on hearing the call of a loon or of migrating geese. Then there are the rare and endangered species that do not inherently require a wilderness habitat, but, because they are tolerant of man, have been driven close to extinction. The peregrine falcon, trumpeter swan, and whooping crane are well-known examples of species that are abundant (if abundant at all) only in wilderness areas. You do not have to be a fervent environmentalist to hope that the process of adaptation and evolution through millenia of each of these species should not be ended, that we should not allow their extinction if it can be prevented.

We think of the city, of the metropolis, as the mirror of progress. So we in the industrialized nations consider that the model of economic development that our own experience represents is the only one to which Third World countries ought to aspire. But such a model invariably requires an emphasis on large-scale centralized technology at the expense of traditional values and local self-sufficiency. Usually, though not invariably, such a model emphasizes the development of non-renewable resources (in this sense, even hydro-electric projects, though generating a renewable resource, may entail the inundation of whole river valleys and the renewable resources they contain).

In many countries, where there has been undue policy emphasis on the non-renewable resource sector, unhealthy dependence on that sector results, with corresponding losses in the renewable resource sector. Iran under the Shah, and Nigeria today, are examples of regimes where concentration on development in oil and gas has led to a loss of self-sufficiency in agriculture. The same results can occur of course when agricultural development is seen as essentially a means of obtaining cash crops, and the need to feed a nation's people is neglected. Indeed it is alarming how many Third World countries have followed this path and now find themselves utterly dependent on the fluctuations of world commodity markets while at the same time they are unable to supply their own basic nutritional requirements.

In Canada our policy has been one of expanding our industrial machine to the limit of our country's frontiers. It is natural for us to think of developing the frontier, of subduing the land, populating it with people from the metropolitan centres, and extracting its resources to fuel our industry and heat our homes. We have never had to consider the uses of restraint. The question that we and many other countries face is this: are we serious people, willing and able to make up our own minds, or are we simply driven, by technology and egregious patterns of consumption, to deplete our resources wherever and whenever we find them? Can we — and others — turn away from this monolithic economic mode?

Since the Industrial Revolution, we have thought of industrialization as the engine of prosperity and the means to material well-being. As so it has been, to many people, and to many parts of the world. But the rise of the industrial system has been accompanied by a belief in an ever-expanding cycle of growth and consumption. We should now be asking whether it is a goal that will suffice. Ought we and our children to continue to aspire to the idea of unlimited growth? And, equally important, ought the Third World to aspire to this goal?

This belief in an ever-expanding cycle of growth and consumption conditions our capacity and our willingness to reconsider, or even to contemplate, the true goals of the industrial system. There is a feeling that we cannot pause to consider where we are headed, for fear of what we shall find out about ourselves. Yet, if anything is plain, it is that we in North America will have to get along with a smaller proportion of the world's energy and resources. This entails a reconsideration of conventional wisdom, for we have conditioned ourselves to believe that the onward march of industry and technology cannot and must not be impeded or diverted.

I am not urging that we dismantle the industrial system. But we must pause, and consider to what extent our national objectives are determined by the need for the care and feeding of the industrial machine. Our inability to contemplate — even during the current recession, unprecedented since the Second World War in its severity — an economic future that is not a counterpart of our experience of the last 35 years, has altogether disarmed us, leaving us without the slightest intellectual equipment with which to grapple with adversity.

The issues are profound ones, going beyond the ideological conflicts that have occupied the world for so long — conflicts over who was going to run the industrial machine, and who was going to get the benefits. Now we should ask ourselves, how much energy does it take to run the industrial machine, where does the energy come from, where is the machine going, and what happens to the people who live in its path?

Even our terminology has become eccentric. Those who seek to conserve the environment and traditional values are often regarded as radicals, and those who are undertaking radical interventions in the natural world that threaten the future of existing communities think of themselves as conservatives.

The arguments between industrialists and environmentalists are often conducted at the top of their voices. Those on each side have strong convictions, on the one hand about the future of industrial man, on the other about the world's environment. For the one side, the advance of industry and technology to the margins of the globe represents a kind of manifest destiny for Western man, while for the other it represents an unacceptable threat to the future of the biosphere itself.

THUS THE DEBATE ABOUT THE FUTURE often tends to become a barren exchange of epithets. But we do not face a choice between unrestrained growth and consumption on the one hand and stagnation on the other hand. To reject the philosophy of endless and unlimited growth does not mean that we must choose scarcity and reject abundance.

I am not a partisan of either view. I urge that we adopt a policy of rational and orderly development. The implications of unrestrained growth and expansion are becoming apparent. Examples of the pervasiveness of large-scale technology and marketing out of control can be seen everywhere: tankers cracking up on the beaches; infant formula being peddled indiscriminately in the Third World; the continuing destruction of the rain forest of the Amazon; the mining of soils in many countries. The oil blowout at Ixtoc 1 in the Gulf of Mexico, which ran uncontrolled from June 1979 until February 1980, and the loss of the Ocean Ranger in February 1982, have reminded us that enthusiasm for untried technology may outrun present scientific and engineering knowledge.

The vital agency of change throughout the world is industrial man. He and his technology, armed with immense political and administrative power and prepared to transform the social and natural landscape in the interest of a particular kind of society and economy, have a way of becoming pervasive. Industrial man is equally the creature of East and West. And of the Third World too: many of the governments of the Third World share our commitment to endless growth, even though they may have no real prospect of achieving it. And this is so whether they purport to share the ideology of the West or call themselves Marxist.

Can the nations of the Third World achieve the levels of growth and consumption that have been achieved by the industrialized countries? If they cannot — if the consumption of natural resources at a rate necessary to enable them to do so (not to mention the concomitant increase in pollution) is not possible in a practical sense — then what? We have been unwilling to face up to the moral and ethical questions that this would raise for all of us.

Our ideas are still the ideas of the mid-nineteenth century: the era of the triumph of liberal capitalism and the challenge of Marxism, the era of Adam Smith and the Communist Manifesto. Both of these creeds are the offspring of the Industrial Revolution. Of course, our traditions of democracy and due process, and our willingness to allow the market to determine many important economic choices, distinguish the industrialized democracies from the Soviet Union and its empire. Nevertheless, capitalism (I include under this heading all the regimes of the industrialized democracies, as variants on the capitalist economic model) and communism constitute two forms of materialism competing for the allegiance of men in the world today. Neither has yet come to grips with the necessity for rethinking the goals of the industrial system. As Dr. Ian

McTaggart-Cowan observed in an address he gave in 1975 to the Pacific Sciences Congress:

Is the only way to improve the lot of a country's citizens the way of industrialization, whether it be the western way or the forced march of the U.S.S.R.? . . . Almost inevitably, diversity is sacrificed to a spurious efficiency. The loss of diversity is not merely a matter for sentimental regret. It is a direct reduction in the number of opportunities open to future generations.

As we look toward the end of the twentieth century . . . we see . . . this diversity threatened by dominant society pursuing goals that, though they have produced a rich material culture, are already eroding the sources of their original stimulus.

We should not draw the wrong conclusions. We cannot return to Auburn, there to live without industry and technology. It is rather the rational application of industry and technology that we must pursue: an order based on the human scale and directed to human needs. If we are to do this we shall have to reconsider our belief in an ever-expanding cycle of growth and consumption. It is not only we in the industrial democracies who are being urged to do so. In 1975, before he was expelled from the Soviet Union, Alexander Solzhenitsyn, in his "Letter to the Soviet Leaders," reminded them of

what any village graybeard in the Ukraine or Russian had understood from time immemorial and could have explained to the progressive commentators ages ago, had the commentators ever found the time in that dizzy fever of theirs to consult him: that a dozen worms can't go on and on gnawing at the same apple *forever*, that if the earth is a *finite* object, then its expanses and resources are finite also, and the endless infinite progress dinned into our heads by the dreamers of the Enlightenment cannot be accomplished on it.

He went on:

We have squandered our resources foolishly without so much as a backward glance, sapped our soil, mutilated our vast expanses with idiotic "inland seas" and contaminated belts of wasteland around our industrial centres — but for the moment, at least, far more remains untainted by us, which we haven't had time to touch. So let us come to our senses in time, let us change our course.

Solzhenitsyn's plea was not well received. The Soviet Union is now embarking on a civil engineering project more extensive than any ever undertaken in the West. A dozen rivers flowing into the Arctic are to be closed off, their flows reversed, thus increasing enormously the volume of the Volga flowing south to the Caspian Sea and inundating whole cities, millions of acres of land, and plant and forest life. The environmental and ecological consequences are staggering; the impact on the Soviet landscape and on Europe's weather patterns is hardly imaginable. In the Soviet Union protests are being heard from scientists, historians, writers, even from regional units of the Communist party in the affected areas.

Our imagination has become impoverished in the face of calls for salvation through technology on the one hand and cleansing through a return to nature on the other. It is necessary, as J. E. Chamberlin, writing in the *Hudson Review* in 1982, has suggested, to take control of events in our minds, if we are to shape society according to images which are humanly ordered.

WHAT HAS LITERATURE, what has art, got to do with this?

I think that they have everything to do with it. For literature and art are the expression of our imaginative response to the condition of our time. It is freedom of the imagination that will enable us to resist received wisdom, to question the principles that are said to justify the wrongs of the world, and to speak against the mores that limit our perception of the possibilities the future holds. In the West — and even in the East — people are insisting upon their right to call conventional truths into question.

Liberal capitalism is in the throes of one of its recurring crises; Marxism, though still vigorous as a tool of analysis, has been a conspicuous failure in those countries where it has been installed as the established ideology.

We need a philosophy to sustain us in the post-industrial era, an era for which we have no name, since we cannot yet discern its lineaments. We cannot expect that within a week, or a month, or a year, a new philosophy can be worked out in all its details. We must realize that if we are to postulate, let alone erect, an alternative to a system established 400 years ago, and which has ramified throughout the world, we must be prepared to begin on a small scale. Small can be beautiful, and that applies to theorizing as much as to anything else.

The intellectual challenge of comprehending the shape of the post-industrial era, of comprehending the moral, social and economic goals that will inform that era, will soon be facing us all. We shall have to consider the question that Adam Smith, the prophet of capitalism, asked:

For to what purpose is all the toil and bustle of this world? What is the end of avarice and ambition, of the pursuit of wealth, of power, and pre-eminence?

In seeking an answer, we may discover that insights can be found in the experience of other countries and other cultures. We are now confronted with scarcity of resources, an environmental crisis, and over-population — conditions which have been the lot of the Third World for so long. At the same time it is the Native peoples in our own country who insist on asking profound questions about the goals of industrialism, and about the values that actuate us in our dealings with those who may reject industrial advance.

If we were not distracted by the prospect of ever-increasing wealth, if we were prepared to take control of the industrial system so that it will not run free of

ethical and moral values, then we could conceive a new vision of the just society. Nature has a place in this. On this continent we have always thought of our mountains, lakes, and forests as the equivalent of the wonders of the ancient world. This cliché may still have life in it. For our mountains, our forests, and our wilderness may still provide a sense of order in the universe, a counterweight to the relentless pull of industrial goals, a place where the imagination may be defended. In seeking to save the wilderness we may save ourselves, for wilderness is a reminder of the impermanence of the works of man, a reminder that the earth must be shared with other species and that we are trustees of its wealth, guardians of these other species, and responsible — to generations to come — for their preservation.

A POEM AS BIG AS A MOUNTAIN

Gordon Turner

Here where the sky is not an inverted bowl, is not a roof and walls, but a tiny opening to the stars, miniature possibilities at the wrong end of a telescope, the heaved-up mountains are obstacles to be overcome one way or another: pierced, scraped, sliced, blasted, dislodged, overturned, transfigured for human linear motion and thought. Here words build into balsam trunks, jagged boulders, scarred cliffsides, compress into mass or jam into perpendicular holds on the imagination. Lines here cannot string telephone poles to the horizon, but disappear beyond slashed ridges, around valley corners and you don't know if your words really move onward or outward, if there's actually anyone out there to hear or read what you would tell them. Unless you travel their way.

How many people on the prairies hike across their vastness? There are no guidebooks called *101 Hikes in Central Saskatchewan*. In mountain country, guidebook or not, people climb and every height has its enthusiast, those who have been there, would go again, are going. The mountains alive in summer with the clunk of boots on rock, in winter with the swish of skis on snow. Noise accentuating silence. Sit on an outcropping on a rarefied autumn day and feel you can reach out and touch Old Armchair or run your hand along Wedge, but you know that if you did the white-hot brilliance of the snow would burn you. Mountains like words have to be handled with care, if at all. If you clamber over boulder-strewn gullies, if